



**50 YEARS** PROTECTING LIVES AND PROPERTY

---



**FIRE SUPPRESSION SYSTEMS  
KITCHENS PROTECTION**



- I. Kitchen protection*
- II. The product: Total K*
- III. Design*
- IV. Components*



## Common applications, **When** to use?

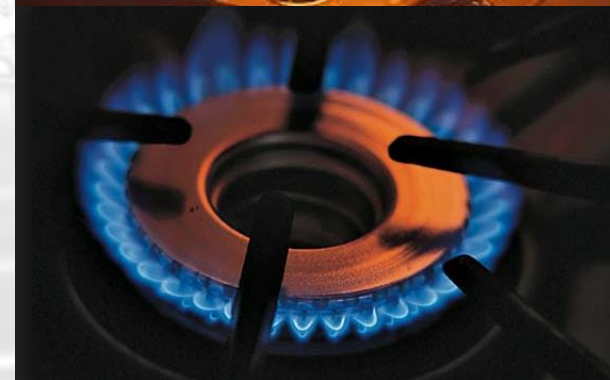
- Commercial kitchens
- Industrial fryers
- Restaurants
- Show kitchens
- Catering



## Hazard characteristics

### **Why** to use?

- Oil and fats
- High temperatures
- Hot surfaces
- High concentrations of fuels, flammable gases and products
- Gas supply
- Healthy oils: lower auto ignition temperatures





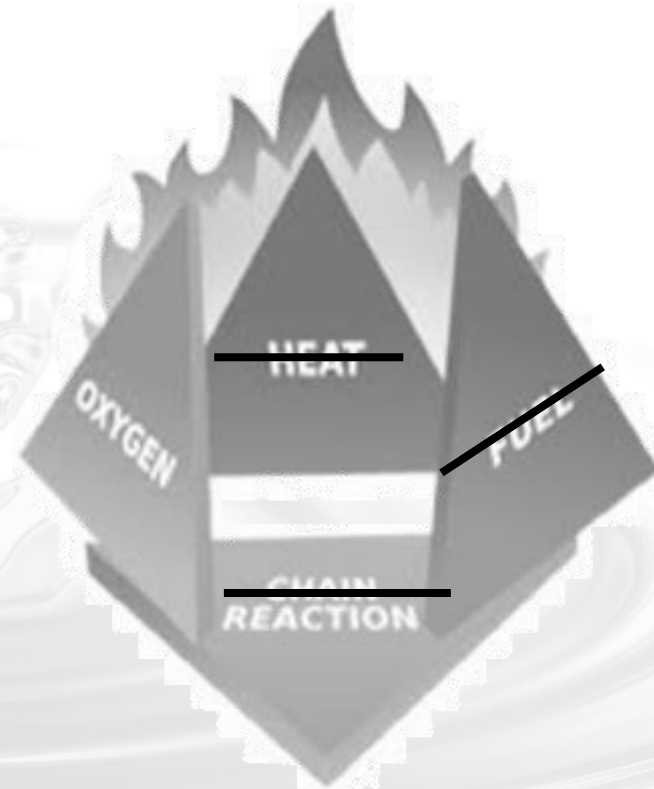
## Design

### **Why** to use **SIEX**?

- ✓ We need fast action and great effectiveness
- ✓ Easy to clean → minimum downtime
- ✓ Non-toxic, harmless
- ✓ Additional devices (safety): pneumatic gas shutdown
- ✓ Growth control: no fire spreading

## TOTAL K

- Wet chemical, aqueous solution
  - Chain reaction break
  - Heat reduction
  - Saponification: soap/foam is produced



## TOTAL K

- **FLEXIBILITY**

- Range of cylinders: 6, 16 and 25 liters
- Nozzles adapted to each hazard
- Detection:
  - › electrical,
  - › thermal-mechanical,
  - › thermal-pneumatic,
  - › manual (direct / remote)
- Suitable for both new and old kitchens → Renovations

## TOTAL K: Design steps

- Pre-engineering system
  - Standard: NFPA 17A
- UL listing pending (2018)



## 1. List the hazards and choose the nozzles

(5 types, adapted to each hazard)

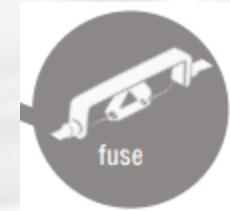
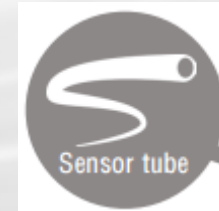
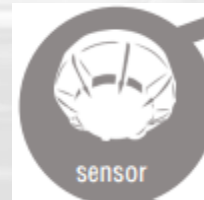
| Nozzle type | Aplications  | Caudal / Flow unit |
|-------------|--|--------------------|
| TKD1C       | Ducts, radiant gas                                   | 1                  |
| TKD2G       | 4 burners, griddles (L),                             | 2                  |
| TKD2K       | Fryer, grill, griddles (M)                           | 2                  |
| TKD15C      | Big ducts, coal broiler,                             | 1,5                |
| TKD1P       | hood (3m), griddles (S), 2 burners, 3 burners (2No.) | 1                  |

## 2. Calculate total agent & choose the cylinder

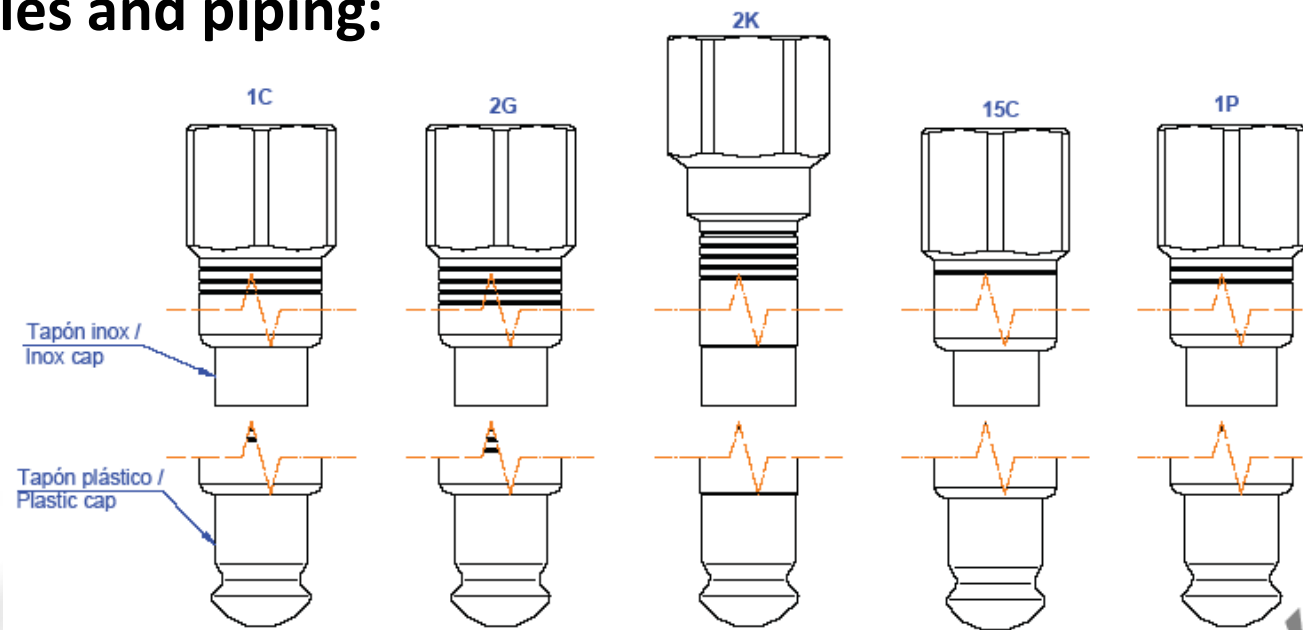
| TK-6 | TK-16 | TK-25 |
|------|-------|-------|
| 5    | 13    | 20    |

## 3. Choose detection

- Fuel & energy supply must be cut down
- Gas shutdown recommended

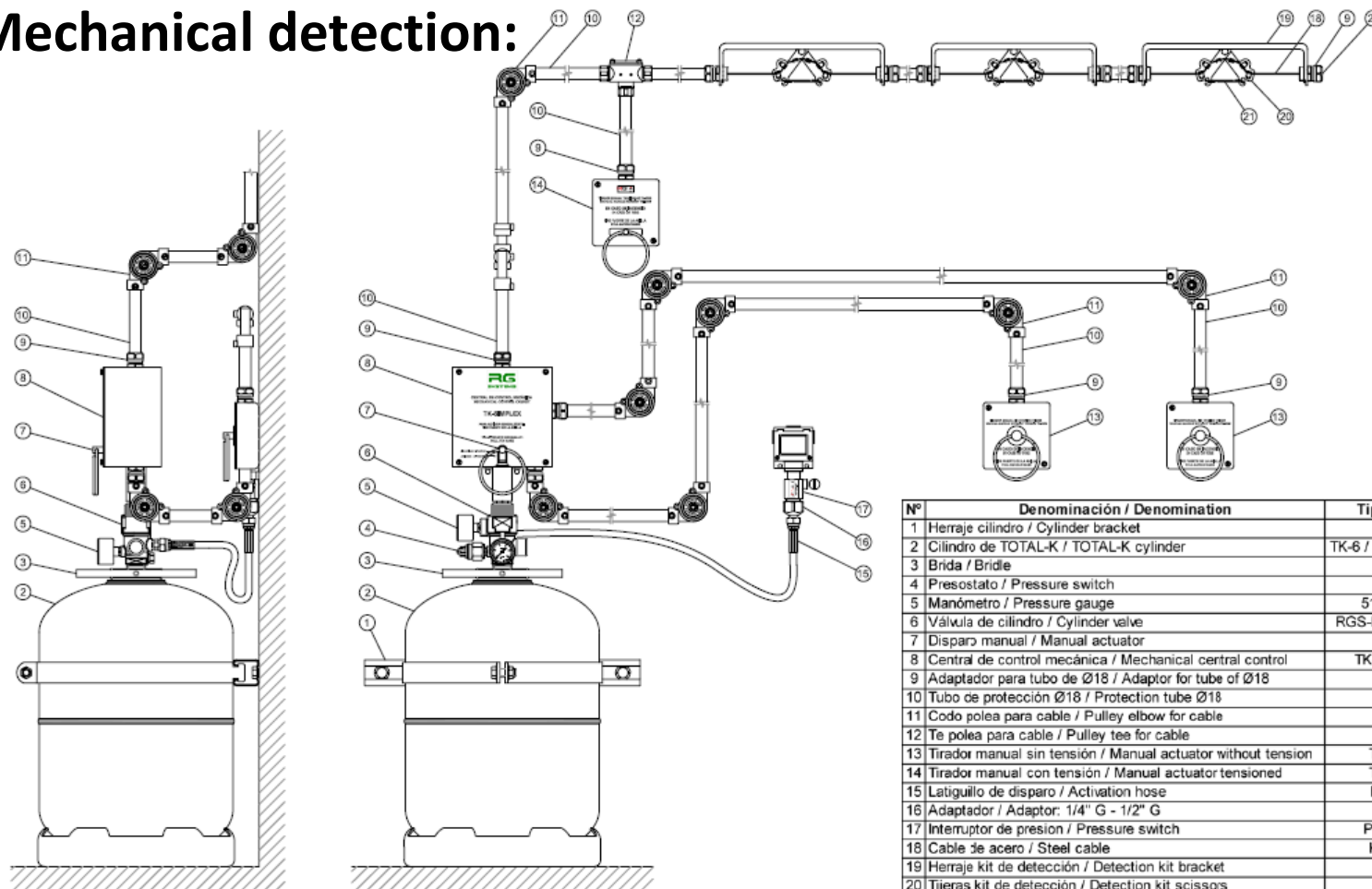


## Nozzles and piping:



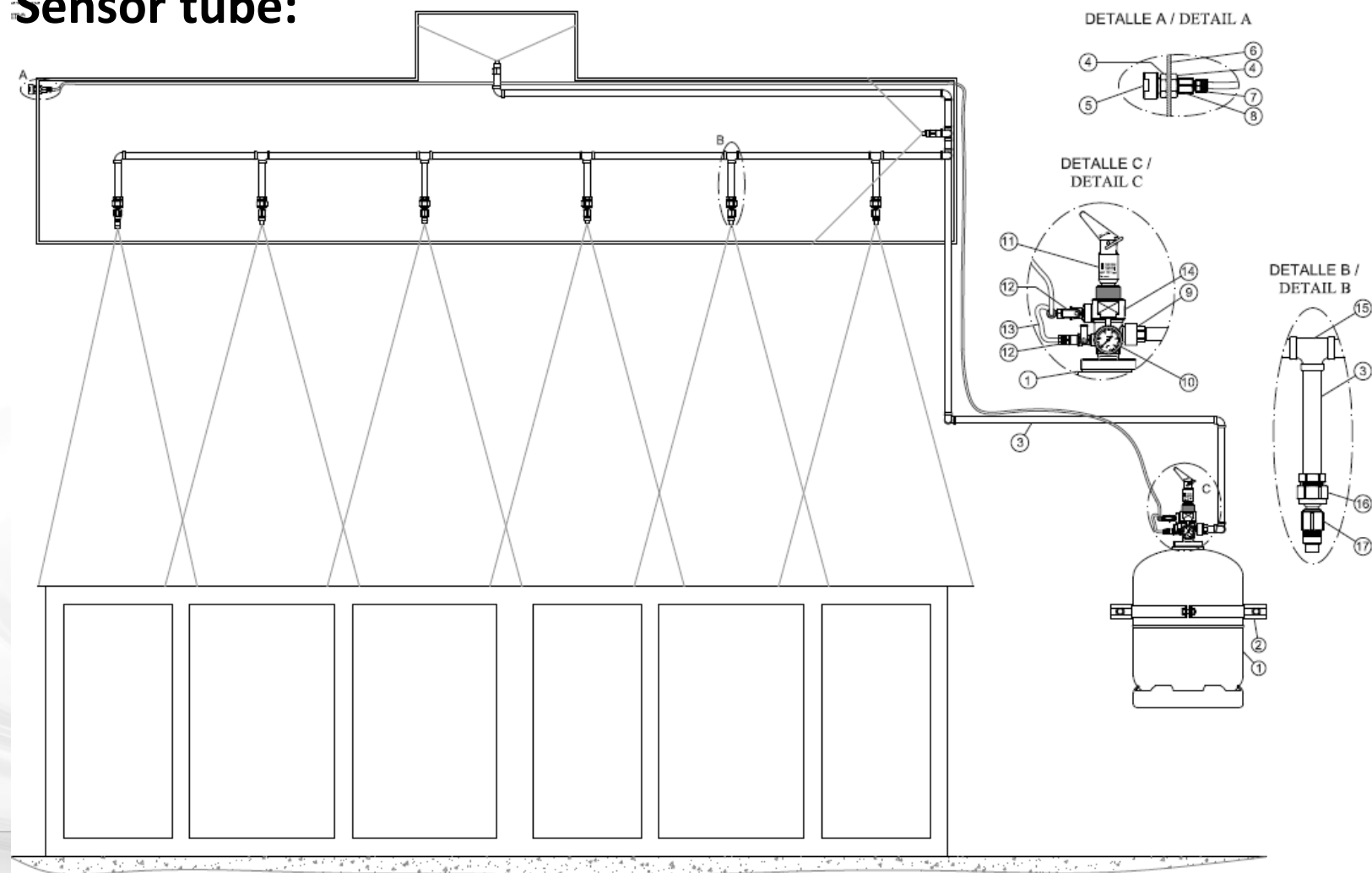
| Numero de caudales /<br>Number of caudals | Acero negro<br>Tamaño tubería /<br>Black steel – Pipe size | Acero inoxidable<br>Tamaño tubería /<br>Stainless steel – Size pipe |
|---|--|---|
| 1 – 2                                     | 1/4"   | - cm  |
| 1 – 11                                    | 3/8"   | Ø ext. 15 mm  |
| 12 – 18                                   | 1/2"   | Ø ext. 18 mm  |
| 18 – 30                                   | 3/4"   | Ø ext. 20 mm  |
| 30 - 48                                   | 1"   | Ø ext. 25 mm  |

## Mechanical detection:

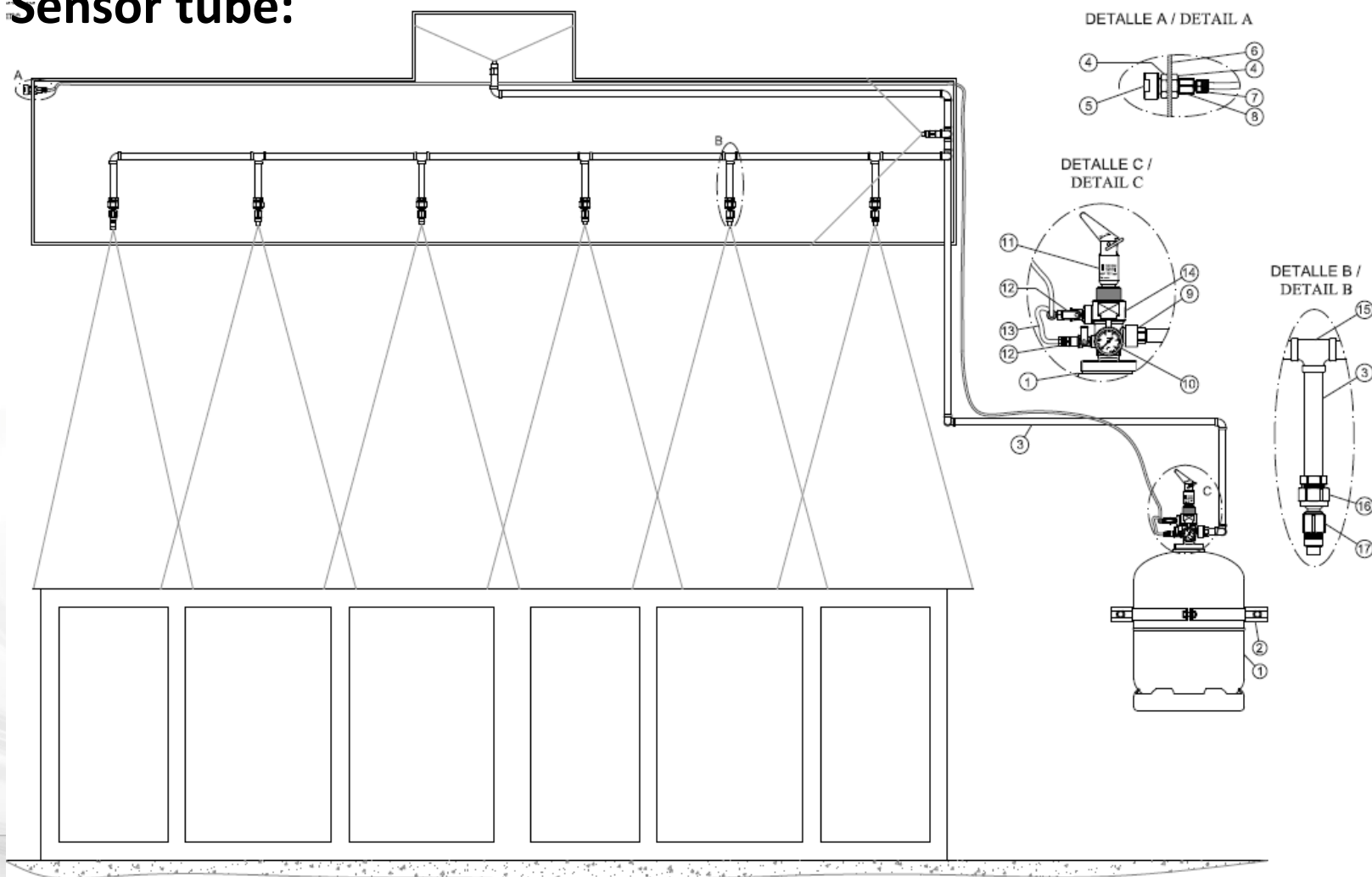


| Nº | Denominación / Denomination                                  | Tipo / Type          |
|----|--|----------------------|
| 1  | Herraje cilindro / Cylinder bracket                          |                      |
| 2  | Cilindro de TOTAL-K / TOTAL-K cylinder                       | TK-6 / TK-18 / TK-25 |
| 3  | Brida / Bridge   |                      |
| 4  | Presostato / Pressure switch                                 |                      |
| 5  | Manómetro / Pressure gauge                                   | 5140-PXXX            |
| 6  | Válvula de cilindro / Cylinder valve                         | RGS-MAM-12-3TK       |
| 7  | Disparo manual / Manual actuator                             |                      |
| 8  | Central de control mecánica / Mechanical central control     | TK-SIMPLEX           |
| 9  | Adaptador para tubo de Ø18 / Adaptor for tube of Ø18         |                      |
| 10 | Tubo de protección Ø18 / Protection tube Ø18                 |                      |
| 11 | Codo polea para cable / Pulley elbow for cable               | TK-CP                |
| 12 | Te polea para cable / Pulley tee for cable                   | TK-TE                |
| 13 | Tirador manual sin tensión / Manual actuator without tension | TK-DMS               |
| 14 | Tirador manual con tensión / Manual actuator tensioned       | TK-DMC               |
| 15 | Latiguillo de disparo / Activation hose                      | FH-6PO               |
| 16 | Adaptador / Adaptor: 1/4" G - 1/2" G                         |                      |
| 17 | Interruptor de presión / Pressure switch                     | POINPRE              |
| 18 | Cable de acero / Steel cable                                 | KWR-50               |
| 19 | Herraje kit de detección / Detection kit bracket             | TK-KIT               |
| 20 | Tijeras kit de detección / Detection kit scissors            | TK-KIT               |
| 21 | Fusible térmico / Fusible link                               | TK-KIT               |
| 22 | Final de línea / End of line                                 | TK-FL                |

## Sensor tube:

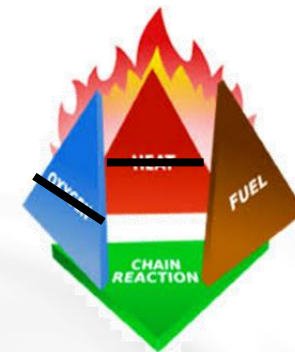
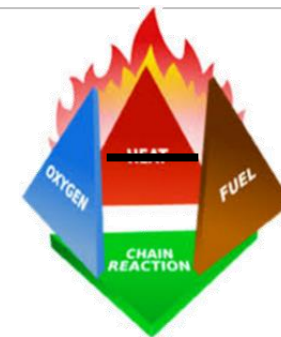


## Sensor tube:





- Carbon dioxide:
  - Toxic for humans
  - Local application system
- Water mist
  - Expensive
  - Local application
- Other wet-chemicals:
  - Each manufacturer has its own mix: different effectiveness.  
Ansul, Pyrochem, Kidde, Amerex, Minimax (foam)



---

THANK YOU FOR YOUR ATTENTION

