

**SUMMARY**

The WP1 Dosing Unit utilises advanced electronic technology. It is able to provide precision chemical charging and is ideally suited to large industrial tray or rack washers.

The unit is manufactured in a strong GRPP enclosure with external mountings and may be installed in wet areas.

The unit will be programmed by the Holchem consultant on commissioning and will be adjusted as is necessary. To prevent unauthorised tampering a security code is needed to enter the programming mode.



To draw neat detergent from a 25 litre keg or 200 litre drum a standard spear can be used. Alternatively a spear with low level sensor (as shown) connected electrically to the WP1 will alarm on low level in the chemical container.



The WP1 can then be used to control a visible or audible alarm unit (not supplied) or to stop the washer.

Please study this information sheet to gain the most benefit from your equipment.

**Note:** Water Authority regulations state that no chemical dilution equipment may be connected directly to the mains supply. A break in the supply using a type "A" air gap is required i.e. the chemical must not be dosed into a mains water line.

Holchem guarantee the unit for 12 months from the date of delivery. The guarantee covers material defects, manufacturing defects or incorrect assembly. The guarantee does not cover wear and tear, misuse, use of incompatible chemicals, damage caused by frost or incorrect water supply.

**SPECIFICATION**

**WP1 - DOSING UNIT**

<b>Holchem Code</b>	SKS 03404
Pump Head Flow Rate	Approx. 1 litre/min (800mL/min)
Operating Pressure	Maximum 1 bar (15 psi)
Supply Voltage - Main Feed	90 to 265 VAC
Supply Current - Main Feed	Maximum 500 mA
Height	280mm
Width	315mm
Depth	143mm
Weight	4 Kg
Materials of Construction (chemical side)	GFPP Silicone Rubber Peristaltic Tubing. Other materials available to suit chemical.

**WP1 - DOSING UNIT - INSTALLATION KIT (STANDARD SPEAR)**

<b>Holchem Code</b>	SKS 03404/01
Chemical Spear	Suitable for 25 litre or 200 litre containers
Wash Tank Connection	Bulkhead Fitting requiring 22 mm dia. hole in tank.
Interconnecting Hose and Jubilee	10 metres of 10mm ID reinforced PVC tubing
Clips	4 x Jubilee Clips
Materials of Construction (chemical side)	Polypropylene Hosebarb Connector PVC Tubing & PVCu Bulkhead Fitting



**PRINCIPLE OF OPERATION**

The WP1 Dosing Unit doses neat chemical into a wash tank. The unit automatically doses the chemical to ensure the strength of the working solution remains constant.

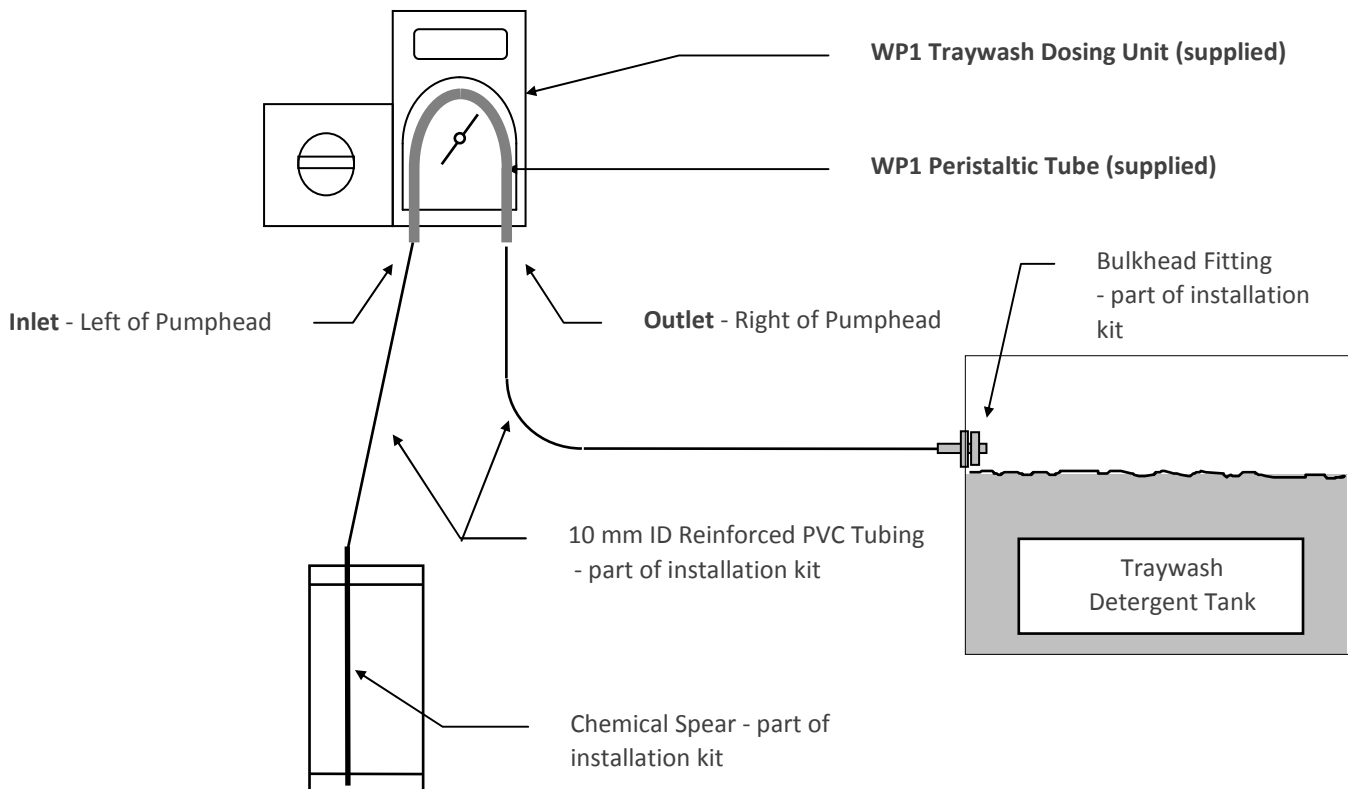
The unit has two dosing cycles; namely:

- Initial Charge - an adjustable timed dose. This is added when the unit is powered up and designed to make-up the initial tank of water to the correct working strength.
- Routine Dose - a cyclic dose that maintains the strength in the tank by routinely adding a set (but adjustable) dose into the tank to make up losses. This routine dose is only added when the traywasher is running.

The dosing times are adjustable.

**SAFETY**

1. The equipment should not be used prior to proper installation and commissioning.
2. The equipment should only be used by personnel trained in its use and in the use of the chemicals being dispensed.
3. Operators must wear suitable personal protective equipment for the chemical being dispensed.
4. Chemicals must never be mixed either prior to or after dilution.
5. The unit must be made safe prior to any maintenance:
  - a. Flush chemical out of equipment by placing chemical pick-up tube in clean water and running the unit.
  - b. If unit has failed and the chemical cannot be flushed then suitable personal protective equipment must be worn for disassembly.



**SERVICES REQUIRED**

1. A power supply is needed from the washer main panel. See wiring diagram.  
**Main Feed** - 90 to 265 VAC from the washer main supply (after wash isolator)

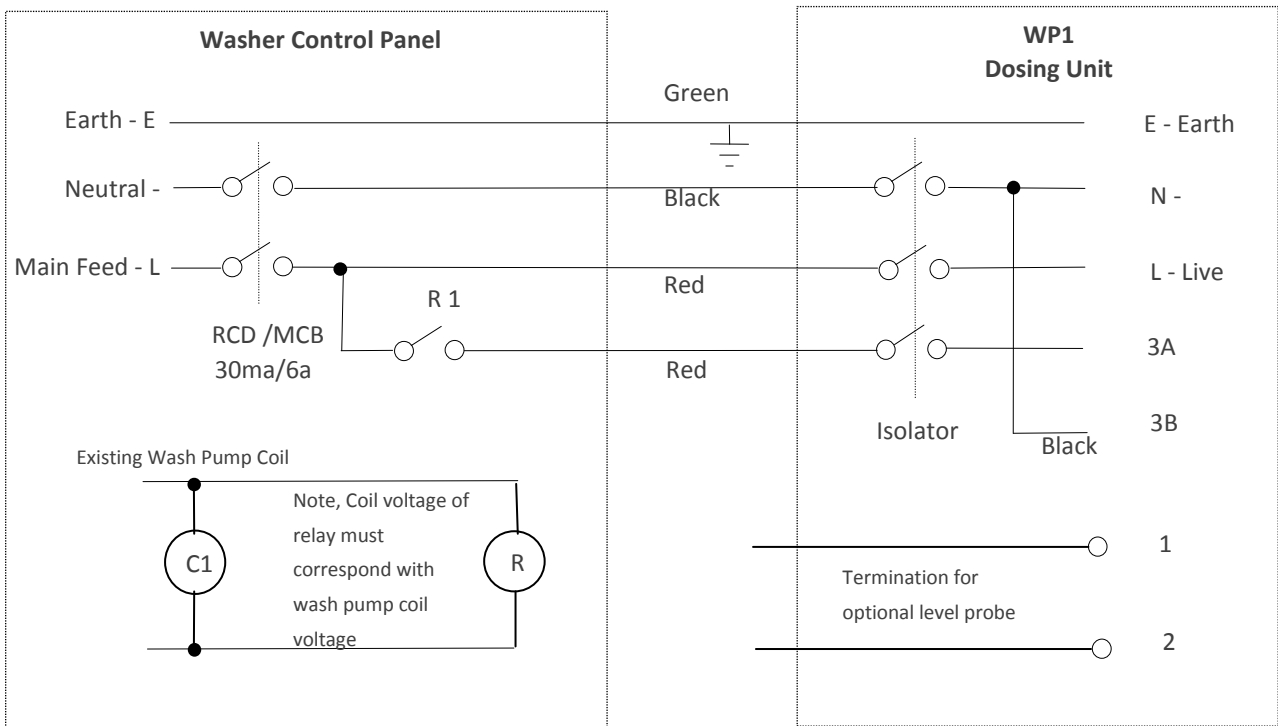
**INSTALLATION - MECHANICAL**

1. Suitably trained personnel who must ensure the installation complies with all local electrical and safety regulations must carry out the installation of this dispenser. Water Authority regulations state that no chemical dilution equipment may be connected directly to the mains supply. A break in the supply using a type "A" air gap is required; i.e. the chemical feed must not be fed into a mains water line.
2. The compatibility of the peristaltic tube (normally silicone rubber) and the chemical must be checked.
3. Survey the area to determine the most suitable position for the dispenser considering the pumping distance and chemical drum accessibility. It is recommended that the suction from the chemical drum is no longer than 2 metres in length and the delivery is as short as possible.
4. Secure WP1 to a sound surface via the externally moulded fixing points. This can either be a wall or part of the washer. Push fit the custom screw covers to present a neat finish.
5. Avoid mounting unit on hot surfaces and where steam present.
6. The correct size suction and delivery tubing must be used. Standard size is 10mm ID reinforced PVC tubing. If it is to be run in trunking / ducting, care must be taken that delivery pipes are not subjected to sharp angles as kinks may occur thus causing delivery problems.  
Always run delivery tubing safely. Never leave it trailing over hot pipes or motors etc. If the tubing run is to go higher than the pump head a non-return valve will be needed in the delivery line at the pump end.
7. The correct PPE e.g. Safety Glasses, Hard Hat, Gloves, Overalls etc should be worn.



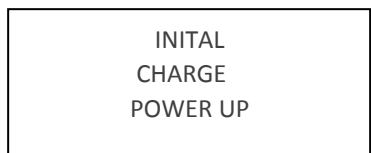
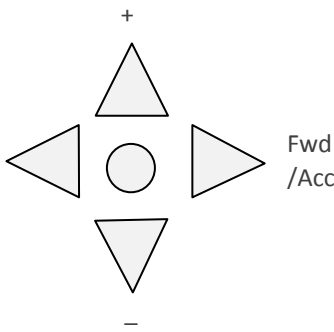
**INSTALLATION - ELECTRICAL**

1. Suitably trained personnel who must ensure the installation complies with all local electrical and safety regulations must carry out the installation of this dispenser.
2. A power supply is needed from the washer to enable the WP1 Dosing Unit to function properly.  
This is:
  - a. Main Feed - 110 to 240 V ac from the washer main supply (after washer isolator)
3. Note: The Main Feed should be live all the time the washer is switched on.
4. The addition of a relay in parallel with the wash pump contactor (or an auxillary contact fitted to the contactor) will be required; the voltage should correspond to the wash pump contactor coil.
5. The wiring should be minimum 1.0 mm.
6. Please follow the wiring diagram below for the correct installation of the WP1 dosing unit.
7. Wiring Diagram shown below:



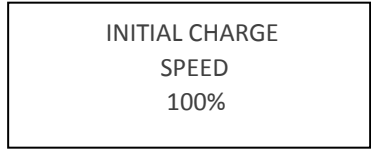
PROGRAMMING

1. The Dosing Unit has 5 user buttons, but normally only requires the use of 3 (+, - and FWD / ACC) to allow it to be programmed.
2. When the Dosing Unit is first powered up the screen should display "Holchem Tel 01706 222288". To check to see if it is in the cyclic mode press the – key 4 times. To return to the original screen press the + key 4 times. If it reads any other mode i.e. conductivity or timed/signal, the unit will require resetting to the cyclic mode. To reset press both the + and - keys simultaneously for approximately 2 seconds, the screen will read change unit. Enter the pin code as described in point 4. Press the + / - keys to scroll between the three operating modes. Press the FWD / ACC button until the screen displays cyclic. Press the FWD / ACC button twice to confirm the cyclic mode. The unit is now in the correct mode and can be programmed as set out below.
3. To gain access to program the unit press the FWD / ACC button, the screen will display "Enter Access Code and - - -".
4. Enter the pin code by selecting the appropriate first digit using the + or - buttons and then press FWD / ACC. Enter all four digits this way.
5. When the correct code has been Input the screen will show:



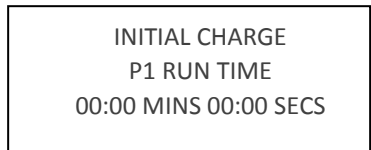
This screen allows you to set at which point the initial charge will take place. This is normally on power up. Press the FWD / ACC button to move to the next screen

6. The screen will show:



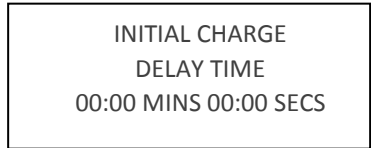
This screen shows you the percentage speed that the motor is running at and is normally set to 100%. To alter use the + / - buttons. Press the FWD / ACC button to move to the next screen

7. The screen will show:



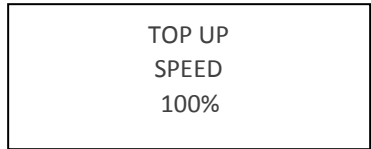
This screen allows you to set the length of time the pump will **run** for on the **Initial Charge**. Using the + / - buttons set the mins. Using the FWD / ACC button moves you to the secs. Using the + / - buttons set the secs. Press the FWD / ACC button to move to the next screen

8. The screen will show:



This screen allows you to set an initial **delay time** before the initial charge commences, allowing the washer to fill before adding chemical. Normally set to 0. To alter use the + / - buttons set the mins. Using the FWD / ACC button moves you to the secs. Using the + / - buttons set the secs. Press the FWD / ACC button to move to the next screen

9. The screen will show:



This screen shows you the percentage speed that the motor is running at and is normally set to 100%. To alter use the + / - buttons. Press the FWD / ACC button to move to the next screen

10. The screen will show:

TOP UP  
ON TIME  
00:00 MINS 00:00 SECS

This screen allows you to set the length of time the pump will **run** for on each dosing (top up) cycle. Using the + / - buttons set the mins. Using the FWD / ACC button moves you to the secs. Using the + / - buttons set the secs. Press the FWD / ACC button to move to the next screen

11. The screen will show:

TOP UP  
OFF TIME  
00:00 MINS 00:00 SECS

This screen allows you to set the length of time the pump will **pause** for on each dosing (top up) cycle. Using the + / - buttons set the mins. Using the FWD / ACC button moves you to the secs. Using the + / - buttons set the secs. Press the FWD / ACC button to move to the next screen

12. Ignore the further screens by pressing the FWD / ACC button until screen displays "SAVE SETTINGS".

13. Press FWD / ACC once more. The settings have now been saved.

14. Once saved the settings cannot be lost, but only changed by reprogramming.

To find what the tank will hold in litres you will need to multiply the length x width x height of the tank.

This will give you the size of the tank in cubic meters

1 cubic meter = 1,000 litres

A WP1 delivers 1 litre per minute at full pump speed

The losses per hour are based on 10% of the initial charge.

EG.

If the tank is 2 meters x 1 meter x 1 meter the tank is 2 cubic meters.

1 cubic meter = 1,000. Therefore the tank holds 2,000 litres

If the chemical is to be dosed at 1% you need to work out how much chemical needs adding to the tank for the initial dose.

Divide the size of the tank by 100. This will give you 1% of the tank.

$2,000 \div 100 = 20$  litres. This is the amount of chemical that needs to be added to the makeup tank

The pump runs at 1 litre per minute so the pump needs to run for 20 minutes to make up the 1% strength.

As assumed the tank loses 10% of this strength per hour.

The tank will lose 10% of the 20 litre initial dose per hour

Therefore  $20 \div 100 \times 10 = 2$  litres. The top up would need to be 2 litres per hour.

Instead of putting a 2 litre slug in every hour it is more prudent to top up the tank every 20 minutes

Therefore divide 2 litres by 3, which gives you 0.66 litres every 20 minutes

The pump delivers 1 litre per min (0.0166 per second).

Therefore  $0.66 \div 0.0166 = 39.75$  seconds. The top up charge is rounded up to 40 seconds every 20 minutes.

## MAINTENANCE



1. No routine maintenance required.
2. Recommend peristaltic tube and rotor replaced annually.
3. Recommend chemical suction and delivery hose be replaced annually or when showing signs of wear.

**TROUBLE SHOOTING**

FAULT	DIAGNOSIS	REMEDY
WP1 never runs - rotor does not turn	No power supply - no display showing	Check power to washer Check fuses in washer panel Check fuses in WP1 Check wiring Check powerboard & microboard
	Power supply ok - display showing	Check program Check power feed to motor - should be 24 VDC when energised. Check for seized motor, gearbox or rotor
WP1 runs but chemical not dosing	No chemical in container	Replace chemical container
	Chemical moves backwards and forwards in pickup tube	Replace peristaltic tube Check chemical suction tube for holes Check chemical suction tube connections for air leaks Outlet hose kinked or blocked
Incorrect dosing	Incorrect program	Reprogram
	Water flow through washer changed	Check float valves or solenoid valves

**PARTS LIST**

HOLCHEM SKS CODE	SUPPLIER CODE	DESCRIPTION
03404/04		WP1 - Peristaltic Tubing
03404/05		WP1 - Rotor Assembly
01251/01	528-384	11 – 16 mm Hose Clips
03448		25 KG Level Control Dip Tube
03449		200 KG Level Control Dip Tube

Note. Parts with either no SKS number or description have not been purchased before but can be obtained by quoting the relevant part number on the drawings.

