

Chapter 1

Equipment



Chapter 1 – Equipment

EQUIPMENT AND TOOLS

Overview

Without the appropriate equipment and tools, it would be impossible for firefighters to accomplish their assigned tasks. Equipment and tools must be located and placed in service without delay. Furthermore, they must be maintained clean and in good working order.

This section is intended to give the firefighter a cursory overview of the basic equipment and tools used by the Seattle Fire Department. While not providing detailed information on each piece of equipment or specific methods of placing it into operation, this section does contain limited information on specifications, uses, maintenance and safety, where applicable.

It is also the intent to assist new members recognize and understand the purpose of these fire service tools. Knowledge and proficiency of equipment and tools will be essential for success in recruit school and throughout their career.

Reducer Coupling

A Reducer is a coupling that reduces the size of male threads, so that female threads of a corresponding smaller size may be attached.



4" to 2 1/2" Reducer

Increaser Coupling

An Increaser is a coupling that increases the size of male threads, so that female threads of a corresponding larger size may be attached.



2 1/2" to 4" Increaser

NOTE: Couplings are always identified from the female side to the male side. Female refers to internal threads. Male refers to external threads

Double Female Coupling

A Double Female Coupling has female threads of equal size on both ends. It is used to connect two male ends.



2 1/2" Double Female

Double Male Coupling

A Double Male Coupling has male threads of equal size on both ends. It is used to connect two female ends.



2 1/2" Double Male

Cap

A Cap is a way to temporarily or permanently prevent the flow of water from the apparatus, hose or appliance. A Cap has female threads. It is intended to cap a male coupling or fitting.



2 1/2" Cap

Plug

A Plug is a way to temporarily or permanently prevent the flow of water from the apparatus, hose or appliance. A Plug has male threads. It is intended to plug a female coupling or fitting.



2 1/2" Plug

Sister Coupling

A Sister Coupling is similar to a Double Female. However, the female threads are of differing sizes to connect two unequal male ends.



2 1/2" to 4" Sister

Brother Coupling

A Brother Coupling is similar to a Double Male. However, the male threads are of differing sizes. It is used to connect two unequal female ends.



2 1/2" to 4" Brother

Storz Adaptor Coupling

A Storz Adaptor Coupling has male NST threads which connect to a “sexless” coupling that uses a quick connect fitting. It is used to couple SFD hose to hydrants or appliances of neighboring fire departments. To release coupled hose, the rocker buttons need to be depressed. They are used in several of our surrounding cities on mutual aid.

NOTE: The SFD does not routinely use Storz fittings.



Storz Connection side.



Rocker buttons shown.

Wye

A Wye is an appliance designed to branch a singular water source into two or more hose lines. It has a female threaded inlet and male threaded outlets. Wyes are equipped with quarter-turn-ball or gated valves to control the flow of water.



2 1/2" to 1 1/2" Wye

Siamese

A Siamese fitting is an appliance designed to connect two or more lines into one line or two lines into an engine or appliance. It has female threaded inlet swivels and a male threaded outlet. It is equipped with a clapper valve to prevent the backflow of water through the unused intakes.



2 1/2" to 2 1/2" Siamese

Tri-Gated Wye

The Tri-Gated Wye, also known as a “Manifold”, is an appliance used to deliver water to the incident. The Tri-Gated Wye is attached to the engine’s large diameter hose (LDH) and carried so that a “Manifold Reverse” lay may be easily implemented.

As with other wyes, the Tri-Gated Wye splits a singular source of water into multiple lines. A difference from all other wyes is that on the tri-gated wye there are male threads on both sides of the appliance. This is due to the way LDH hose is stored on SFD engines and the fact that LDH is used for both supply hose (between the hydrant and the engine) and hose to supply attack lines (between the engine and the nozzle).

It is carried on Engine Companies and has a 4” male inlet that branches off to three 2 ½” male threads. Each outlet has a separate gated valve.



Tri-Gated Wye

Hydrant Gate

A Hydrant Gate is a gated valve fitting that controls the flow of water from a 2 ½” hose port of a fire hydrant. It consists of a female inlet, a gate valve with a handle, and male outlet threads. It is typically kept with a 2 ½” to 4” Increaser attached to the male threads.



Hydrant Gate

Hose Clamp

The Hose Clamp is a device used to compress fire hose in order to shut off the flow of water while in operation. It can also be applied to an uncharged line to prevent flow.



Hose Clamp

NOTE: Always face the flow (source) of water when clamping. Face the direction of the flow (destination) when releasing the clamp.

Portable Ground Monitor

Specifications

- Ground mounted.
- Flow rates depend on nozzle size (see Smooth Bore Nozzles)

Uses

- Monitors are used to deliver powerful streams of water over long distances.

Maintenance

- Keep lubricated and check for loose tips.

Safety

- Ensure that the Monitor is footed or anchored to counteract the strong nozzle reaction.



Portable Ground Monitor

Smooth Bore Nozzle Tips

Specifications

- Nozzle pressure is 50 PSI at the tip for handlines:

SIZE	GPM
15/16"	180
1 1/8"	265

- for use on 1 3/4" handlines.

- for use on 2 1/2" handlines.

- Nozzle pressure is 80 PSI at the tip for monitors:

SIZE	GPM
1 3/8"	500
1 1/2"	600
1 3/4"	800
2"	1000
2 1/4"	1350
2 1/2"	1650

Uses

- Fire attack, when deeper penetration is needed.

Safety

- Ensure portable monitors are properly footed.
- Use care when operating smoothbore hand lines.



Left to Right: 15/16" tip, 1 1/8" tip
Stream Straightener,
Portable Monitor Tip Stack

Task Force Tip (TFT®) Midmatic Nozzle

Specifications

- Appropriate for 1 3/4" handlines only.
- Automatic Gallonage operation.
- 75 PSI required at the tip to operate properly.
- Integrated 15/16" smooth bore tip.
- Ball-type valve.
- 70 - 200 GPM
- Removable tip for extending the line (1 1/2" male threads).

Uses

- Fire attack – offensive
- Hydraulic Ventilation
- Exposure protection - defensive
- Washdowns
- Overhaul

Maintenance

- Lubricate moving parts with "Break Free" (available through the Services Division).
- Do not use WD-40.
- Can be flushed, inspected. Rubber bumper kept in forward position.

Safety

- Open slowly to prevent a water surge or water hammer.



TFT® Midmatic Nozzle

Task Force Tip (TFT®) Handline Nozzle

Specifications

- Appropriate for 1 ¾" or 2 ½" handlines.
- Automatic Gallonage operation.
- 100 PSI required at the tip to operate properly.
- Ball-type valve
- 50 - 350 GPM
- Removable tip for extending the line (1 ½" male threads).

Uses

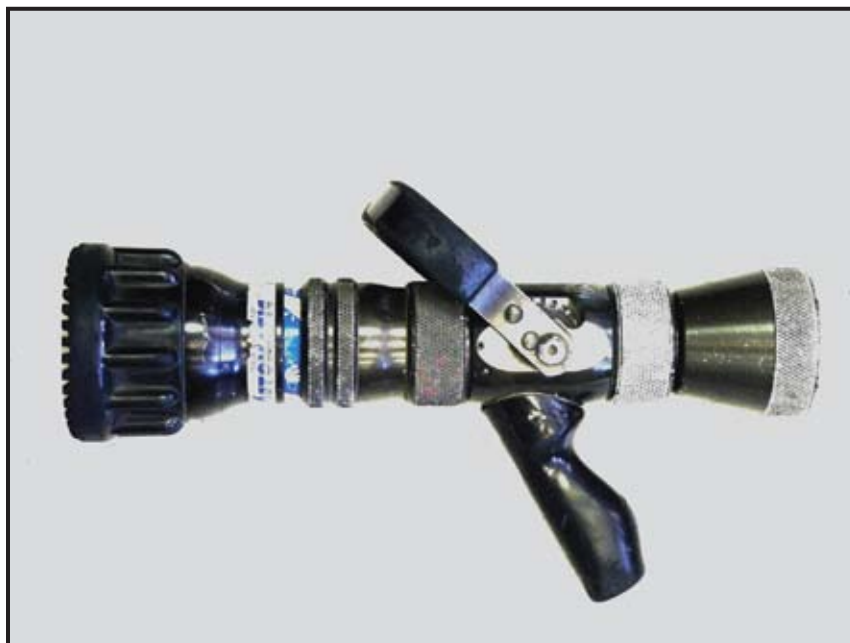
- Fire attack – offensive
- Hydraulic Ventilation
- Exposure protection - defensive
- Washdowns
- Overhaul

Maintenance

- Lubricate moving parts with "Break Free" (available through the Services Division) .
- Do not use WD-40.
- Can be flushed, inspected. Rubber bumper kept in forward position.

Safety

- Open slowly to prevent a water surge or water hammer.



TFT® Handline Nozzle

Elkhart® Chief Nozzle

Specifications

- Fixed Gallonage
- Appropriate for 1 3/4" handlines.
- 75 PSI required at the tip to operate properly.
- Ball type valve
- 150 GPM
- Removable tip for extending the line (1 1/2" male threads).

Uses

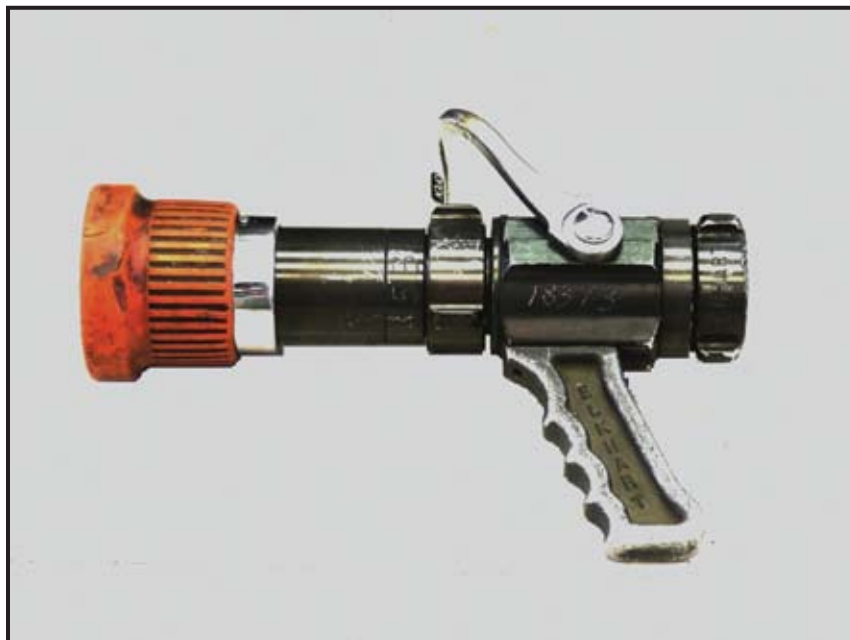
- Fire attack-offensive
- Hydraulic Ventilation
- Exposure protection-defensive
- Wash downs
- Overhaul

Maintenance

- Lubricate moving parts with "Break Free" available through the Services Division.
- Do not use WD-40.

Safety

- Open slowly to prevent a water surge or water hammer.



Elkhart® Chief Nozzle

Distributor Nozzle

The Distributor Nozzle, otherwise known as a "Bulldozer" or "Bresnan" Distributor, is designed to throw a heavy spray of water over an area 30 feet in diameter. It is placed in operation by lowering through an opening in a floor, decking, or roof, to the involved space below.

Specifications

- Rotating head
- 260 GPM at 100 PSI
- Weighs 3-1/2 pounds
- 2-1/2" female swivel inlet

Uses

- Shipfires
- Basement fires

Maintenance

- Lubricate moving parts

Safety

- The nozzle does not have a shutoff. Ensure one is placed along the supply line or a hose clamp is available.



Distributor Nozzle

Fog Applicator

Specifications

- Sizes: varying from 48 to 112 inches long.

Uses

- Fire extinguishment, when a small amount of water is indicated.
- Small space fires, attic, wall, etc.

Safety

- Must be used with a nozzle shut off.



Fog Applicator

Foam Eductor and Low Expansion Foam Nozzle

Class “B” Firefighting foam is an effective tool in the extinguishment of flammable liquid fires. Class “B” Finished Foam may be delivered via the Foam Eductor (Proportioner) and the Low Expansion Foam Nozzle. These tools are standard equipment on Engine Companies.

Specifications

- LOW EXPANSION FOAM NOZZLE
 - 120 GPM required to function properly.
 - 20 to 1 expansion ratio
 - Must be used with a shut off or hose clamp.

- FOAM EDUCTOR
 - 175 psi. inlet pressure required to the eductor.
 - 120 GPM water flow required for venturi effect to draw foam concentrate into the pick-up tube.
 - Nozzle should be matched to eductor (120 GPM minimum flow).
 - Used for foam solutions of 1% to 6% concentration.
 - Pickup tube no longer than 5 feet.

Uses

- A foam blanket suppresses vapors rising from flammable liquid spills.

Maintenance

- Flush with clean water after use

Safety

- Caution: Foam provides very little thermal protection.



Low Expansion Foam Nozzle (top),
120 GPM Foam Eductor (bottom)

Bolt Cutters

Uses

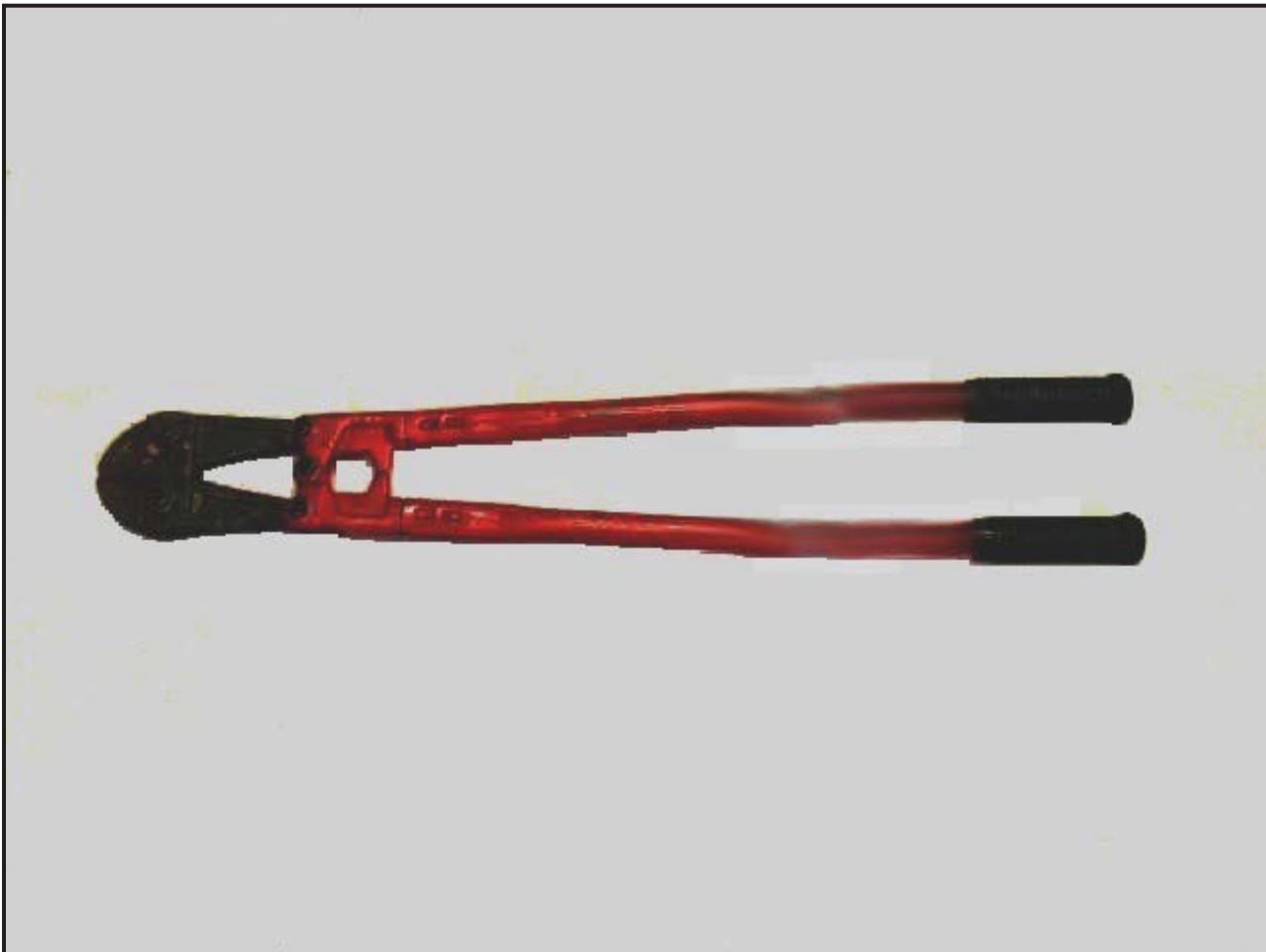
- Forcible entry

Maintenance

- Wipe clean
- Keep cutter gaps tight by using adjustment screws

Safety

- Use proper safety gear (gloves and eye protection)



Bolt Cutter

Pike Pole

The Pike Pole has a head that is designed with a point and a hook. The point allows the pole to penetrate materials and the hook allows them to be pulled or moved.

Specifications

- Sizes range from 4 feet to 16 feet.
- Fiberglass handles (straight and “D” styles).
- Steel head

Uses

- Pulling ceilings
- Overhaul
- Ventilation
- Water rescue (reaching tool)

Maintenance

- Keep handles free of paint. Heads may be painted to prevent rust.

Safety

- Wear proper safety gear (full PPE).
- Be alert to large sections of ceiling falling while being pulled.



D-Handle and Straight Handle Pike Poles

Spanner Wrench

The Spanner is a straight, forged or folding-type wrench device used for tightening/loosening couplings, appliances or hydrant port caps. It can be used by itself or tandem in opposing movement.

Straight, forged spanners are located on all engines and folding-type are issued to each Firefighter. They are made from plastic or aluminum.



Spanner Wrenches

OCD Wrench

An OCD (Office of Civil Defense) Wrench is a tool designed to open or close the main stem of fire hydrant or to remove and replace the hose port caps.

The wrench adjusts to varying nut sizes by screwing the handle in or out. It is normally carried in the hydrant bag and can be particularly useful for worn down nuts that will not allow the normal use of a galvin and/or corey. It may also be used when a galvin wrench will not make a complete turn due to obstacles.



OCD Wrench

Hydrant Wrench Set



Hydrant Wrench Set

Corey Wrench (bottom left)

The Corey Wrench is used to remove and replace the fire hydrant caps. It can also be used to open a hydrant's main stem if there is an obstruction that will not allow the Galvin wrench to spin completely. There is less available mechanical advantage with this shorter wrench, however. The five-sided hole in the wrench corresponds with the shape of the cap nut.

Galvin Wrench (bottom right)

The Galvin Wrench is designed to be used to open or close the main stem of a fire hydrant. The long handles provide leverage so that water may flow quickly. The five-sided hole in the middle of the wrench corresponds with the shape of the hydrant main stem nut. The box end may be used, in conjunction with the Corey Wrench, to open or close the "foot valve" of a hydrant.



Corey Wrench



Galvin Wrench

Bars

Bars are designed to be carried and used by a single firefighter. However, some require a second operator equipped with a striking tool to accomplish the task. Truck companies have a wide assortment of bars.

Specifications

- Constructed of steel
- Various lengths, weights and configurations.

Uses

- Forcible entry, heavy rescue
- Prying, breaking, ramming, clawing, pulling, moving and lifting.

Maintenance

- Clean and inspect after use. Use a file to remove nicks.
- Can be painted or left bare with light coat of oil.

Safety

- Wear proper safety gear (helmet, gloves, eye and boots)
- Choose the appropriate tool for the job. Allow the mechanical advantage of the tool do the work, not brute strength.



Left to Right: Heavy Duty Bar, Medium Duty Bar, Burke Bar, Light Duty Bar, Extrication Bar, Lock Breaker, Trumpet Bar, Haligan, Wrecking Bar

Axes

The Axe is a fundamental tool of a firefighter. Although the uses of an axe are varied, it is primarily used for forcible entry and ventilation. Scabbard axes are intended for personal carry on the waist. The flathead axe may be used as a striking tool. The pickhead axe may be used for ripping, digging, and piercing.

Specifications

- Forged steel, heat treated heads
- Heavy duty axes are 36 inches and weigh 8 pounds.
- Service axes are shorter (typically 28 inches) and weigh 6 pounds.
- Handle length is 27 - 36 inches long, wood or fiberglass.
- Fiberglass is 50 times stronger than wood and does not rot.

Uses

- Forcible entry and ventilation
- Search and rescue, windshield removal

Maintenance

- Clean and inspect after use. Use steel wool and oil on head
- Wood handles are lightly sanded and oiled. No paint or varnish.
- Small nicks may be removed with a file.
- Avoid painting to aid in maintenance and inspection.

Safety

- Wear proper safety gear (full bunkers, eye protection).
- Allow for the arc of the swing. Avoid "round house" swings.



Top to bottom: HD Flat Head axe, HD Pick Head axe, Service axe,
Service axe in belt scabbard

Roof Hook

Originally designed for overhauling dumpster fires, the Roof Hook has become a favorite rooftop ventilation tool. The manufacturer's original name of the product was "Rubbish Hook". They now recognize that the majority of the tools use in the fire service is on the rooftop and has changed their original name of the product to reflect that fact. They now call this hook the "Roof Hook."

When the tool is turned with the hooks facing up, the head makes solid contact with roofing materials, allowing vent crews to hear and feel roof support members. The Roof Hook can also be used to pull back roofing materials, break ceramic roof tiles, and to "louver" the vent cuts.

Specifications

- 6 feet long
- Fiberglass shaft with "D" handle
- Two pronged steel hooks

Uses

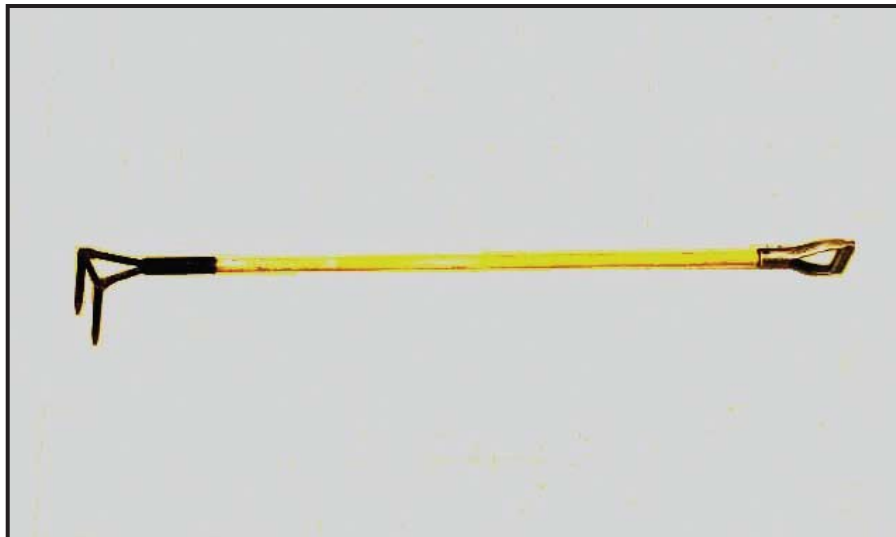
- Roof sounding and ventilation
- Overhaul, pulling ceilings where large areas need to be opened.

Maintenance

- Heads may be painted but keep handles free of paint.

Safety

- Wear proper safety gear (full protective clothing).
- Be alert - large sections may fall when pulling ceilings.



Roof Hook

Salvage and Overhaul Tools

Salvage and overhaul tools are essential for post-fire operations. They are often common household tools such as shovels, rakes and hoes.

A specialty tool includes the wall scraper (middle in below photo). Truck Companies carry an extensive complement of tools. Engine Companies are equipped with a more limited supply of tools.

Specifications

- Shovels include scoop, folding, square, roof and round point.
- Wood or fiberglass shafts
- Aluminum or steel heads

Uses

- Digging, trenching, scraping, salvage and overhaul

Maintenance

- Inspect heads for loose handles.
- Heads should be painted or oiled to prevent rust.

Safety

- Wear appropriate safety gear.



Top to bottom: square shovel, wall scraper, garden rake

Portable Electrical Generator

Specifications

- 5 HP Honda engine
- Uses unleaded fuel (white stripe)
- 120 volts, 19.2 amp AC
- 12 volts, 8.3 amp DC
- 112 pounds

Uses

- Portable source of electricity.
- Power for operating lights, power tools, submersible pumps, etc.

Maintenance

- Keep unit clean.
- Refuel after use and store in ready condition.
- Send to Services for engine repair and servicing.

Safety

- Use proper lifting and carrying techniques.
- Use a circuit tester and GFCI, in accordance with SFD Dispatch # 12-08.



Generator

NOTE: Use caution when operating in an enclosed area. Carbon Monoxide contained in the exhaust fumes may reach dangerous levels. Also, use cautiously in wet conditions. Rain/snow and/or wet hands may present an electrical hazard.

Positive Pressure Ventilation (PPV) Fan

The Positive Pressure Ventilation Fan is an efficient mechanical method of removing heat, smoke and fire gases. If used properly, it dramatically enhances the fire operation, and the safety of Firefighters and occupants.

Specifications

- 5 to 6 HP depending on model
- Multiple blades delivering approximately 15,000 CFM.
- Direct drive, 4 cycle using unleaded (white stripe) fuel.
- Adjustable tilt.

Uses

- Positive pressure ventilation of structural spaces.

Maintenance

- Refuel after each use.
- Keep unit clean and store in ready condition.
- Send to Services for engine work.

Safety

- Use proper lifting and carrying techniques.



PPV Fan

NOTE: Use caution when operating in an enclosed area. Carbon Monoxide contained in the exhaust fumes may reach dangerous levels.

Chainsaw

The chainsaw is considered the best saw for ventilation. Unlike the Rotary Saw, the chainsaw can be used to “feel” the structural members beneath the roofing materials. Even though the cutting speed is great, the operator can safely work without unnecessary damage to the rafters and/or joists. The chainsaws light weight also makes it easy to work from ladders and in places where heavier saws would not be safe.

Specifications

- 2 stroke, single cylinder uses mixed fuel (yellow striped can).
- Approximately 15 pounds.
- Automatic and manual chain brake.
- 20 inch bar

Uses

- Ventilation
- Heavy Rescue
- Structural protection by removing brush during urban interface

Maintenance

- Refuel and check oil after each use.
- Thoroughly clean after each use.
- Adjust chain tension.
- Replace chain if 3 (or more) teeth are damaged or missing.
- Send to Services for engine work.

Safety

- Wear proper safety gear (full PPE).
- Use only enough bar as needed. (Do not over plunge bar during use.)
- Be aware of other operations around you.



Chainsaw

Rotary Saw (Rescue Saw)

The rotary saw is a power saw that is carried on Seattle Fire Department truck companies. It has three different blades that allow it to be used for a variety of objectives. The metal-cutting blade may be used for forcible entry or other metal cutting. The masonry-cutting blade is ideal for stucco, brick or concrete block. The wood-cutting blade may be used for ventilation as a backup for the chain saw. The Rotary Saw is very effective on hardwood flooring.

Specifications

- 2 stroke engine uses mixed fuel (yellow striped can)
- 24 pounds
- Belt driven
- Adjustable blade guard

Uses

- Forcible entry, heavy rescue, ventilation.

Maintenance

- Refuel after each use.
- Adjust belt tension.
- Replace blade if smaller than 9 inches.
- Forward to Services for engine work.

Safety

- Wear proper safety gear (full PPE).
- If cutting near flammable liquids, a hoseline and dry chemical extinguisher is required. It is common for the saw to produce sparks while in operation.



Rotary Saw

Reciprocating Saw

The reciprocating saw is a portable saw that is carried on all Seattle Fire Department truck companies and some engine companies. The SFD carries both corded and cordless models. Reciprocating saws are quite mobile and easy to use. This saw has proven to be an excellent auto extrication tool. It can be operated simultaneously with the hydraulic rescue tools. It is often able to cut some portions of the auto easier and more quickly than the hydraulic cutters.

Specifications

- Reciprocating blade
- Some are battery operated
- Some require an electrical power source.

Uses

- Auto extrication
- Heavy rescue
- Forcible entry

Maintenance

- Keep unit clean.
- Replace the blades as needed.
- Store saw in ready condition.

Safety

- Wear proper safety gear (gloves, eye protection, and boots).
- Blade continues to move after trigger is released.
- If cutting near flammable liquids, ensure a charged handline and dry chemical extinguisher is readily available.



Reciprocating Saw

Circular Saw

The circular saw is a portable saw carried on Truck Companies. It requires a power source, but is mobile and easy to use. It is designed to cut or rip wood materials.

Specifications

- Requires electrical power.

Uses

- Construction—boarding up buildings
- Shoring

Maintenance

- Keep unit clean.
- Replace blade as needed.
- Store in ready condition.

Safety

- Wear proper safety gear (gloves, eye protection, and boots).
- Blade continues to rotate after trigger is released.



Circular Saw

Rope Rescue Equipment

Truck Companies carry an array of Rope Rescue Equipment designed to assist in the rescue of persons trapped in low or high angle situations. When properly applied, the gear will provide a safe and efficient mechanical advantage to evacuate the victim to safety.

Specifications

- Materials include nylon webbing, kernmantle rope, steel and aluminum

Uses

- Low and high angle rescue, cave - in

Maintenance

- Clean and inspect after each use.
- Rescue rope must be replaced after use in actual rescue incident.

Safety

- Wear appropriate safety gear.
-



(See next page for item identification)

Specific Rope Rescue Equipment

- A. **Class 3 Harness** – worn by the firefighter in rescue applications.
- B. **12 mm Rescue Rope** – low-stretch braided kernmantle rope used for main, belay, and accessory lines in rope rescue applications.
- C. **Locking Steel Carabiner** – used to connect components in rope systems.
- D. **Prussik-Minding Pulley** – used in rope systems to create directional changes and mechanical advantages.
- E. **1” Tubular Nylon Webbing**, various lengths - used to create anchors for rope systems.
 - Green – 5’
 - Blue – 10’
 - Yellow – 15’
 - Orange – 20’
 - Purple – 25’
- F. **Brake Rack** – frictioning device used in lowering systems.
- G. **Pickoff Strap** – nylon strap with adjustable buckle used for patient attachment in rope rescue systems.
- H. **Patient Harness** – quick harness for creating positive attachment to patient in rope rescue systems.
- I. **Load Releasing Hitch** – the LRH is tied using a 30’ 8mm cord and two locking steel carabiners. It allows the user to extend a loaded rope system under control.
- J. **Anchor Strap** – Nylon strap with 2 “D” rings used to create anchors for rope systems.
- K. **Long Prussik Sling** – 8mm cord tied into a sling with a double fisherman’s bend. The prussik sling is tied into a prussik hitch around a larger diameter line in order to grab hold of the larger line. It can be used to build a tandem prussik belay system, to attach a pulley to a line, or as a progress capturing device.
- L. **Short Prussik Sling** – see K
- M. **Petzel 540** – Mechanical belay device, used as an alternative to the Tandem Prussik Belay system.

Portable Air Monitor

The portable air monitor is a gas monitor that allows the user to continuously monitor 4 atmospheric conditions:

- Carbon Monoxide (CO)
- Oxygen (O₂)
- Hydrogen Sulfide (H₂S)
- Lower Explosive Limit (LEL) – of combustible gasses

Specifications

- Approximately 30 ounces.
- Rechargeable batteries.
- Replaceable sensors and filters.

Uses

- Confined space rescue, overhaul atmospheric concerns, carbon monoxide alarms, cave-in rescue, flammable liquids, etc.

Maintenance

- Perform daily checks.
- Change filters as necessary (one in unit, one in wand sensor).
- Use respiratory protection until atmosphere proven safe.



Air Monitor

Holmatro Hydraulic Power Unit (DPU 30)

Specifications

- Weight: 58 lbs.
- Honda GX100 3HP 4 stroke engine.
- Two Stage Pump with dual power outlets.

Uses

- Powers hydraulic rescue tools.

Maintenance

- Clean and refuel after use.
- Inspect hoses and couplings after use.
- Check engine oil and hydraulic fluid.

Safety

- Use proper lifting and carrying technique.
- Use appropriate safety gear to include eye protection.
- Spilled or mishandled hydraulic fluid may create a slip hazard.



(Holmatro Power Unit)

Holmatro Rescue Tools

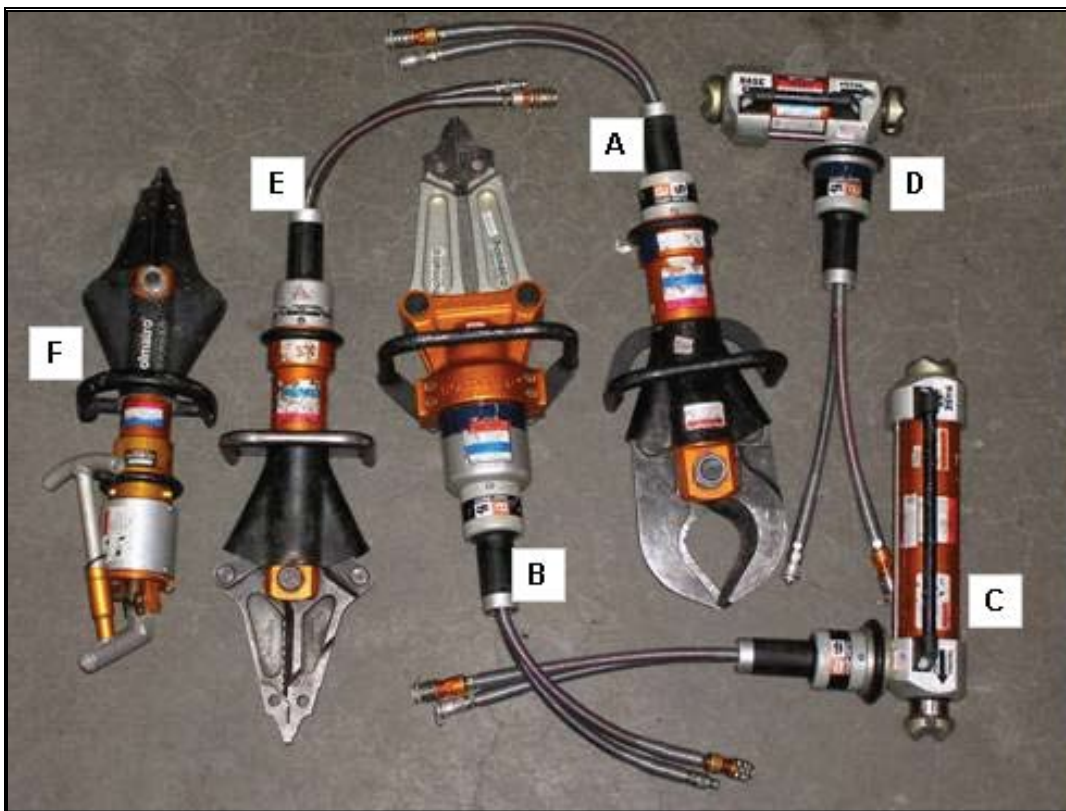
These tools are hydraulically driven tools that are used for heavy rescue and auto extrication. They are designed to lift, spread, push, pull, hold, and cut. The Holmatro Double Power Unit (DPU30) supplies the power. The DPU30 and Rescue Tools are standard equipment on all Truck Companies.

Maintenance

- Keep Tool and Quick Connects clean.
- Use torque wrench set at 75 ft-lb. to tighten the jaws on the Cutter and the "Combi" tool after every use.

Safety

- Wear proper safety gear (full protective clothing) and eye protection.



(See next page for tool identification)

Tool Specifications

A. CUTTER

- Weight: 42.5 lbs.
- Maximum Cutting Force: 55,100 lbs.

B. SPREADER

- Weight: 42.5 lbs.
- Maximum Spreading force: 19,595 lbs.
- Maximum Pulling force: 11,200 lbs.
- Maximum Spreading Travel: 27 ¼"

C. TELESCOPIC RAM

- Weight: 40 lbs
- Maximum Length Extended: 50 ¼"
- Max. Spread Force 1st Section: 49,145 lbs.
- Max. Spread Force 2nd Section: 18,210 lbs.

D. TELESCOPIC MINI RAM

- Weight: 27 lbs
- Maximum Length Extended: 23"
- Max. Spread Force 1st Section: 49,145 lbs.
- Max. Spread Force 2nd Section: 18,210 lbs.

E. COMBINATION TOOL

- Weight: 35 lbs.
- Max. Cutting Force: 28,300 lbs (center of blade)
- Maximum Spreading Force: 16,166 lbs.
- Maximum Pulling Force: 14,358 lbs.
- Maximum Spreading Travel: 14 ¼"

F. HAND OPERATED COMBINATION TOOL

- Weight: 23 lbs.
- Max. Cutting Force: 18,660 lbs. (center of blade)
- Maximum Spreading Force: 11,690 lbs.
- Maximum Pulling Force: 6,590 lbs.
- Maximum Spreading Travel: 10 ½"

Portable Fire Extinguishers

Specifications

- Varying, depending on size and type.

Maintenance

- Inspect for damage.
- Check gauge for adequate pressure
- Tag and send to Services after use.
- Ensure lever locking pin is in place.

Safety

- Choose the proper type of extinguisher for the fuel to be extinguished.



Extinguishers - Left to Right: Dry Chemical,
Pressurized Water, CO₂

TYPE	DRY CHEM	PRESSURIZED H ₂ O	CO ₂
RATING	10 BC 2A 10BC 20A 120BC	2A	10BC
AGENT	SODIUM BICARB AMMONIUM BICARB AMMONIUM PHOSPHATE	WATER	CO ₂
PROPELLENT	NITROGEN	AIR	SELF
WEIGHT	4 LBS 9 LBS 38 LBS	28 LBS	34 LBS

Water Vacuum (Water Vac)

The water vac is an indispensable tool for the removal of water during salvage operations. Water vacuums are only carried on truck companies; it is designed to be worn on a firefighter's back and requires an electrical power source. It is best used on bare or carpeted floors. If the water is deeper than the head of the wand, a prosser pump may be required prior to the beginning of water vac use.

Specifications

- Tank capacity: 6 gallons
- Weight full: 73 pounds
- 50 foot power cord

Uses

- Salvage

Maintenance

- Wipe down unit after use.
- Empty tank completely before storage

Safety

- Use a circuit tester and GFCI, in accordance with SFD Dispatch # 12-08.



Water Vac and Wand

Prosser Pump

The prosser pump is an ideal tool for the removal of water when water depth is 2" or deeper. The pump has 1 ½" male threads so that a section of hose may be attached to evacuate the water from the occupancy.

Specifications

- Max. effective lift of a single pump is 37 ft (74 feet in tandem).
- 120 Max. GPM, at 0 feet elevation (130 GPM, at 0 feet, in tandem)
- 25 foot electrical cord and 35 foot handling cord.
- Strainer to keep debris out.

Uses

- Dewatering

Maintenance

- Wipe down unit after use.
- Inspect power cord for damage.
- Ensure that rope is secured to the pump.

Safety

- Pump heats up during use. Allow to cool before handling.
- Use a circuit tester and GFCI, in accordance with SFD Dispatch # 12-08.
- Power off before handling.



Prosser Pump

Thermal Imager Camera (TIC)

The Thermal Imager Camera (TIC) represents a huge leap in firefighting technology. It is a tool, similar to a camera that allows the Firefighter to “see” through smoke. Using thermographic technology, the TIC detects thermal (infrared) radiation from fire and trapped victims. In addition to smoke, the TIC will recognize a significant heat signature through sheet rock, lathe and plaster, and acoustic ceiling tile. It is standard equipment on Truck Companies and Battalion Chiefs’ vehicles and select engine companies.

Specifications (many TIC variations are currently in use)

- Water resistant
- Rechargeable batteries
- Weights and sizes vary.

Uses

- Search and rescue
- Detecting hidden fire in walls, ceilings, etc.
- Detecting other heat signatures.

Maintenance

- Inspect and clean after use.
- Rotate battery as directed.



Thermal Imager