# PART H WELDING AND CUTTING

LAST UPDATED:	: 05/20/2016
---------------	--------------

WAC 296-155-400 Gas we	elding and cutting	1
WAC 296-155-405 Arc we	Iding and cutting	4
WAC 296-155-407 Protect	tive clothing	6
WAC 296-155-410 Fire pro	evention	7
WAC 296-155-415 Ventila cutting, and heating	tion and protection in welding,	8
	g, cutting, and heating in way of	

### WAC 296-155-400 Gas welding and cutting.

#### (1) Transporting, moving, and storing compressed gas cylinders.

- (a) You must ensure that valve protection caps are in place and secured.
- (b) When cylinders are hoisted, you must secure them on a cradle, slingboard, or pallet. You must not hoist or transport them by means of magnets or choker slings.
- (c) You must move cylinders by tilting and rolling them on their bottom edges. You must not intentionally drop, strike, or permit them to strike each other violently.
- (d) When cylinders are transported by powered vehicles, you must secure them in a vertical position.
- (e) You must not use valve protection caps for lifting cylinders from one vertical position to another. You must not use bars under valves or valve protection caps to pry cylinders loose when frozen. You must use warm, not boiling, water to thaw cylinders loose.
- (f) Unless cylinders are firmly secured on a special carrier intended for this purpose, you must remove regulators and put valve protection caps in place before cylinders are moved.
- (g) You must use a suitable cylinder truck, chain, or other steadying device to keep cylinders from being knocked over while in use. Such cylinders are not considered to be "in storage."
- (h) When a job is finished, when cylinders are empty or when cylinders are moved at any time, you must close the cylinder valve.
- (i) You must secure compressed gas cylinders in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.
- (j) Oxygen. You must separate oxygen cylinders in storage from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least 1/2 hour.

#### (2) Placing cylinders.

- (a) You must keep cylinders far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. When this is impractical, fire resistant shields must be provided.
- (b) You must place cylinders where they cannot become part of an electrical circuit. You must not strike electrodes against a cylinder to strike an arc.
- (c) You must place fuel gas cylinders with valve end up whenever they are in use. You must place them in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.
- (d) You must not take cylinders containing oxygen or acetylene or other fuel gas into confined spaces.

#### (3) Treatment of cylinders.

- (a) You must not use cylinders, whether full or empty, as rollers or supports.
- (b) No person other than the gas supplier is permitted to attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by the owner, is permitted to refill a cylinder. No one is permitted to use a cylinder's contents for purposes other than those intended by the supplier. All cylinders used must meet the department of transportation requirements, Specification for Cylinders, (49 CFR Part 178, Subpart C).
- (c) You must not use any damaged or defective cylinder.
- (4) **Use of fuel gas.** You must thoroughly instruct employees in the safe use of fuel gas, as follows:
  - (a) Before a regulator to a cylinder valve is connected, you must open the valve slightly and close it immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve must stand to one side of the outlet, not in front of it. You must not crack the valve of a fuel gas cylinder where the gas would reach welding work, sparks, flame, or other possible sources of ignition.
  - (b) You must always open the cylinder valve slowly to prevent damage to the regulator. For quick closing, you must not open valves on fuel gas cylinders more than 1 1/2 turns. When a special wrench is required, you must leave it in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench must always be available for immediate use. You must not place anything on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.
  - (c) You must not use fuel gas from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
  - (d) Before a regulator is removed from a cylinder valve, you must always close the cylinder valve and release the gas from the regulator.
  - (e) If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, you must close and tighten the gland nut. If this action does not stop the leak, you must discontinue the use of the cylinder, and you must properly tag and remove it from the work area. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem, and the gas cannot be shut off, you must properly tag and remove the cylinder from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.
  - (f) If a leak should develop at a fuse plug or other safety device, you must remove the cylinder from the work area.
  - (g) Cylinders not having fixed hand wheels must have keys, handles, or nonadjustable wrenches on valve stems while in service. In multiple cylinder installations one and only one key or handle is required for each manifold.

#### (5) Fuel gas and oxygen manifolds.

(a) Fuel gas and oxygen manifolds must bear the name of the substance they contain in letters at least 1-inch high which must be either painted on the manifold or on a sign permanently attached to it.

- (b) You must place fuel gas and oxygen manifolds in safe, well ventilated, and accessible locations. You must not locate them within closed spaces..
- (c) Manifold hose connections, including both ends of the supply hose that lead to the manifold, must be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. You must not use adapters to permit the interchange of hose. You must keep hose connections free of grease and oil.
- (d) When not in use, you must cap manifold and header hose connections.
- (e) You must not place anything on top of a manifold, when in use, which will damage the manifold or interfere with the quick closing of the valves.

#### (6) **Hose.**

- (a) Fuel gas hose and oxygen hose must be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses must not be interchangeable. You must not use a single hose having more than one gas passage.
- (b) When parallel sections of oxygen and fuel gas hose are taped together, you must not cover more than 4 inches out of 12 inches by tape.
- (c) You must inspect all hose in use, carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion, or be in any way harmful to employees, at the beginning of each working shift. You must remove defective hose from service.
- (d) You must test hose which has been subject to flashback, or which shows evidence of severe wear or damage, to twice the normal pressure to which it is subject, but in no case less than 300 p.s.i. You must not use defective hose, or hose in doubtful condition.
- (e) Hose couplings must be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
- (f) Boxes used for the storage of gas hose must be ventilated.
- (g) You must keep hoses, cables, and other equipment clear of passageways, ladders and stairs.

#### (7) **Torches.**

- (a) You must clean clogged torch tip openings with suitable cleaning wires, drills, or other devices designed for such purpose.
- (b) You must inspect torches in use at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. You must not use defective torches.

- (c) You must light a torches by friction lighters or other approved devices, and not by matches or from hot work.
- (8) **Regulators and gauges**. Oxygen and fuel gas pressure regulators, including their related gauges, must be in proper working order while in use.
- (9) **Oil and grease hazards**. You must keep oxygen cylinders and fittings away from oil or grease. You must keep cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus free from oil or greasy substances and you must handle them with oily hands or gloves. You must not direct oxygen at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.
- (10) **Additional rules**. For additional details not covered in this Part, applicable portions of American National Standards Institute, Z49.1-1973, Safety in Welding and Cutting, applies.

You must also are protect employees from exposure to hexavalent chromium during the stainless steel welding process. See WAC <u>296-62</u>-08003, Hexavalent chromium for specific criteria.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-400, filed 04/19/16, effective 05/20/16. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-16-106 (Order 06-13), § 296-155-400, filed 08/12/06, effective 09/01/06. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-400, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-400, filed 1/21/86; Order 74-26, § 296-155-400, filed 5/7/74, effective 6/6/74.]

# WAC 296-155-405 Arc welding and cutting.

#### (1) Manual electrode holders.

- (a) You must only use manual electrode holders which are specifically designed for arc welding and cutting, and are of a capacity capable of safely handling the maximum rated current required by the electrodes.
- (b) Any current-carrying parts passing through the portion of the holder which the arc welder or cutter grips in the hand, and the outer surfaces of the jaws of the holder, must be fully insulated against the maximum voltage encountered to ground.

#### (2) Welding cables and connectors.

- (a) All arc welding and cutting cables must be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.
- (b) You must only use cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.
- (c) When it becomes necessary to connect or splice lengths of cable one to another, you must use substantial insulated connectors of a capacity at least equivalent to that of the cable. If connections are effected by means of cable lugs, you must securely fasten them together to give good electrical contact, and the exposed metal parts of the lugs must be completely insulated.

(d) You must not use cables in need of repair. When a cable, other than the cable lead referred to in subdivision (b) of this subsection, becomes worn to the extent of exposing bare conductors, you must protect the portion thus exposed by means of rubber and friction tape or other equivalent insulation.

#### (3) Ground returns and machine grounding.

- (a) A ground return cable must have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current-carrying capacity must equal or exceed the total specified maximum output capacities of all the units which it services.
- (b) You must not use pipelines containing gases or flammable liquids, or conduits containing electrical circuits, as a ground return. For welding on natural gas pipelines, the technical portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, Minimum Federal Safety Standards for Gas Pipelines apply. (49 CFR Part 192, Subpart C.)
- (c) When a structure or pipeline is employed as a ground return circuit, you must determine that the required electrical contact exist at all joints. The generation of an arc, sparks, or heat at any point must cause rejection of the structures as a ground circuit.
- (d) When a structure or pipeline is continuously employed as a ground return circuit, all joints must be bonded, and you must conduct periodic inspections to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.
- (e) You must ground the frames of all arc welding and cutting machines either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. You must check grounding circuits, other than by means of the structure, to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.
- (f) You must inspect all ground connections to ensure that they are mechanically strong and electrically adequate for the required current.
- (4) **Operating instructions**. You must instruct employees in the safe means of arc welding and cutting as follows:
  - (a) When electrode holders are to be left unattended, you must remove the electrodes and place or protect the holders so that they cannot make electrical contact with employees or conducting objects.
  - (b) You must not dip hot electrode holders in water; to do so may expose the arc welder or cutter to electric shock.
  - (c) When the arc welder or cutter has occasion to leave work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, you must open the power supply switch to the equipment.
  - (d) Employees must report any faulty or defective equipment to the supervisor.
  - (e) See WAC 296-155-452 for additional requirements.

- (5) **Shielding**. Whenever practical, you must shield all arc welding and cutting operations by noncombustible or flameproof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.
- (6) **Employee protection**. Where welding or cutting operations are being performed in areas where it is possible for molten slag to contact other employees, you must protect those employees from being burned by providing overhead protection, barricading the impact area, or other effective means.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-405, filed 04/19/16, effective 05/20/16. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-405, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-155-405, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-405, filed 1/21/86; Order 74-26, § 296-155-405, filed 5/7/74, effective 6/6/74.]

## WAC 296-155-407 Protective clothing.

- (1) **General requirements**. You must protect employees exposed to the hazards created by welding, cutting, or brazing operations by personal protective equipment in accordance with the requirements of chapter 296-800 WAC, chapter 296-24 WAC, Part I, and WAC 296-800-160. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.
- (2) **Specified protective clothing**. Protective means which you may employ are as follows:
  - (a) Except when engaged in light work, all welders should wear flameproof gauntlet gloves.
  - (b) Flameproof aprons made of leather, or other suitable material may also be desirable as protection against radiated heat and sparks.
  - (c) Woolen clothing preferable to cotton because it is not so readily ignited and helps protect the welder from changes in temperature. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All outer clothing such as jumpers or overalls should be reasonably free from oil or grease.
  - (d) Sparks may lodge in rolled-up sleeves or pockets of clothing, or cuffs of overalls or trousers. It is therefore recommended that sleeves and collars be kept buttoned and pockets be eliminated from the front of overalls and aprons. Trousers or overalls should not be turned up on the outside.

Note: For heavy work, fire-resistant leggings, high boots, or other equivalent means should be used.

- (e) In production work a sheet metal screen in front of the worker's legs can provide further protection against sparks and molten metal in cutting operations.
- (f) Capes or shoulder covers made of leather or other suitable materials should be worn during overhead welding or cutting operations. Leather skull caps may be worn under helmets to prevent head burns.

(g) Where there is exposure to sharp or heavy falling objects, or a hazard of bumping in confined spaces, you must use hard hats or head protectors.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-407, filed 04/19/16, effective 05/20/16. Statutory Authority: RCW 49.17.010, .040, .050. 01-11-038 (Order 99-36), § 296-155-407, filed 05/09/01, effective 09/01/01. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-155-407, filed 1/18/95, effective 3/1/95. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-407, filed 1/21/86.]

### WAC 296-155-410 Fire prevention.

- (1) When practical, you must move objects to be welded, cut, or heated to a designated safe location or, if the object to be welded, cut, or heated cannot be readily moved, you must take all moveable fire hazards in the vicinity to a safe place, or otherwise protected.
- (2) If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, you must take positive means to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.
- (3) You must not perform any welding, cutting, or heating where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a hazard.
- (4) You must ensure that suitable fire extinguishing equipment is immediately available in the work area and you must maintain it in a state of readiness for instant use.
- (5) When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, you must assign additional personnel to guard against fire while the actual welding, cutting, or heating operation is being performed, and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. You must instruct such personnel as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.
- (6) When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, you must take the same precautions on the opposite side as are taken on the side on which the welding is being performed.
- (7) For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, you must positively shut off the gas supply to the torch at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period. Overnight and at the change of shifts, you must remove the torch and hose from the confined space. You must immediately remove open end fuel gas and oxygen hoses from enclosed spaces when they are disconnected from the torch or other gasconsuming device.
- (8) Except when the contents are being removed or transferred, you must keep drums, pails, and other containers, which contain or have contained flammable liquids, closed. You must remove empty containers to a safe area apart from hot work operations or open flames.

- (9) Drums, containers, or hollow structures which have contained toxic or flammable substances must, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested. For welding, cutting and heating on steel pipelines containing natural gas, the pertinent portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, Minimum Federal Safety Standards for Gas Pipelines apply. (49 CFR Part 192, Subpart C.)
- (10) Before heat is applied to a drum, container, or hollow structure, you must provide a vent or opening for the release of any built-up pressure during the application of heat.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-410, filed 04/19/16, effective 05/20/16. Order 74-26, § 296-155-410, filed 5/7/74, effective 6/6/74.]

# WAC 296-155-415 Ventilation and protection in welding, cutting, and heating.

- (1) **Mechanical ventilation**. For purposes of this section, mechanical ventilation must meet the following requirements:
  - (a) Mechanical ventilation must consist of either general mechanical ventilation systems or local exhaust systems.
  - (b) General mechanical ventilation must be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits, as defined in Part B of this chapter.
  - (c) Local exhaust ventilation must consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system must be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits as defined in Part B of this chapter.
  - (d) Contaminated air exhausted from a working space must be discharged into the open air or otherwise clear of the source of intake air.
  - (e) All air replacing that withdrawn must be clean and respirable.
  - (f) You must not use oxygen for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area.

#### (2) Welding, cutting, and heating in confined spaces.

- (a) Except as provided in subdivision (b) of this subsection and subdivision (b) of subsection (3) of this section, you must provide either general mechanical or local exhaust ventilation meeting the requirements of subsection (1) of this section whenever welding, cutting, or heating is performed in a confined space.
- (b) When sufficient ventilation cannot be obtained without blocking the means of access, you must protect employees in the confined space by air line respirators in accordance with the requirements of Part C of this chapter, and you must assign an employee on the outside of such a confined space to maintain communication with those working within it and to aid them in an emergency.

#### (3) Welding, cutting, or heating of metals of toxic significance.

- (a) You must perform welding, cutting, or heating in any enclosed spaces involving the metals specified in this subsection with either general mechanical or local exhaust ventilation meeting the requirements of subsection (1) of this section:
  - (i) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.
  - (ii) Lead base metals;
  - (iii) Cadmium-bearing filler materials;
  - (iv) Chromium-bearing metals or metals coated with chromium-bearing materials.
- (b) You must perform welding, cutting, or heating in any enclosed spaces involving the metals specified in this subdivision with local exhaust ventilation in accordance with the requirements of subsection (1) of this section, or you must protect employees by air line respirators in accordance with the requirements of Part C of this chapter.
  - (i) Metals containing lead, other than as an impurity, or metals coated with leadbearing materials;
  - (ii) Cadmium-bearing or cadmium-coated base metals;
  - (iii) Metals coated with mercury-bearing metals;
  - (iv) Beryllium-containing base or filler metals. Because of its high toxicity, you must perform work involving beryllium with both local exhaust ventilation and air line respirators.
- (c) You must protect employees performing such operations in the open air by filter-type respirators in accordance with the requirements of Part C of this chapter, except that you must protect employees performing such operations on beryllium-containing base or filler metals by air line respirators in accordance with the requirements of Part C of this chapter.
- (d) You must protect other employees exposed to the same atmosphere as the welders or burners in the same manner as the welder or burner.

#### (4) Inert-gas metal-arc welding.

- (a) Since the inert-gas metal-arc welding process involves the production of ultra-violet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fuels and gases, you must not permit employees to engage in, or be exposed to the process until the following special precautions have been taken:
  - (i) You must keep the use of chlorinated solvents at least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents must be thoroughly dry before welding is permitted on such surfaces.

(ii) You must protect employees in the area not protected from the arc by screening by filter lenses meeting the requirements of Part C of this chapter. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type, meeting the requirements of Part C of this chapter you must wear under welding helmets. You must use hand shields to protect the welder against flashes and radiant energy when either the helmet is lifted or the shield is removed.

- (iii) You must suitably protect welders and other employees who are exposed to radiation so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields must be free of leaks and openings, and free of highly reflective surfaces.
- (iv) When inert-gas metal-arc welding is being performed on stainless steel, you must meet the requirements of subdivision (b) of subsection (3) of this section to protect against dangerous concentrations of nitrogen dioxide.

#### (5) General welding, cutting, and heating.

- (a) Welding, cutting, and heating, not involving conditions or materials described in subsections (2), (3), or (4) of this section, may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, you must provide suitable mechanical ventilation or respiratory protective equipment.
- (b) You must protect employees performing any type of welding, cutting, or heating by suitable eye protective equipment in accordance with the requirements of Part C of this chapter.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-415, filed 04/19/16, effective 05/20/16. Order 74-26, § 296-155-415, filed 5/7/74, effective 6/6/74.]

# WAC 296-155-420 Welding, cutting, and heating in way of preservative coatings.

- (1) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test must be made by a competent person to determine its flammability. You must consider preservative coatings to be highly flammable when scrapings burn with extreme rapidity.
- (2) You must take precautions to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, you must strip them from the area to be heated to prevent ignition.

#### (3) Protection against toxic preservative coatings:

- (a) In enclosed spaces, you must strip all surfaces covered with toxic preservatives of all toxic coatings for a distance of at least 4 inches from the area of heat application, or you must protect the employees by air line respirators, meeting the requirements of Part C of this chapter.
- (b) In the open air, you must protect employees by a respirator, in accordance with requirements of Part C of this chapter.

(4) You must remove the preservative coatings a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 16-09-085 (Order 15-08). § 296-155-420, filed 04/19/16, effective 05/20/16. Order 74-26, § 296-155-420, filed 5/7/74, effective 6/6/74.]