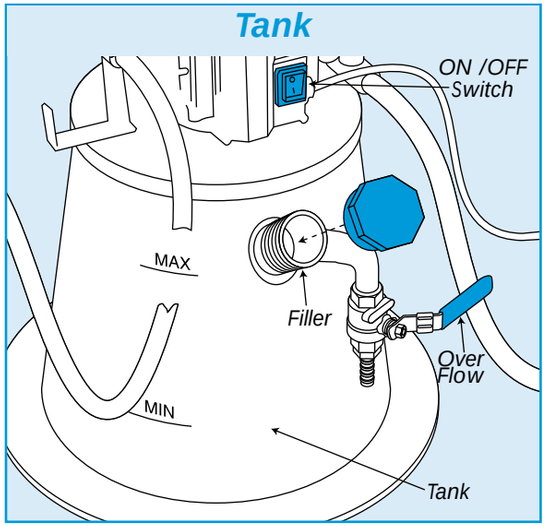
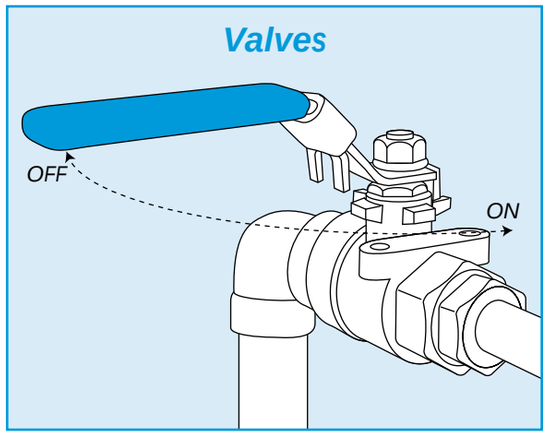
BASIC TECHNIQUES



Fill the unit with the appropriate amount of flushing chemical** and **top up with fresh clean water** to **approximately 150mm below the maximum** liquid **level.



Open both flow valves** and **switch the pump ON. Make sure that the liquid level in the tank remains above the minimum mark as more water may need to be added.

If** the unit is **being connected to the boiler flow and return,** with the boiler disconnected, **the system can be filled via the unit.** If this is the case, the **radiators must be bled to remove any air.

Close off all the radiator valves except those on the nearest radiator to the diverter/zone valve.

***Allow the unit to pump through this radiator** (the first radiator on the system) **for approximately 5 minutes, reversing the flow regularly** and tapping with a rubber hammer to dislodge any debris.*

Repeat the procedure on each individual radiator,** then **allow the pump to run for ten minutes, reversing the direction of flow regularly.

***Set the pumps direction of flow, with the control switch pointing towards the fill valve. Close the flow valve that has the dump valve connected to it.** To close the valve turn the lever 90 to the direction of flow.*

You can now open the dump valve.

The system water will** then **be pumped into the waste.

***As the level of water in the tank starts to drop, turn the mains water supply on and regulate the flow so that the level in the tank remains the same.** Make sure that the water level in the tank remains above the minimum mark at all times.*

Allow the water to run until the water running to the waste is clean and clear.

***Close both the dump and water supply valves and restore circulation through the unit by opening the flow valve.** Check that the level in the tank is still above the minimum level and bleed any air from the system as necessary.*

Close the mains water supply and isolate the unit from the heating system and switch the pump OFF.

***Clean out the heating systems header tank** and remove any sludge or deposits.*

***Restore the system to its original state,** removing any temporary valves, caps or connections. Set zone/diverter valves to auto.*

***Add inhibitor to the system** and fill to correct specification and remove any air present.*

EQUIPMENT CARE

***Never push the equipment beyond its design limits.** If it will not do what you want with reasonable ease and speed, assume you have the wrong tool for the job. Contact your local HSS Hire Shop for advice.*

***Keep the equipment clean** - you will find this less of a chore if you clean it regularly, rather than wait until the end of the hire period.*

*When not in use**, store the equipment somewhere clean, dry and safe** from thieves. Protect this equipment from frost and freezing conditions.*

FINISHING OFF

Disconnect the unit from the heating system, the main water supply and the power supply.

Flush the tank and give the unit a final clean up ready for return, to your local HSS Hire Shop.

...any comments?

If you have any suggestions to enable us to improve the information within this guide please fax your comments or write to the Product Manager at the address below

Fax: 020 8687 5001

Group Office: 25 Willow Lane, Mitcham, Surrey CR4 4TS

Web Site: http://www.hss.co.uk

Operating & Safety Guide 956

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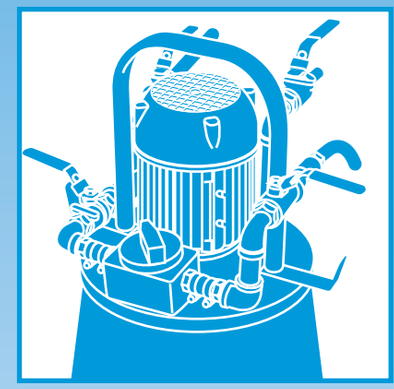
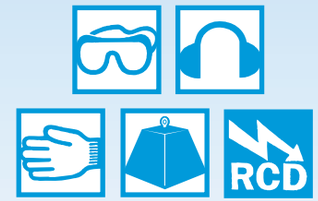
HSS Hire Shops



Central Heating Flusher

The professional way to flush a central heating system. For the removal of sediment and water born rust particles.



Code 51610

GENERAL SAFETY

For advice** on the safety and suitability of this equipment **contact your local HSS Hire Shop.

There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.

The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.

This equipment should only be used by an operator who has been deemed competent to do so by his/her employer.

***This equipment should be used by an able bodied, competent adult** who has read and understood these instructions. Anyone with either a temporary or permanent disability, should seek expert advice before using it.*

Keep children, animals and bystanders away from the work area. Cordon off a NO GO area using cones and either barriers or tape, available for hire from your local HSS Hire Shop.

Never use this equipment if you are ill, feeling tired, or under the influence of alcohol or drugs.

Safety goggles MUST be worn by everyone in the work area.

***Wear practical, protective clothing, gloves and footwear.** Avoid loose garments and jewellery that could catch in moving parts, tie back long hair.*

When full, this equipment is heavy, never attempt to lift it.

Take all necessary precautions to protect yourself and others against the possibility of contracting infectious diseases in your work environment.

Always switch OFF the equipment when not in use.

***Ensure the work area is well lit and ventilated,** if in doubt, ask about lighting and ventilation equipment at your local HSS Hire Shop.*

***Make sure you know how to switch this machine OFF before you switch it ON** in case you get into difficulty.*

Always disconnect the machine from its power supply before making adjustments to it.

***Check the condition of the equipment before use.** If it shows signs of damage or excessive wear, return it to your local HSS Hire Shop.*

COSHH information sheets are available from your local HSS Hire Shop.

ELECTRICAL SAFETY

The HSS Central Heating Flusher plugs into a standard 240V 13amp power socket.

***If the equipment fails, or if its power supply cable or plug becomes damaged, return it.** Never try to repair it yourself.*

***Keep cables out of harm's way,** and clear of the work area.*

***Extension leads should be fully unwound and loosely coiled, away from the equipment.** Never run them through water, over sharp edges or where they could trip someone.*

Keep the equipment dry, using electrical equipment in very damp or wet conditions can be dangerous.

***To reduce the risk of electric shock, always use a suitable RCD** (Residual Current-Operated Device) available from your local HSS Hire Shop. Or power the equipment from a mains circuit with a built in RCD.*

Ensure the machine and power socket are switched OFF before plugging into the power supply.

GETTING STARTED

These instructions have been written to help the user set up and operate the equipment. It is presumed that the user is both experienced and qualified to work on a heating system.

This unit should only be manoeuvred when empty.

***The unit is designed to work at a maximum water temperature of 80 degrees centigrade.** If the system water is above this, add cold water to the tank before operating.*

***Primatic Cylinders need to be disconnected before flushing,** as the pressure created by the unit can blow the air bubble in the cylinder.*

***The flow rate through a pipe varies depending on its diameter.** Micro bore piping reduces flow rates significantly and so system flushes may not be as successful as on a larger bore system.*

To flush very large systems, it is recommended that the system be divided into smaller sections.

Turn off all the downstairs radiators** totally and **work on the upstairs radiators, once flushed work on the downstairs part of the system.

***With double entry radiator valves the insert tube must be connected prior to flushing,** otherwise the radiator will not flush at the far end.*

Do not flush Galvanised Steel, as this type of pipework is prone to leakage.

***Single Pipe Systems can be flushed, but the result will not be as effective as a two-pipe system.** A double dose of chemical will also help.*

Inspect the heating system and make a note of the position of any cold spots.

Have a qualified electrician isolate the entire system from the main power supply and attach a tested temporary earth continuity bond.

Fully open all radiator valves** (wheel head and lockshield) **and check that any TRV** (thermostatic radiator valves) **are either set to maximum or bypassed.

Set any diverter or zone valves into the manual position.

All anti-gravity valves must be bridged, by-passed or temporarily removed.

The cold supply and expansion pipes** located at the header tank **need to be** either **capped off or joined together.

If the system is fed by a primatic cylinder, the flow and return to the cylinder must be either capped or temporarily joined together.

***Set the unit up close to a fresh main water supply and a suitable waste outlet.** A bathroom or kitchen are the best if available.*

Position the unit on a surface that will not be damaged by water spillages, as a precaution, stand the unit on a waterproof sheet.

Decide where to connect the unit to the system.

***Connection can be across the flow and return pipes** at the boiler, once the boiler has been isolated.*

***Across the pump connections,** once the pump has been removed, **or across the radiator valves,** after disconnecting an appropriate radiator.*

Alternatively you can cut out a section of pipe.

***Check that the isolating valves for cold feed, flow, return and waste are in the closed position.** That is with the control handle at 90 degrees to the direction of flow (see illustration).*

***Connect the various pipes to their correct connections on the unit,** using the correct fitting to ensure no water leaks.*

The flow and return pipes of the heating system should be connected to the unit's two flow pipes.

Connect the fill valve to a fresh water supply. Place the overflow and dump pipes in to a suitable drainage point.

All that remains is to plug the unit into the power supply via an RCD and to switch the supply ON.

Central Heating Flusher