

# ITHO-CAL anti-scaling device



Static magnetic field equipment.

In compliance with the Decree of the Ministry of Health no. 443 of 21/12/90 and relating to domestic and technological equipment for treating drinking water.

## SOME EXAMPLES OF USAGE

All waters for normal usage, except for rare exceptions, cause various degrees of scaling; their hardness varies in most cases from 10° to 50° F. The result of this is that even in stable conditions, lime deposits form. When the normal balance in some way deteriorates, for example due to cooling or heating, the lime deposit increases considerably. It is therefore obvious that **ITHO-CAL** must be used in almost any piece of equipment using water; practically on all domestic appliances such as washing machines, dishwashers, water heaters and boilers. In industry, the field of usage is even wider and the need greater. It can be installed on industrial washing machines, ironing machines, large cookers, automatic drinks distributors, humidifiers, air-conditioners, refrigerators, cooling towers and circuits, water heater compressors and steam-producing machines, heat exchangers and in general all machines that use water for any reason.

## DESCRIPTION OF SOME TESTS AND RESPECTIVE RESULTS

### ► DYNAMIC TEST

water at ambient temperature heated in a coil emerged in a thermostatic bath with continuous distribution

- temporary initial water hardness:	40°F
- heating temperature	50°C
- quantity of water treated	50 Lt.

### ► RESULTS

- water not treated with ITHO-CAL = 504mg. (Ca) of scaling.  
 - water treated with ITHO-CAL = 200mg. (Ca) of scaling.

### SCALING REDUCED BY 60,3%

### ► STATIC TEST

water at ambient temperature poured into a container and heated with an electric element.

- temporary initial water hardness:	40°F
- heating temperature	85°C
- quantity of water treated	30 Lt.
- length of heating time	24 hours

### ► RESULTS

- water not treated with ITHO-CAL = mg.2160 (Ca) of scaling.  
 - water treated with ITHO-CAL = mg.996.6 (Ca) of scaling.

### SCALING REDUCED BY 54%

## SOME INFORMATION

In the case of very high heat exchange, the induced loads leak more easily. Therefore the device is not very effective in generators with a heat exchange coefficient of over 25.000 kcal/h/m<sup>2</sup>. In machines heated with an electric element thermal exchange must not exceed 3,5 w/h/cm<sup>2</sup>.

## MAINTENANCE

ITHO-CAL requires no maintenance.

Avoid the deposit, inside to the anti-scaling device, of eventual ferrous debris present in the plant.

## LIFE

The materials used and the particular treatment to which the various **ITHO-CAL** components undergo mean that they last more or less for ever, in any case much longer than the normal life of the equipment on which they are installed.

## SAFETY

ITHO-CAL does not introduce any chemical substance into the water and does not cause any changes that make it less suitable for drinking, with all the obvious advantages this gives.

## QUALITY OF MATERIALS

All the devices are made with materials that are suitable to come into contact with drinking water.

## ITHO-CAL 1001



with male and female formation.

It can be used on almost any kind of pipe, inserting it like a stub pipe.

code	Ø	Length in mm.	capacity ~ Litres/min.
1001.17	3/8"	62	9
1001.21	1/2"	75	16
1001.27	3/4"	80	27
1001.33	1"	84	53
1001.48	1.1/2"	85	100
1001.60	2"	96	145

## ITHO-CAL 1002

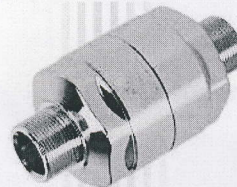


with cheek formation.

It is used on copper, brass, plastic and rubber pipes and in general on pipelines in non-ferrous materials

code	Ø	Length in mm.	capacity ~ Litres/min.
1002.12	12	40	10
1002.14	14	40	14
1002.15	15	40	16
1002.16	16	40	16
1002.18	18	40	16

## ITHO-CAL 1005



with male and male formation. It can be used on industrial plants or appliances.

code	Ø	Length x Ø mm.	capacity ~ Litres/min.
1005.42	1.1/4"	170x90	150
1005.48	1.1/2"	176x90	175
1005.60	2"	190x106	200

## ITHO-CAL 1006



with PN 16 flanged formation.

It can be used on industrial plants or appliances.

code	DN	Length x Ø mm.	capacity ~ Litres/min.
1006.05	50	260x175	320
1006.08	80	260x250	500
1006.10	100	260x294	650

## how and where to install the ITHO-CAL

ITHO-CAL must be installed on the incoming cold water pipeline of the appliance you want to protect. Up stream from the device install a non-return valve to stop the treated water from flowing back into the drinking water mains. The pressure helps the induced electric charges in the water to leak therefore the device must be installed down stream from the pump.

### PROTECTION OF INDUSTRIAL PLANTS OR APPLIANCES

ITHO-CAL can be used in so many ways that it is not possible to mention them all:  
 In all cases where an example is not shown, install ITHO-CAL on the cold water pipe as near as possible to the heating body.

### ► Some examples and where and how to install the device

#### PROTECTION OF COLD WATER MAINS

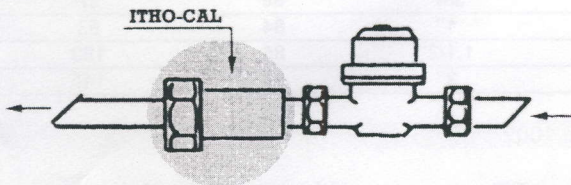


FIG. 1

ITHO-CAL must be installed after the meter.

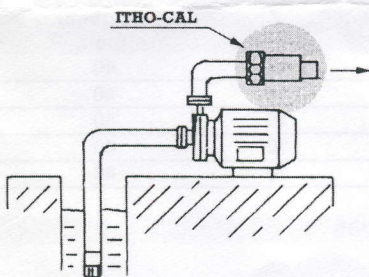


FIG. 2

ITHO-CAL must be installed at the pump outlet.

#### PROTECTION OF WATER HEATER (accumulation, electric and gas) WASHING MACHINES, DISHWASHERS – etc

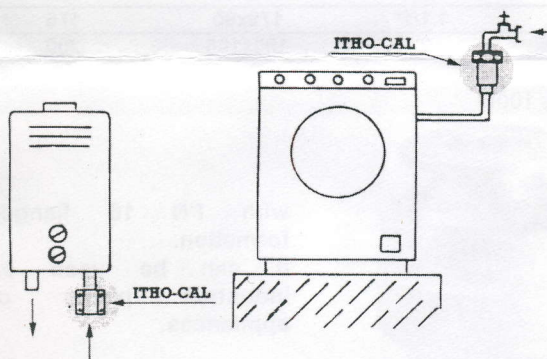


FIG. 3

ITHO-CAL must installed on the incoming cold water pipe.

### PROTECTION OF BOILER WITHOUT RE-CIRCULATION OF HOT WATER

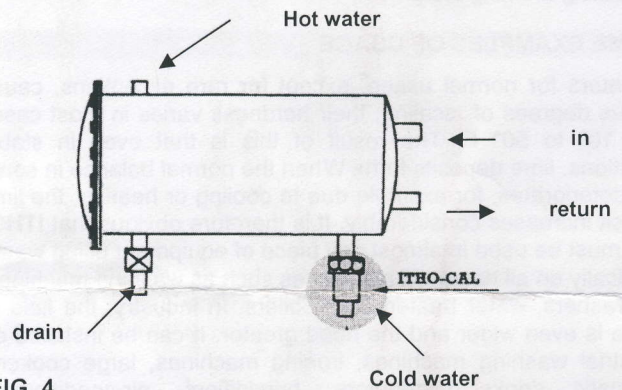


FIG. 4

ITHO-CAL must be installed on the incoming cold water pipe. Provide the pipe fitting for drainage at the lowest point of the boiler.

### PROTECTION OF BOILER WITH RE-CIRCULATION OF HOT WATER

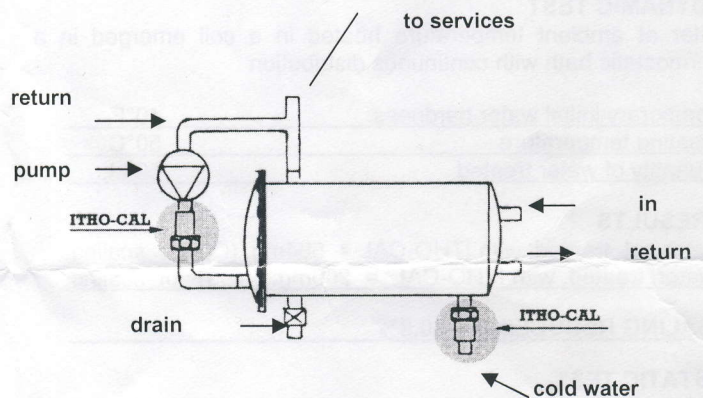


FIG. 5

Two ITHO-CALS must be installed, one on the incoming cold water pipe and one on the pump outlet on the return circuit. Provide the pipe fitting for drainage at the lowest point of the boiler.

### PROTECTION OF BOILERS WITH AND WITHOUT THE PRODUCTION OF HOT WATER AND WALL-MOUNTED BOILERS

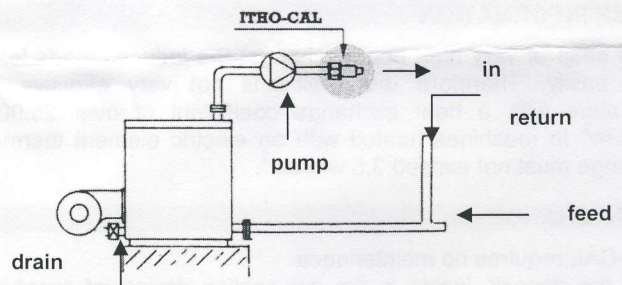


FIG. 6

ITHO-CAL must be installed on the incoming pipe after the pump. To protect any boiler or sanitary water production coil (for wall-mounted boilers) follow the descriptions in figures 3.4.5.