



# HYDROQUENCH 3000 MK2

AUTOMATIC SPRINKLER SETS FOR DOMESTIC AND RESIDENTIAL APPLICATIONS



## Packaged Sprinkler sets

Standard flow range 0 - 400 l/m

Standard pressure range 1 - 6 Bar

*Higher flow rates available on request.*

## Main features

- Fully pressurised system giving instant reaction to sprinkler operation.
- Automatic self test cycle with true indication of pump condition.
- Selectable test cycle frequency
- Fully packaged units which enable quick cost effective installation.
- Volt free alarm contact to give external warning of pump set started/fault.
- Volt free alarm contact for evacuation alarm.
- Monitors both pressure and flow to prevent premature manual shutdown.
- Integral 8L vessel to accommodate expansion and maintain pressure against small leaks.
- LED status indication.
- Manual test facility.

**Designed to comply with specification  
EN 12259-12 & BS9251**

## Sprinkler systems

Most people will be aware of the sad fact that many lives have been lost to fire in unprotected buildings, but a lesser known fact is that no deaths by fire have been reported to date where the building was fully protected by fire sprinklers.

## Description

Hydroquench automatic sprinkler sets incorporate the latest technologies to ensure the highest degree of reliability.

A large range of pump types are available enabling a perfect match for each individual system primarily covering Domestic and Residential applications.

Each month the sprinkler set will carry out a pump performance test to ensure the pump remains in perfect working order and ready for operation. The frequency of test is adjustable and can be increased if required.

## Pump set on demand

When the on demand lamp is illuminated it signals that the fire set has been called into action and is now on demand, under this condition it is not possible to stop the set by pressing the stop button. Once the fire has been extinguished the discharge isolation valve can be closed which will cause the on demand lamp to be extinguished after which the stop button can be pressed and the set will stop.

## General alarm contact

When the pump set starts, an audible alarm will sound at the set, a failsafe general alarm volt free contact will operate to indicate to a remote monitoring device (not supplied) that the pump set has started or a fault has occurred.

## Flow alarm contact

The flow alarm volt free contact will only operate if flow is taking place indicating a real usage on the system.

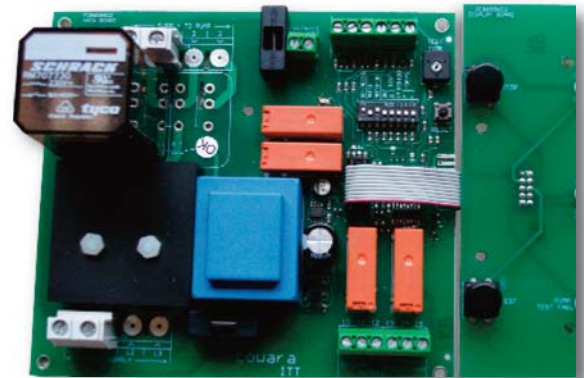
This alarm contact can be used to trigger the evacuation alarm.

## Pump test

The pump set will automatically operate a self test cycle at pre-set intervals, which can be adjusted between 4 and 28 days. This test can also be carried out manually at any time by operating the test button.

When being tested, manually or automatically, the pump runs for approximately 5 seconds. The pump will be monitored to ensure that it can achieve the design set point pressure. If the test is successful then no alarm will be sounded. If the pump fails then the audible alarm will sound and the general alarm volt free contact will operate.

## Advanced electronic control



## Control panel



## High power control panel.



## Re-pressurisation mode

In this mode the control circuit will look at both pressure and flow, if pressure has fallen without flow taking place then the control logic will start a pump to re-pressurise the system without sounding the evacuation alarm.

The pump will automatically stop and revert to standby mode when the system pressure is back to normal.

The general alarm contact will operate whilst the Pump is running.

## Recirculation line

The set is fitted with facilities to re-circulate Water back to the break tank or to drain to prevent overheating which could occur if the set was left to run under closed valve conditions.

## Operation

The pump set is designed to maintain pressure to various sprinkler heads, if a sprinkler head is activated the pressure in the system will start to fall, a pressure switch within the system will monitor this fall in pressure and start the pump set. The pump will deliver the required pressure and flow to satisfy the system demand.

When a sprinkler head is activated and the pump set has started a flow switch within the system will monitor flow through the system.

The pump set will now continuously run until pressure has been restored to the duty stop point and the flow switch has registered that no flow is taking place. When both criteria have been met the stop button will become operative. Under these conditions the stop button can be operated to stop the pump set.

## Suction line conditions

Hydroquench units are designed to operate with a flooded suction line.

Hydroquench units are NOT suitable to operate under suction lift conditions.

## Electrical supply

230V single phase 50Hz. up to 2.2 Kw

400V three phase + neutral D.O.L. up to 5.5Kw

Phase failure protection available as an option on 3 phase units.

## Material specification

<b>Pipework :</b>	<b>Galvanised/brass</b>
<b>Baseplate:</b>	<b>Galvanised steel</b>
<b>Control panel:</b>	<b>Plastic IP54</b>
<b>Ball valves:</b>	<b>Full bore nickel plated brass</b>
<b>Non return valves:</b>	<b>Spring loaded nickel plated brass</b>
<b>Vessel:</b>	<b>Steel 8L Fixed diaphragm</b>
<b>Flow switch:</b>	<b>Brass IP54</b>
<b>Pressure switch 1:</b>	<b>Variable differential with stainless steel wetted parts</b>
<b>Pressure switch 2:</b>	<b>Fixed differential brass body with Viton diaphragm</b>

## Standard pump selection

Duty Pump Type	Single sprinkler Head operating Total Duty	2 sprinkler heads operating Total Duty	4 sprinkler heads operating Total Duty	Required head Pressure Bar
3HM05P	60 l/m			2.5 bar
3HM06P	60 l/m			3.5 bar
5HM05P	60 l/m			4.4 bar
5HM06P		100 l/m		3.5 bar
5HM04S		120 l/m		1.5 bar
5HM05S		120 l/m		2.1 bar
15SV03			240 l/m	3.2 bar
15SV04			240 l/m	4.6 bar
15SV05			240 l/m	6.0 bar
22SV06			400 l/m	6.0 bar

*Other duties available on request.*

## Optional accessories

### Solenoid valve

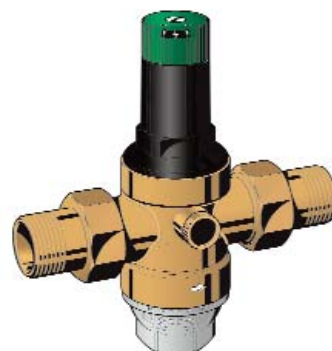
The solenoid valve is used when the unit is fed directly from a mains water supply. The solenoid valve is connected to the recirculation line to enable a small amount of water to be passed to drain whilst the Hydroquench pump is running; this is to prevent the pump from over heating under closed valve conditions.



### Pressure reducing valve

The pressure reducing valve can be used to reduce the total closed valve head pressure exerted on the system when the unit is fed directly from a mains water supply.

In this instance the mains incoming water pressure will be added to that the pump produces at closed valve head, the total of these two pressures will be exerted on the system which may be beyond the design pressure, so a pressure reducing valve can be installed in the mains incoming water feed to reduce the incoming pressure to a safe margin.



## Typical layout with break tank

### Break tank sizing

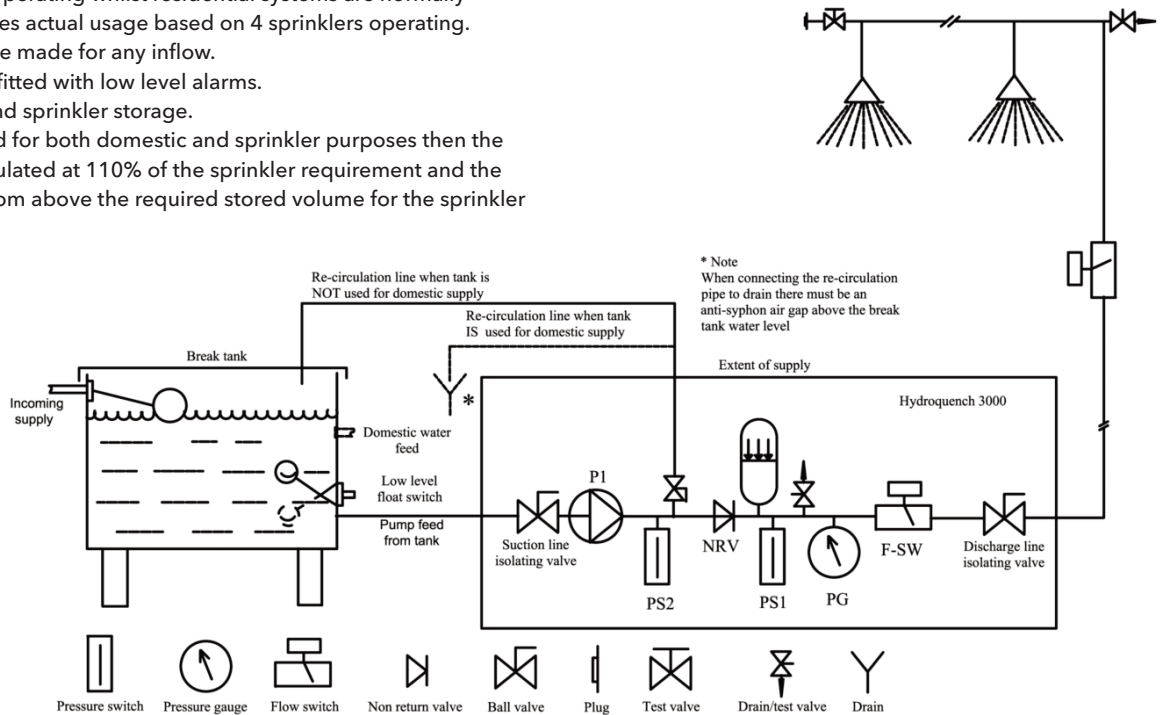
Normally domestic occupancies are calculated on 10 minutes actual usage based on 2 sprinklers operating whilst residential systems are normally calculated on 30 minutes actual usage based on 4 sprinklers operating.

No allowance should be made for any inflow.

Break tanks should be fitted with low level alarms.

Combined domestic and sprinkler storage.

If the break tank is used for both domestic and sprinkler purposes then the volume should be calculated at 110% of the sprinkler requirement and the domestic feed taken from above the required stored volume for the sprinkler system.



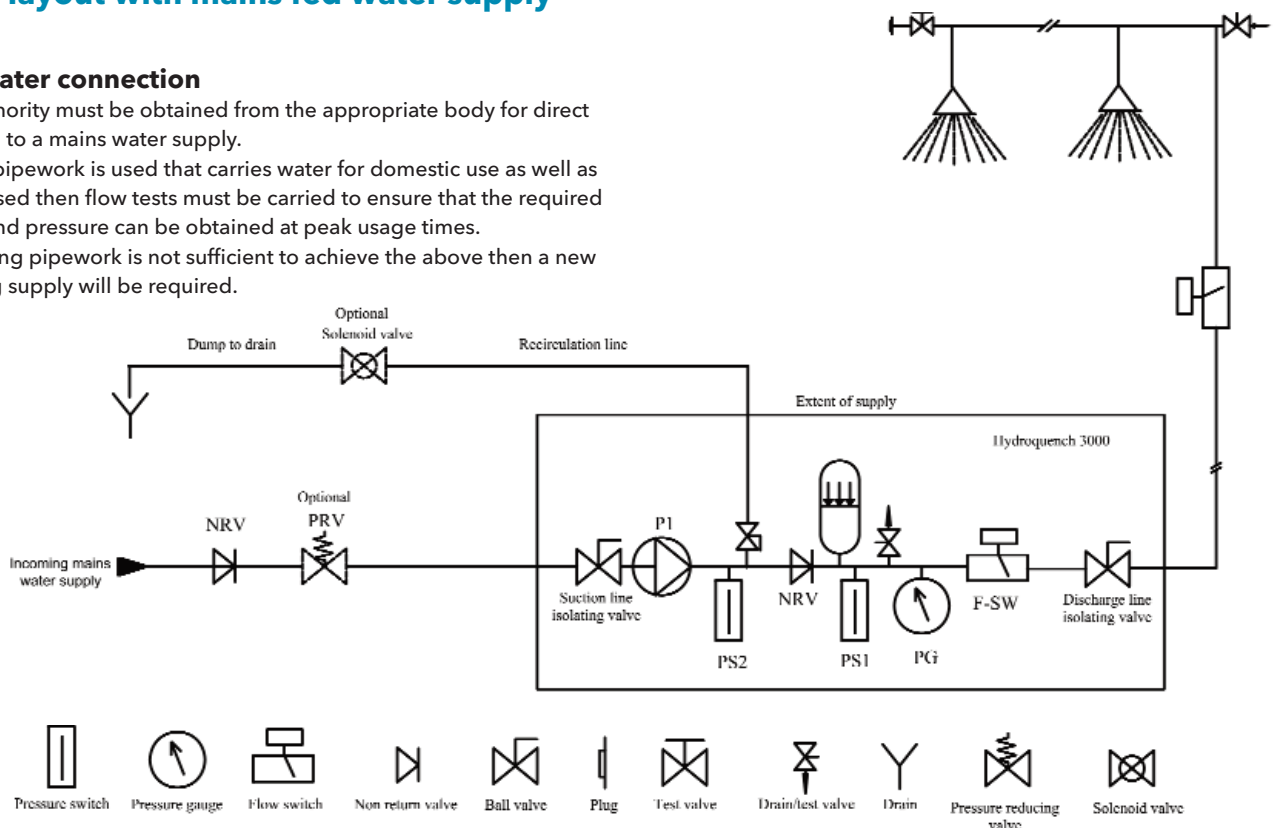
## Typical layout with mains water supply

### Mains water connection

Written authority must be obtained from the appropriate body for direct connection to a mains water supply.

If existing pipework is used that carries water for domestic use as well as sprinkler used then flow tests must be carried to ensure that the required flow rate and pressure can be obtained at peak usage times.

If the existing pipework is not sufficient to achieve the above then a new incoming supply will be required.

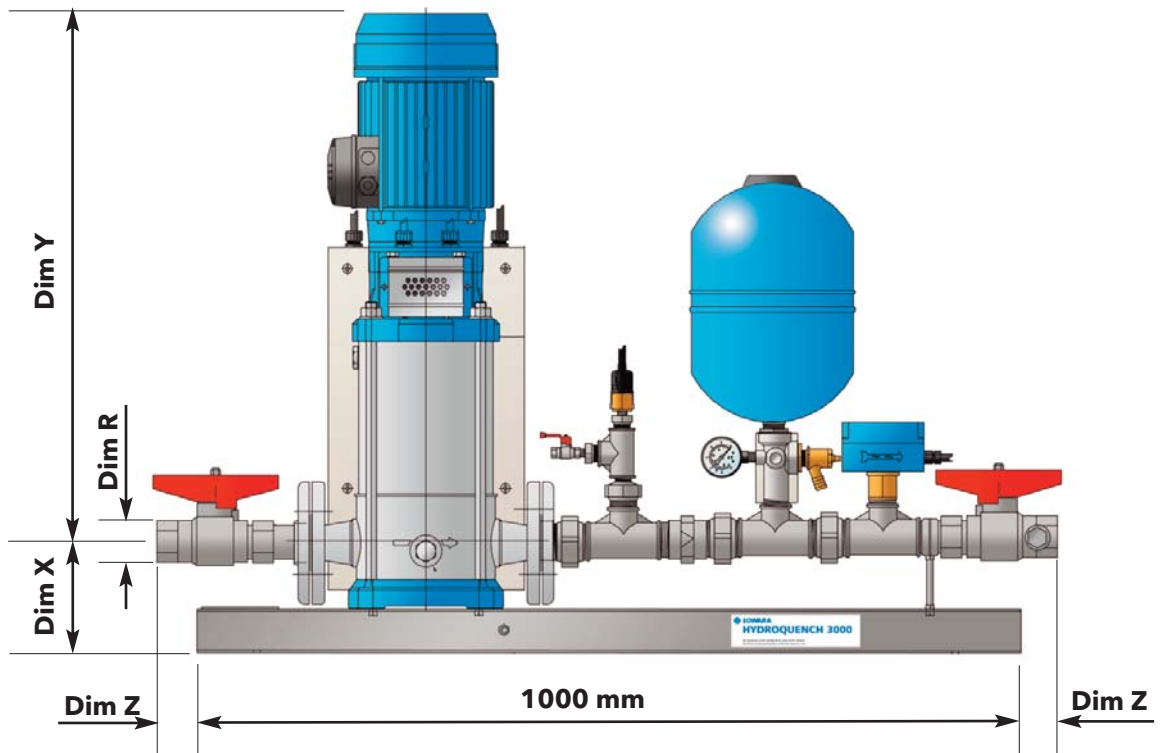


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### e-SV Version

Pump Type	Dim X	Dim Y max	Dim Z	Width max	Dim R
5SV	125	786	35	380	1¼" female
10SV	130	787	50	400	1½" female
15SV	140	963	60	400	2" female
22SV	140	955	95	400	2" female

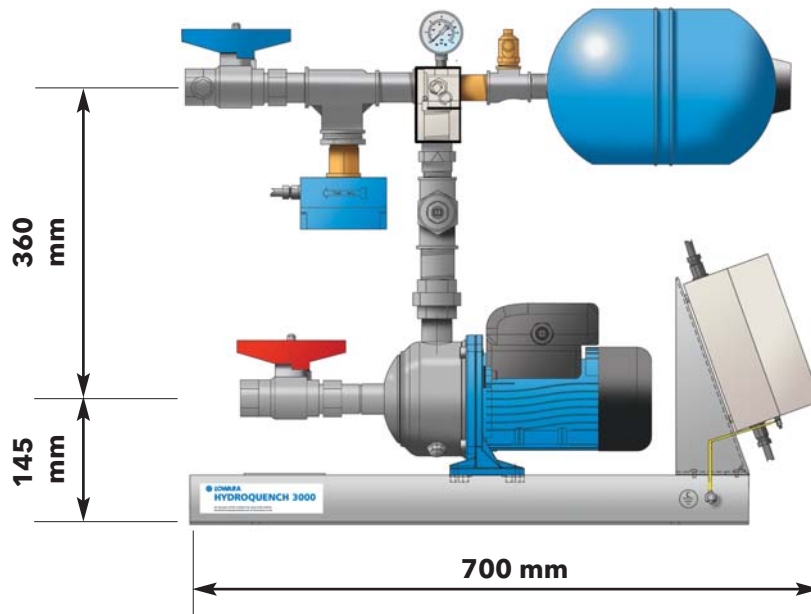
Dimensions in mm



### e-HM Version

Width  
340 mm

Height  
640 mm



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- 2) A leading global water technology company.

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