



# PRODUCT INFORMATION CH HIGH PRESSURE INJECTOR

## HIGH PRESSURE INJECTORS

### SUMMARY

The CH High Pressure Injector is a quality injector that should give trouble free operation if installed and maintained correctly.

The injector provides a safe, controlled and economic method for dilution of chemical into a high-pressure line for either application of foam or spray. It is not suitable for open container filling.

This simple injector requires no electricity and is driven by the water flow.

The unit is usual attached to a high-pressure outlet point (mobile machine or fixed pipework drop point) with the normal high-pressure hose gun and nozzle attached to it.

The chemical pick up hose is available in two colours Red - Detergent and Blue - Disinfectant.



**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.

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

### CH HIGH PRESSURE INJECTOR

HOLCHEM CODE	SKS01801 (RED PICK UP HOSE)	SKS01806 (BLUE PICK UP HOSE)
Flow Rate	Approx.	0.75 m <sup>3</sup> /h (12 l/min) @ 70 bar (1000 psi)
Operating Pressure	Minimum	2 bar (30 psi)
	Maximum	100 bar (1400 psi)
Operating Pressure for Foaming	Minimum	50 bar (700 psi)
	Maximum	100 bar (1400 psi)
Maximum Water Temperature		80°C
Dilution Rate		0.2% to 10% v/v (Variable in steps dependant on orifice plate)
Dilution Rate - Adjustment		Standard St/St orifice plates (not supplied)
Connections	Inlet	3/8" BSP male parallel
	Outlet	3/8" BSP male parallel
Total Length		0.09 m
Weight		0.6 Kg
Materials of Construction (water side)		304 St/St
Materials of Construction (chemical side)		304 St/St, 316 St/St & EPDM
Supplied with:		Rubber seal for orifice plates



### PRINCIPLE OF OPERATION

Water enters the unit and passes through the inlet nozzle forming a fast moving stream of water. The collector catches this stream of water.

A partial vacuum is created by this flow of water and is used to suck chemical up into the injector via the chemical pick up tube.

Restricting the flow of the chemical into the injector controls the injection rate. This is achieved by using an orifice plate.

In the chemical pick-up side a non-return valve is fitted to stop water back flowing into the chemical drum.

The injector must be matched to the outlet shooting kit. Backpressure caused by restrictions in the shooting kit, including couplings, hoses, gun / lance and nozzle, will reduce the efficiency of the injector, or stop it working.

### SAFETY

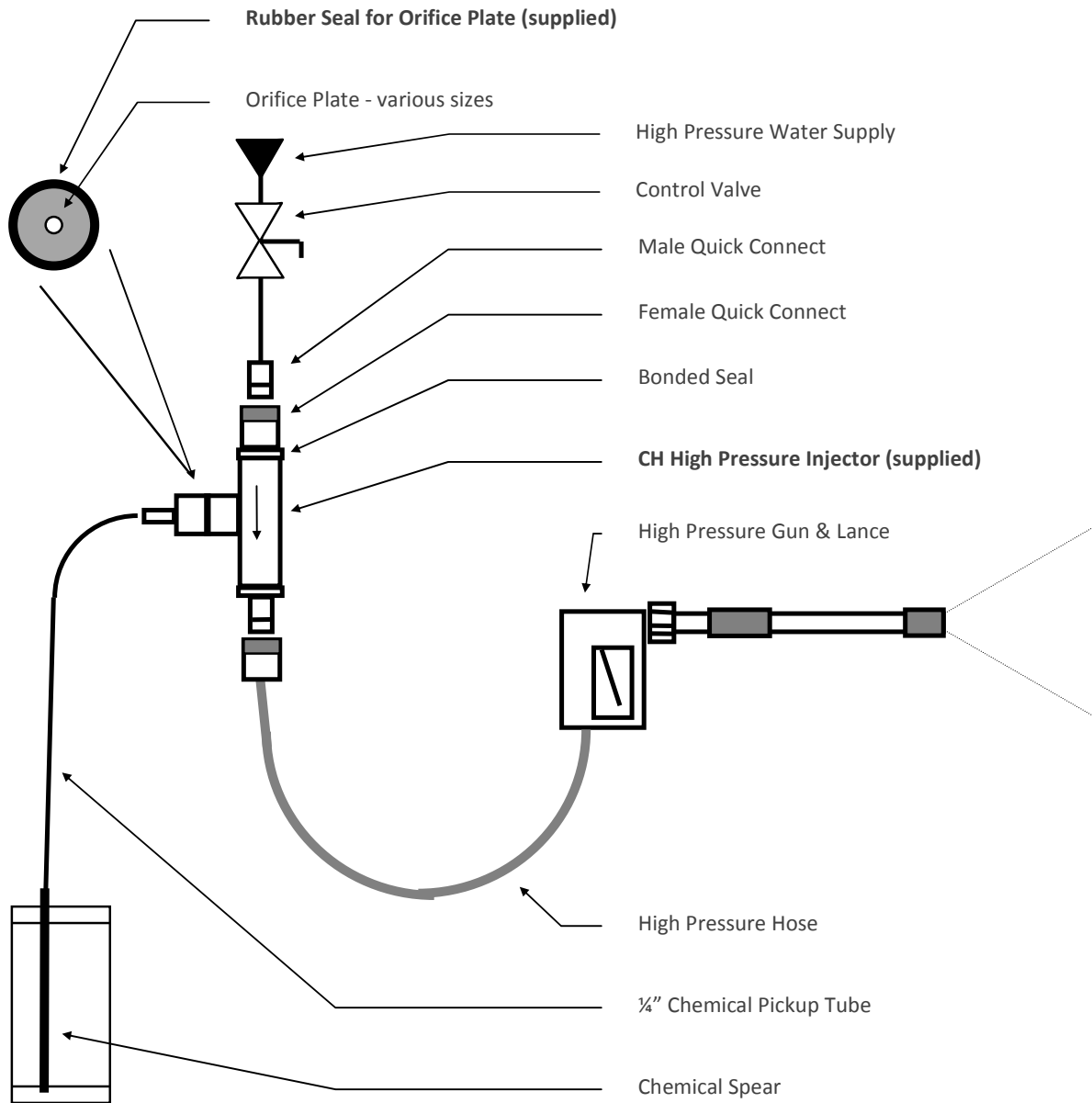
1. The equipment should not be used prior to proper installation and commissioning.
2. The equipment should only be used by personnel trained in its use and in the use of the chemicals being dispensed.
3. The equipment should only be adjusted when the unit has been flushed with water and then the supply has been isolated from the equipment and the unit depressurised.
4. Operators must wear suitable personal protective equipment for the chemical being dispensed and the high-pressure water.
5. Chemicals must never be mixed either prior to or after dilution.
6. 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. Isolate water supply from the equipment.
  - c. If unit has failed and the chemical cannot be flushed then suitable personal protective equipment must be worn for disassembly.

### SERVICES REQUIRED

1. Isolated water supply with control valve. Water pressure, flow and temperature requirements given in equipment specification.
2. Water pressure, flow and temperature requirements given in equipment specification.

INSTALLATION.

1. **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.**
2. The unit is commonly used as a mobile unit and is fitted with quick connect couplings for ease of use. The diagram below shows typical arrangement.
3. The unit can also be used as a fixed installation in pipework; if so then care must be taken to minimise the risk of chemical backflow into the water supply.
4. The compatibility of the materials of construction of the dosing unit and the chemical must be checked.
5. Ensure water flow is in direction of arrow shown on the injector body.



## INSTALLATION \ COMMISSIONING

### MOBILE INSTALLATION (AS PER DIAGRAM)

1. Fit quick connect couplings to injector body using bonded seals.
2. Fit chemical pickup tube to injector chemical inlet hosetail and chemical spear. Attach using D-clips.
3. Unscrew orifice-housing nut.
4. Remove orifice rubber.
5. Fit suitable orifice plate into rubber seal and replace into orifice housing.
6. Hand tighten orifice-housing nut.
7. Connect injector to high-pressure outlet.
8. Connect high-pressure hose and gun.
9. Slowly turn on water supply and check for leaks.
10. Place chemical spear into chemical container and pull gun handle. Chemical should be drawn up the chemical pickup pipe into the injector.

### FIXED INSTALLATION

11. Install CH High Pressure Injector into high-pressure pipework.
12. Follow steps 2 to 10 above.

## ADJUSTING STRENGTH.

### IMPORTANT - USE NO TOOLS!

1. Place chemical spear in clean water and run injector until all chemical flushed from system.
2. Turn off water supply and disconnect from supply if possible.
3. Unscrew orifice-housing nut.
4. Remove orifice plate and refit appropriate size. Note: rubber seal must be fitted.
5. Hand tighten orifice-housing nut.
6. Check strength and readjust if required (steps 1 to 6).

## MAINTENANCE

1. No routine maintenance required.
2. Recommend chemical suction tube and orifice rubber seal be replaced annually or when showing signs of wear.

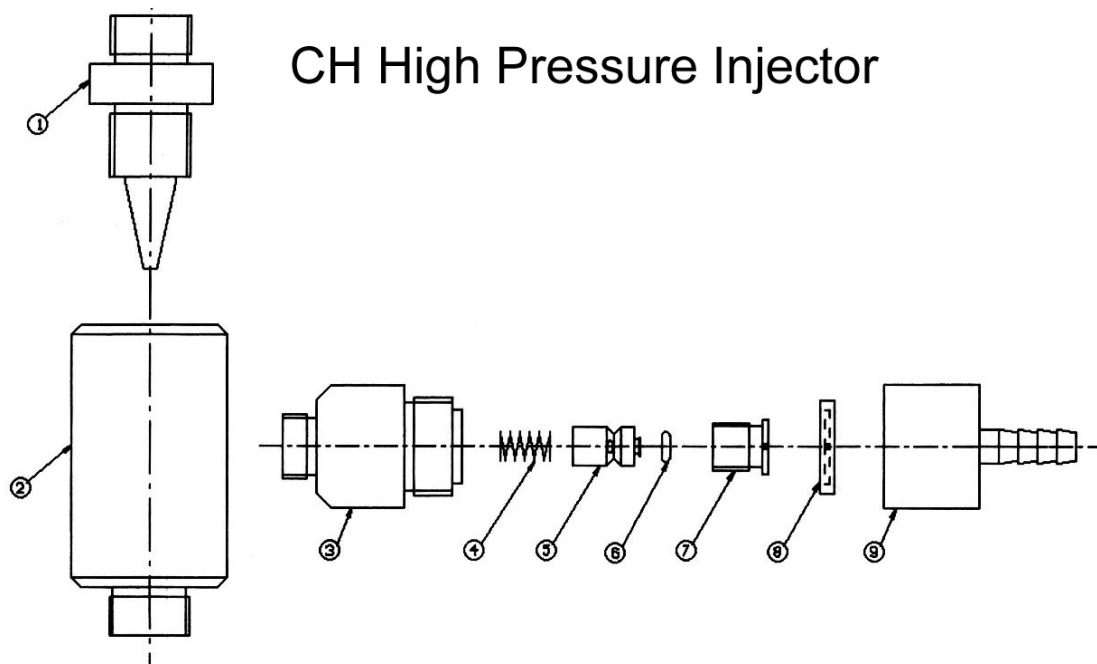


TROUBLE SHOOTING

Fault	Diagnosis	Remedy
No flow of water when gun opened	No water supply	Check water supply Check all valves or pumps
	Blocked injector	Remove injector from supply & clear away blockage gently using a thin wire (1mm).
Water flowing back into chemical	Dirt under seal in non-Return valve	Clean or change suction valve seal and or non return valve assembly
	Worn seals in non-return valve	
	Non return missing or incorrectly assembled	Refit
No chemical pickup <u>or</u> Low chemical strength	No flow of water	See above
	Low water pressure	Investigate supply
	No outlet hose	Refit outlet hose
	Blocked suction tube or strainer	Clean out and refit
	Restriction in inlet or collector nozzles	Remove injector and carefully clear collector and inlet nozzles using thin wire (1 mm), then rinse. Descale (use Nipac)
	Mismatch of injector to shooting kit.	Check shooting kit
	Air leak on chemical inlet	Check orifice plate & rubber seal in place Check tightness of nut/hosetail Check chemical suction tube for holes



PARTS DRAWING (1 OF 1)



# CH High Pressure Injector

**PARTS LIST**

Ref	Holchem SKS Code	Supplier Code	Description
3to9	01801/01	04000-30	Fixed Orifice Assembly (parts 3 to 9)
4	01801/02	919FP0160	NRV Spring
4&6	01801/03		Repair Kit (2 x O Rings, 1 x NRV Spring)
5	01801/04	922ME0160	Poppet Valve
7	01801/05	922ME0120	Retaining Screw
3	01801/06	922ME0020	Metering Body
9	01801/07	922F10080	Nut & Hosetail
8	01802/01	CP18999-EPR	Rubber Seal

**Note. Parts 1 & 2 are not cost effective to replace.**

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.