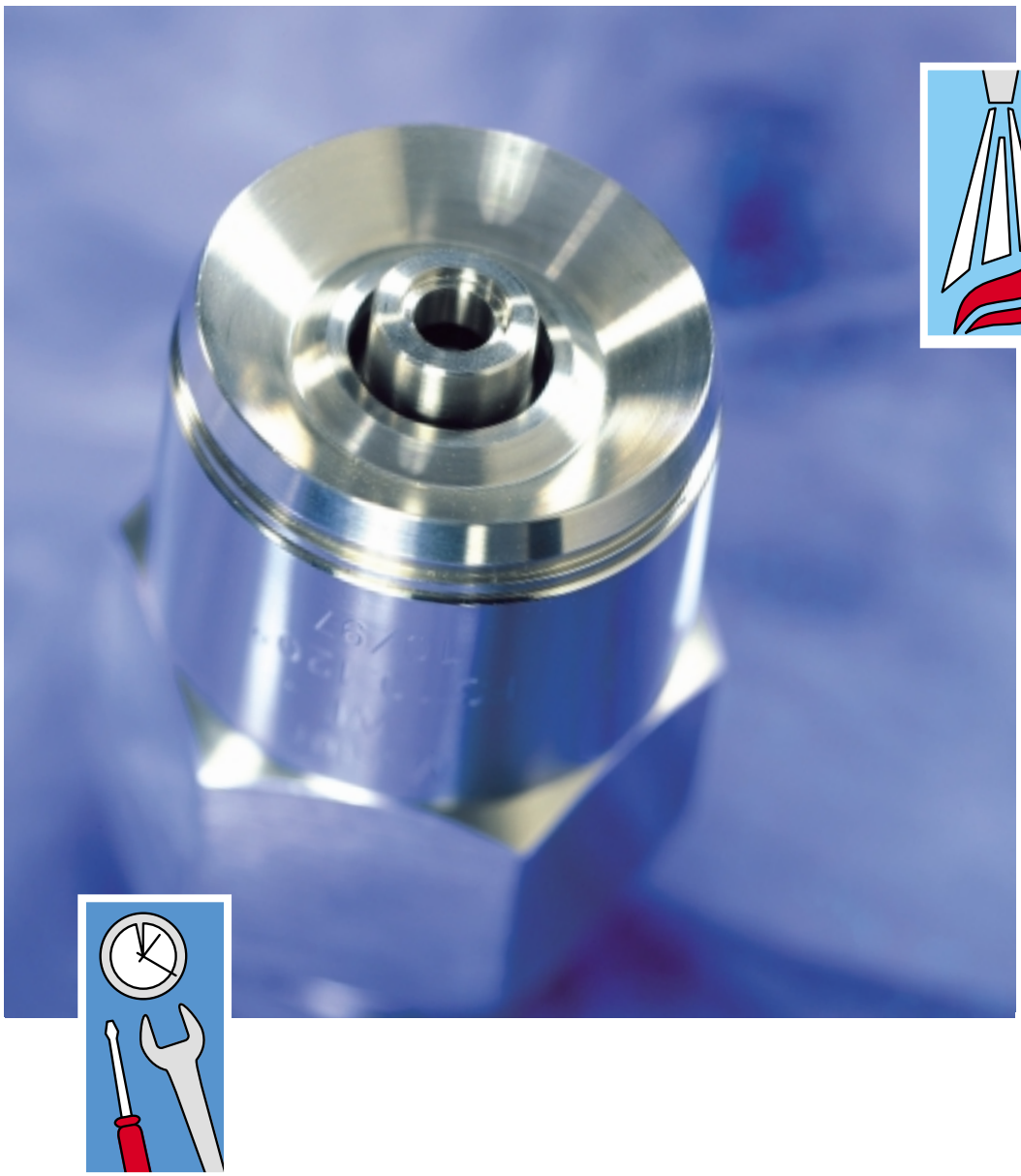
MicroDrop®-
EXTINGUISHING SYSTEMS



tyco / Fire & Security

TOTAL WALTHER

SUCCESSFUL FIRE PROTECTION STARTS WITH WATER

A long reach is achieved with MicroDrop® extinguishing nozzles thanks to the "transportation assistance" from the inner cone of extinguishing agent.

The industrialization of production and trade has not only created the need for structural fire protection and assistance from fire brigades; it also requires automatic fire protection systems on an increasing scale. To meet this requirement for improved protection of people and equipment, sprinkler systems were developed, starting in the middle of the nineteenth century. These systems optimized the extinguishing effect of the water with minimum water usage.

Water is still an important extinguishing agent today. It is reasonably priced, and almost always available. Since it is compatible with most other substances, it has a wide range of possible applications.

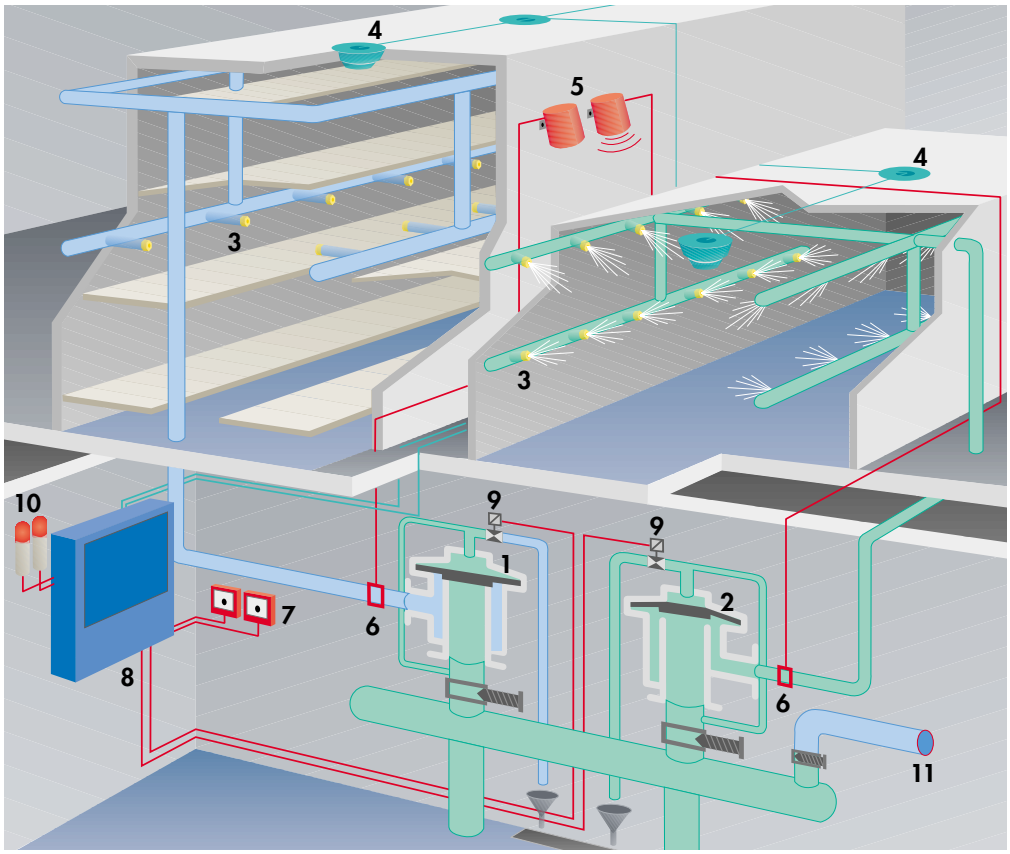
MicroDrop®: First class extinguishing performance

Keeping pace with the advance of technology, MicroDrop® extinguishing systems are an innovative and environmentally friendly development based on TOTAL WALTHER's water spray systems. The very fine spray pattern makes optimal use of the extinguishing potential, while at the same time limiting the consumption of contaminated extinguishing water.

Compatible with composite water systems

MicroDrop® extinguishing systems from TOTAL WALTHER GmbH can easily be connected to your existing sprinkler and deluge installations, thanks to system compatibility. Our specialists use the same system components which have proven their excellence in these extinguishing techniques.

A CHOICE OF CONTROL



By installing special extinguishing control cards, it is possible for the extinguishing section valves to be activated with different types of timing:

- discharge for limited periods
- continuous discharge
- intermittent discharge

Water supply

Commissioning of a MicroDrop® extinguishing system is conditional on the water supply, either from

- town mains or industrial water networks,
- pressure or gravity tanks,
- pump systems in conjunction with intermediate or storage tanks,
- pump systems supplied from open bodies of water,
- a connection from the water supply for sprinkler and water spray extinguishing systems.

Backed by more than 100 years of experience, the team of specialists at TOTAL WALTHER GmbH will be glad to advise you on all aspects of fire protection, including unusual risks and equipment of all sizes – so you can benefit from their competence, commitment and professionalism.

Diagram of a MicroDrop® extinguishing system with two extinguishing sections

1 *Closed sectional valve*
2 *Opened sectional valve*
3 *MicroDrop® nozzles*
4 *Fire detector*
5 *Acoustic alarm*
6 *Alarm pressure switch*
7 *Manual activators for the sectional valves*
8 *Detection and extinguishing control panel*
9 *Solenoid valves to open and close the sectional valves*
10 *Flashing light*
11 *Fire brigade hose connection*

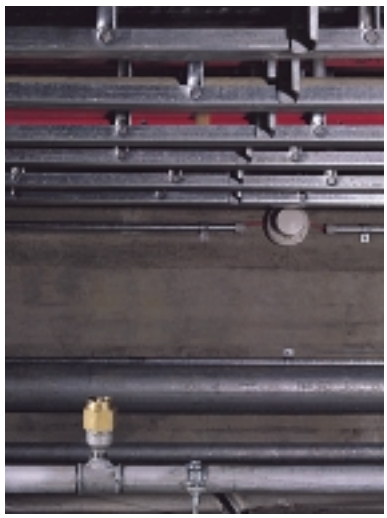
LEADING TECHNOLOGY GUARANTEES FAST EXTINGUISHING

The structure and handling of a MicroDrop® extinguishing system are based on TOTAL WALTHER's expertise and experience in developing water spray technology. In essence, their installation and operation are the same as for the familiar, tried and tested water spray extinguishing systems.

The central element of the system, alongside the extinguishing nozzles, is the sectional valve. This valve acts as an alarm and control valve to activate the extinguishing process, and is connected to the water supply. The latest generation of valves can be activated pneumatically, hydraulically or electrically, according to choice. To ensure smooth operation, our specialists base the fire detection and extinguishing technology on the same type of operation. The MicroDrop® extinguishing system can also released manually.

When the extinguishing section valve is opened, extinguishing water flows to all the nozzles in a section within a matter of seconds, filling the entire protected section with water mist. The size and number of extinguishing sections and nozzles installed will vary according to the room and equipment.

DN 50 control valve for the MicroDrop® extinguishing system



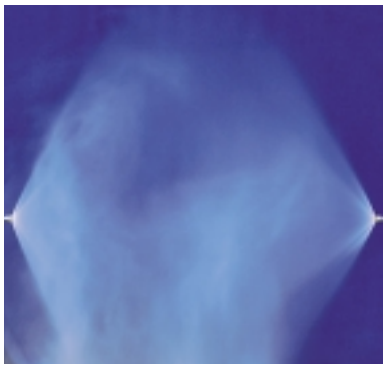
MicroDrop® extinguishing nozzle and fire detector in a cable duct.

Reliable activation

To avoid false alarms, cross-zoned detection is used. When a preliminary alarm is given, only the main valve is opened at first. But the water is not released to the extinguishing nozzles in the protected section until a second alarm is given.

A SUPERIOR EXTINGUISHING SYSTEM

MicroDrop® nozzles generate a homogeneous spray pattern.



Water brought to the point of perfection

Unlike conventional sprinkler and water spray extinguishing systems which allow radiant heat to penetrate unimpeded, the MicroDrop® extinguishing system forms a water fog made of very fine droplets. These cool the flame zone, reducing the fire reaction and increasing the heat absorption and preventing the feedback of radiant heat.

2-stage extinguishing with intermittent discharge

In extinguishing stage 1, flame detectors detect the fire in milliseconds, and initiate the immediate discharge of extinguishing agent on to the protected equipment. As soon as the flames are suppressed, the extinguishing system switches off automatically. Extinguishing stage 2 is only activated if the fire has not been successfully extinguished. In this case, the entire room is flooded with MicroDrop® water fog.

Protecting people and the environment

MicroDrop® extinguishing systems quickly limit the fire while it is still in its developing phase. The high water solubility of smoke and fire gases in a cloud of very fine droplets reduces the harmful emissions and the amount of any contaminated extinguishing water. Even if extinguishing additives are used, the MicroDrop® water fog is not dangerous to human beings. Thanks to the advanced MicroDrop® technology from TOTAL WALTHER GmbH, it is possible to reduce the water demand by 40 to 60%, depending on the specific application.

When extinguishing additives are used such as foam, it is possible to reduce the water demand by up to 90% as compared with conventional extinguishing methods – a convincing contribution to environmental protection.

A SPECIAL APPLICATION FOR FINE SPRAY NOZZLES

Single and twin cone nozzles made of brass or special steel, with various water flow rates

Easy maintenance - inside and out
To keep the nozzles permanently clean and ready for operation, they are all equipped with a fine filter to prevent contamination from the inside, and a protective cap to keep out external impurities.

The MicroDrop® technology from TOTAL WALTHER is used in a pressure range from 4 to12.5 bar, and is classified as low pressure water mist. Depending on the flow pressure, patented fine spray nozzles (swirl nozzles) generate water droplets with a diameter of 20 to 200 µm.

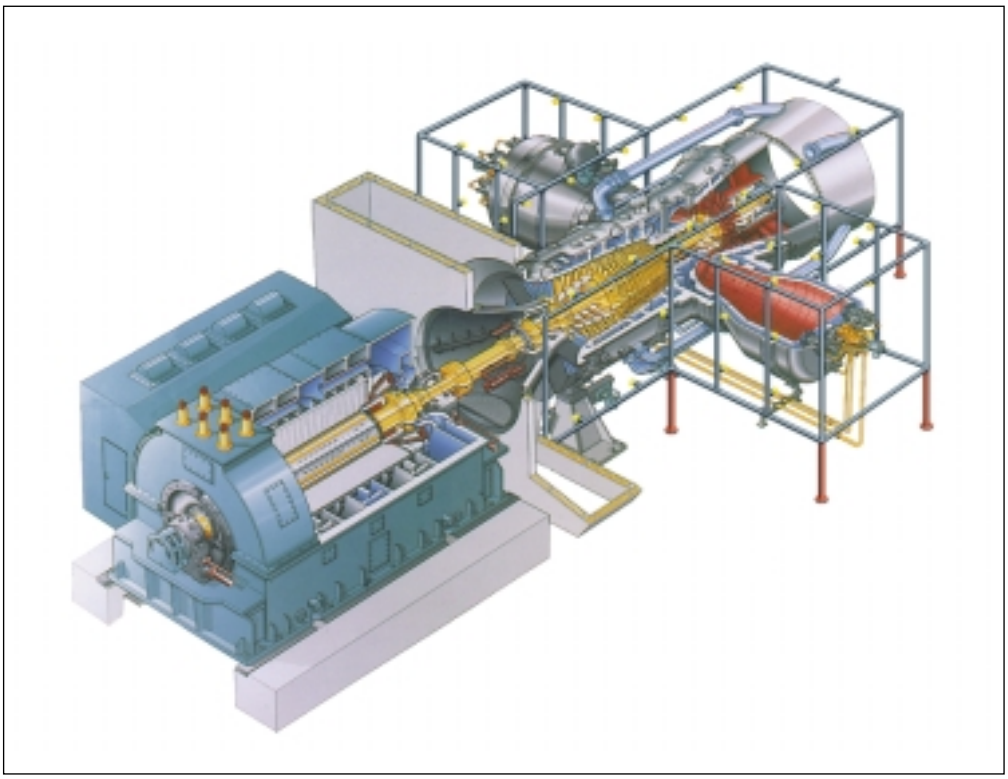
Long range
The way the extinguishing nozzles are installed in the room influences the homogeneous distribution of the water mist. With a horizontal arrangement, the throw range is up to 3m, while the vertical installation arrangement enables reliable protection for distances of up to 7m.

Cluster nozzles
The cluster nozzle consists of a radial arrangement of 3 to 5 nozzles. In this way, large room areas with up to 25m² of protected area can be effectively protected against the hazards of fire.

Single and twin nozzles
TOTAL WALTHER GmbH offers extinguishing nozzles with one spray cone (the single nozzle) and with two spray cones with different spray angles of opening (90° to 120°) - the twin nozzle. The water mist can be optimized with a twin nozzle.

MicroDrop® cluster nozzles allow semi-conical room coverage for special applications, so that the number of nozzles can be reduced.

FIRST CLASS FIRE PROTECTION FOR EQUIPMENT AND ROOMS



Local application protection of a gas turbine with two combustion chambers

MicroDrop® in every extinguishing situation

Modern MicroDrop® extinguishing systems from TOTAL WALTHER are successfully used to protect machinery, equipment and rooms of all sorts against fire. Optimal positioning of the nozzles in the room or on the machinery installation guarantees comprehensive vaporization at the seat of the fire – and this in turn guarantees optimal utilization of the available water.

One component in the system

MicroDrop® extinguishing systems are an optimal addition to your overall fire protection concept. They are the cost-effective alternative which can be used wherever the fire may spread out from its origin in a short period, and where wetting with water cannot cause any damage. They are installed to protect cable ducts and lines, transformers and turbine areas, and for local application protection in the chipboard and foamed materials industries.

Local application nozzles for use in small room volumes and special applications

AND OUR MAINTENANCE AND SERVICE TECHNICIANS ARE AT YOUR DISPOSAL ALL DAY, EVERY DAY

Branches all over Germany make it easy for you: our specialists and technicians are nearby ready to help you personally on site.

With its team of approximately 250 service employees TOTAL WALTHER GmbH is on hand to look after your safety and security right 24 hours a day. You can reach us on our Hotline day and night and at weekends for immediate service assistance.

Fire extinguishing and security systems have a name:
TOTAL WALTHER GmbH

tyco
Fire & Security

Total Walther

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