



WARNING: BEFORE PROCEEDING, PLEASE READ CAREFULLY THE SAFETY INFORMATIONS PROVIDED BY THE “DTC CE MANUAL”

Preliminary Installation Guide

Rev1.9

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Introduction



The system consists of:

- ✓ DTC system(main metal structure with wheels), where the electrical, pneumatic and electronic is located
- ✓ Two sheaths with industrial connectors
- ✓ Two camera housings with pneumatic opening
- ✓ Two brackets for the support of the enclosures

The DTC device installation requires the analysis and implementation of the following points:

1. Positioning of DTC camera housing support brackets
2. Positioning of DTC System
3. Choosing DTC sheaths path
4. Providing of DTC power supply
5. Providing of DTC Air Supply
6. Supplying electrical input signals to DTC
7. Wiring signals in DTC control cabinet

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The order of the points listed above reflects the actual order of installation. It is therefore advisable not to proceed to the next step until you have finished earlier.

If you encounter problems in the sequence suggested above, please contact the Inprotec Irt technical support (support@inprotec-irt.it , +390266595977).

For more technical details and safety information consult the DTC CE technical manual.

1. Positioning of DTC camera housing supports

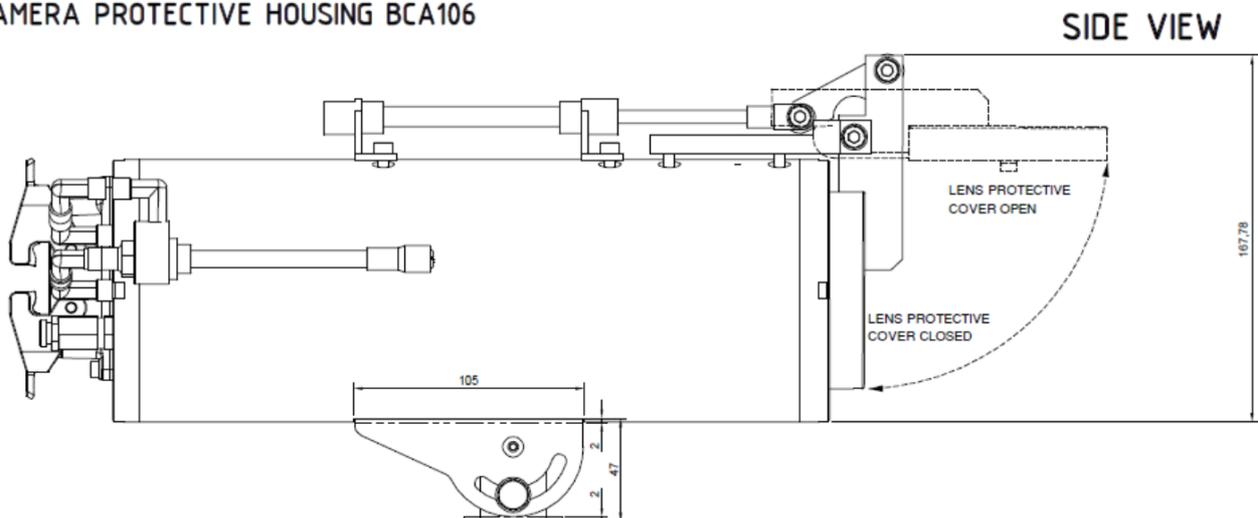


The first step is to decide the location of the cameras that acquire thermal images of the fixed and movable molds. This results in proper placement and installation of the DTC housing supports.

The following are the measures of the brackets and some examples of installations.

Housings)

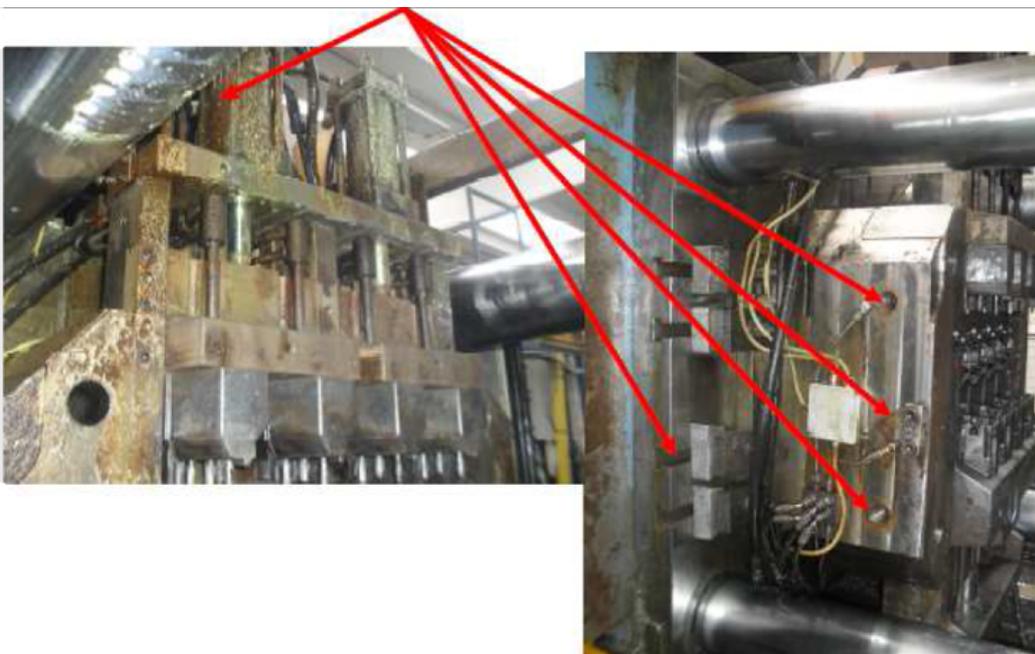
CAMERA PROTECTIVE HOUSING BCA106



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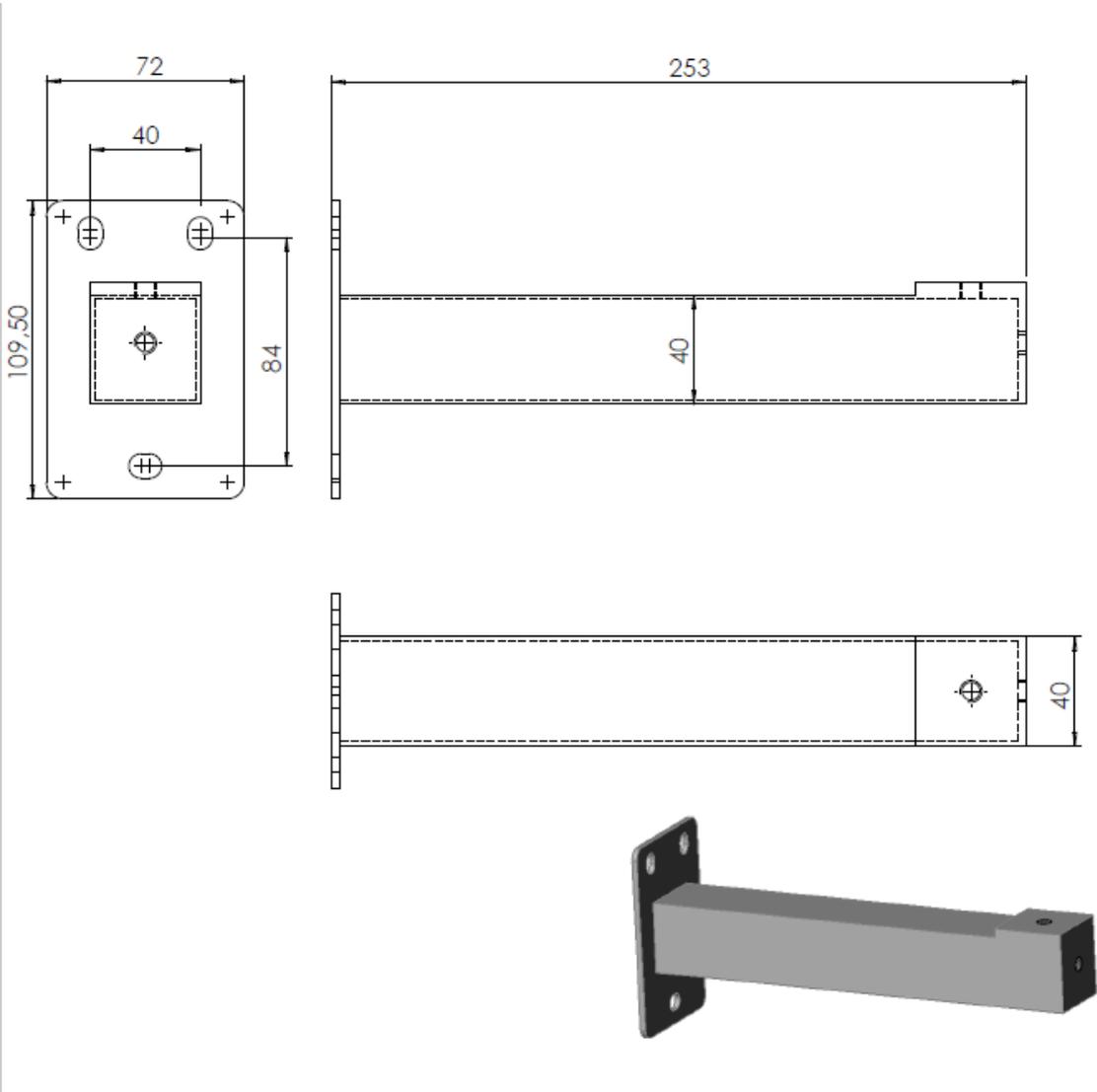
candidate places for housing supports..



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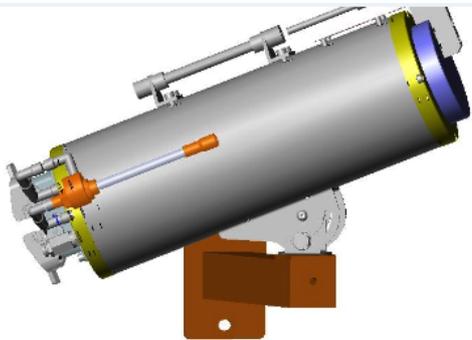
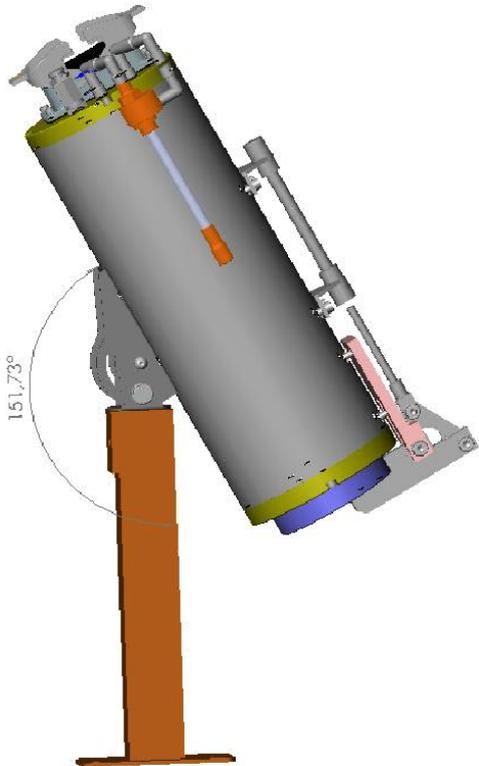
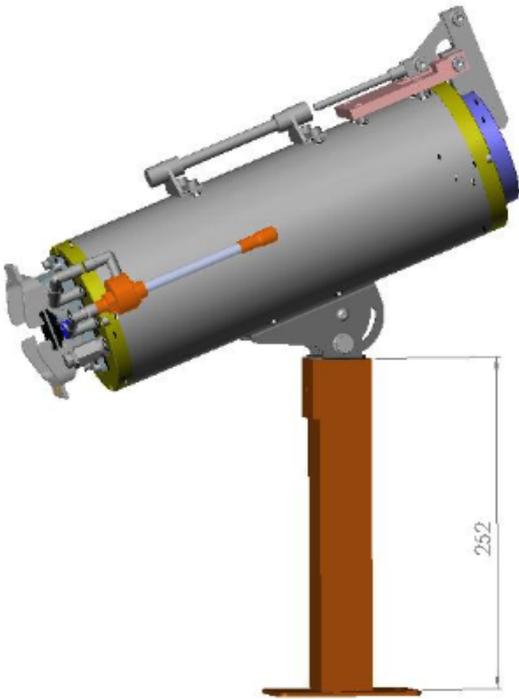
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Supports)



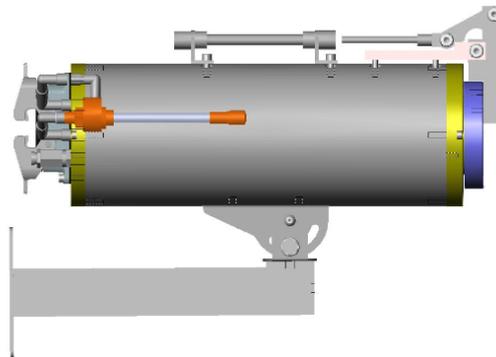
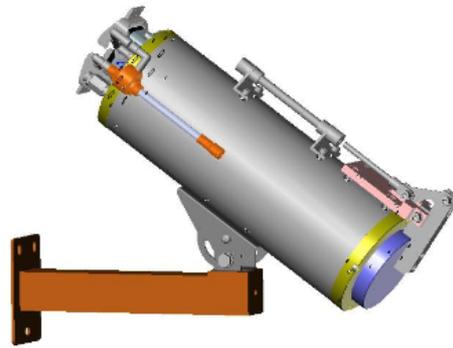
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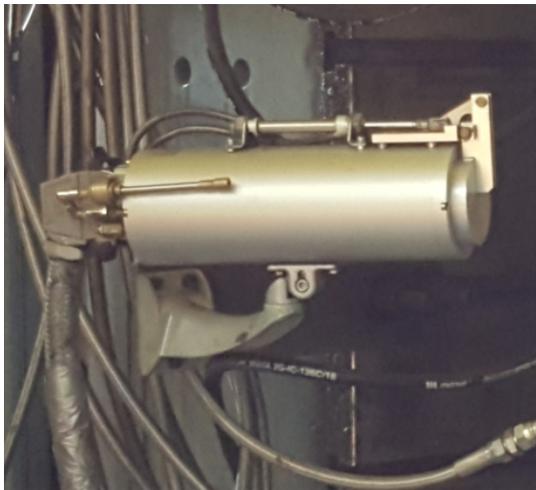
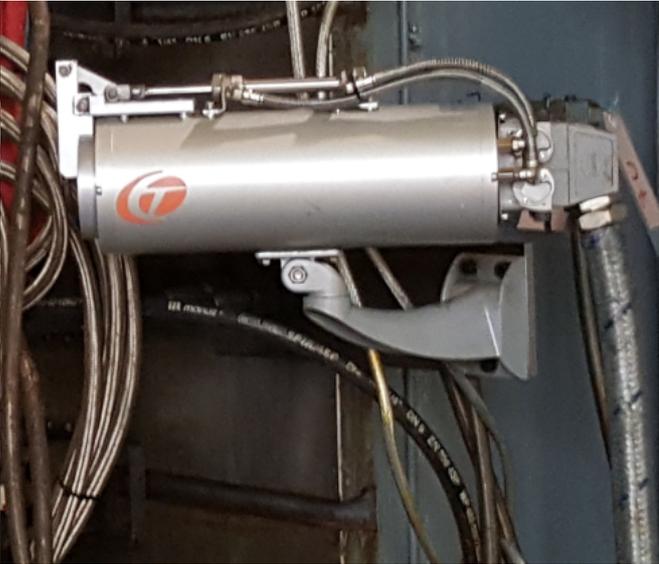
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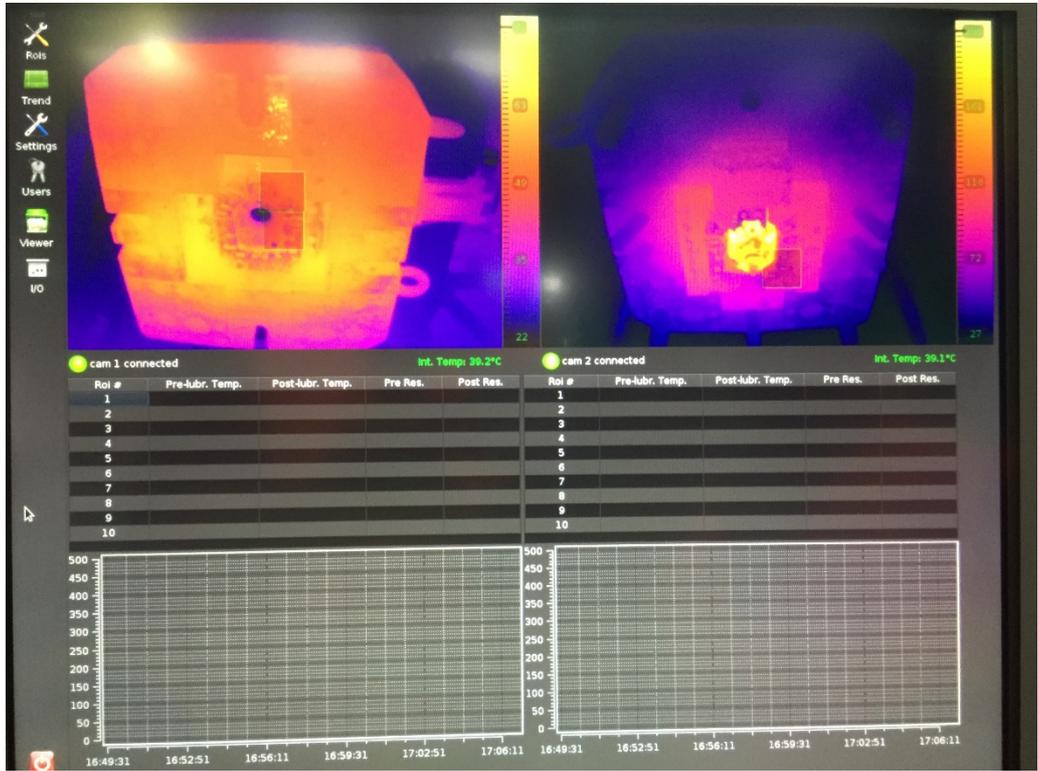
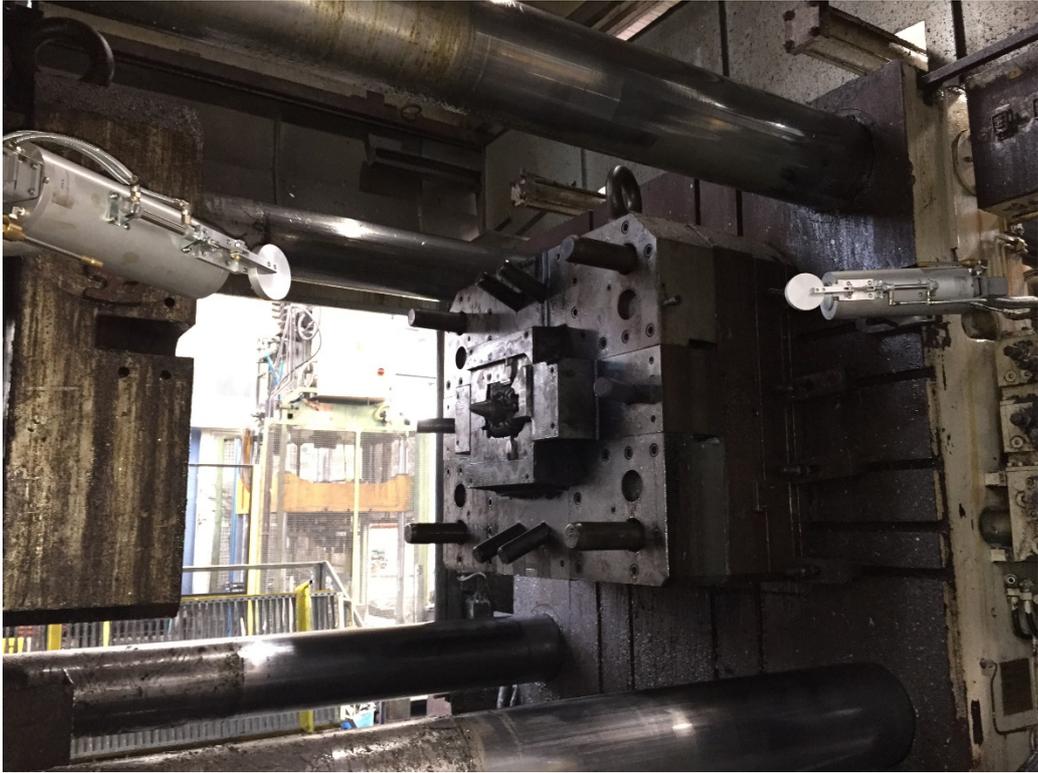
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2.DTC System Positioning

The choice of the location where DTC device will work must take into account the following factors:

- operativeness and safety of those involved in the mold machine
- comfortable access and consultation of thermographic data
- availability of electrical and pneumatic power
- availability of I/O signals provided by the mold machine
- length and location of the DTC connection sheaths

Usually the DTC device is placed at the side of the mold machine control framework, so that the operator is able to act on processing parameters in accordance with the thermographic data detected by the DTC.

Examples of DTC installations:



3. DTC Sheaths positioning

The route chosen for the DTC connection sheaths must take several factors into account:

- Avoid too tight bend radius (minimum radius 30 cm)
- Avoid, as far as possible, the wear by rubbing of the sheath (movable part).
- Avoid crushing of the sheaths
- Avoid positions close to heat sources that can lead to exceed 70° C temperature

Installation examples:



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4.DTC power supply

To power the DTC device requires the following electrical parameters:

Supply voltage	240Vac / 1ph - 50Hz
Maximum short-circuit current	6kA

The power connector required is:

CE Industrial type female 16A 2P + T



Some installations at our customers:



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5.DTC Air Supply

To power the pneumatic circuit of DTC, requires the following operating parameters:

Supply pressure 4 to 6 bar

Air hose diameter 10mm



IMPORTANT NOTE:

The internal working pressure of the DTC is limited to 2 bars by a special valve, located in the rear of the DTC. If the cameras shutter do not open or opens too slowly, it is possible to regulate DTC working pressure acting on the valve (see following picture).



*The working pressure, however, should never exceed **3 bar**. A pressure too high may damage the germanium protective glass (very fragile), due to strong vibrations during the shutter closing.*

6. Supplying electrical input signals to DTC

In order the DTC device is able to properly record the thermographic data of a die casting, it is necessary to provide two signals coming from the mold machine to indicate the two time instants in which to capture images:

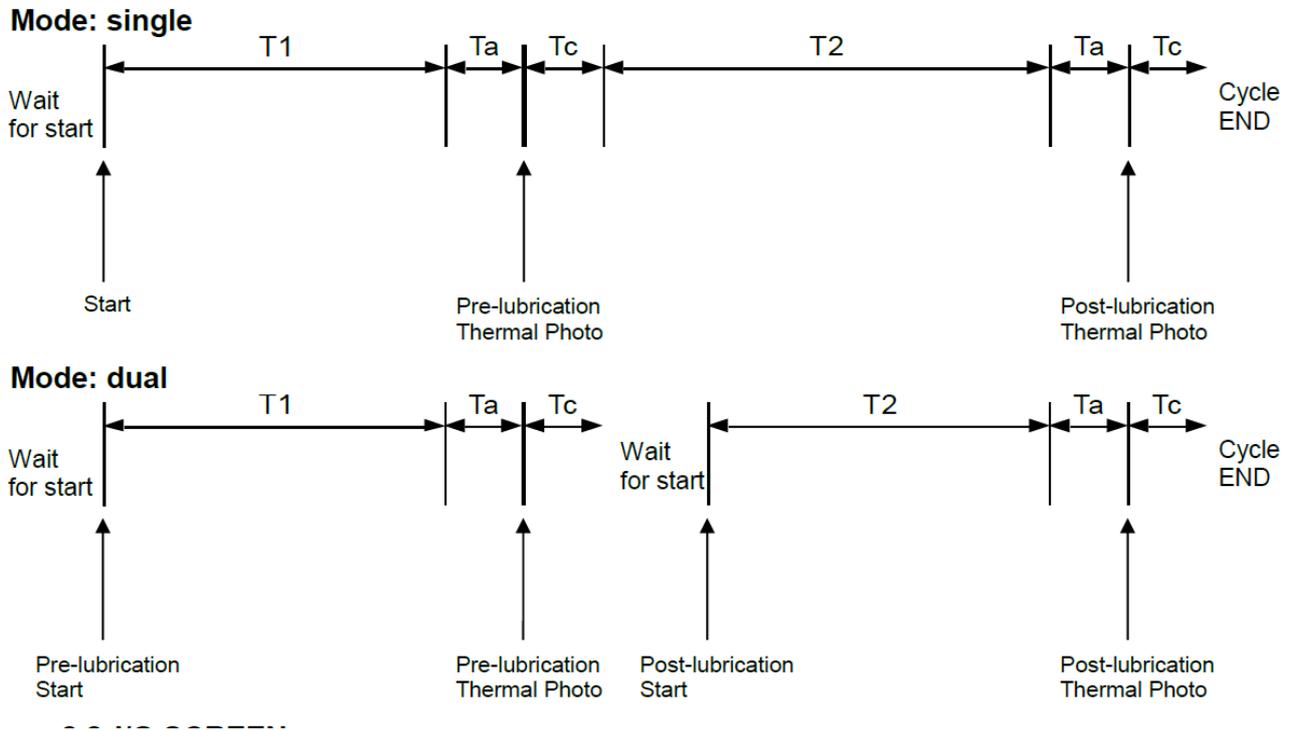
Start pre-lubricating , indicates the DTC is at a stage prior to the lubricating stage. Suggested signals are then "mold open" and "piece out of workzone".

Start of post-lubricating, indicates the DTC is in a stage subsequent to the lubricating stage. The suggested signals in this case are "mold open" and "lubricating robot out of workzone ".

It sometimes happens that for technical reasons or for processing convenience, it is not possible to get both signals. You can then use the "single" working mode, which requires only the start pre-lubricating signal. The second signal is then constructed by adding to the "time 1" (T1), the parameter "Waiting time 2" (T2), both set using the DTC operator panel.

Note: *The cycle time is not always constant. It can for example be prolonged due to the delay of the lubricating robot inside of the mold. The "double" mode is therefore the only one that ensures a more successful capture of thermal images.*

Below are shown the two working cycles, single and double.

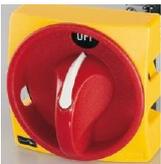


Ta, Tc = shutter opening / closing time (set by the operator)

7. Wiring signals in DTC control cabinet

The connection of the input signals (as explained in step 6) to the DTC electrical panel must be carried out by qualified personnel according to the planned safety procedures.

It is necessary to turn off the power to the DTC device..

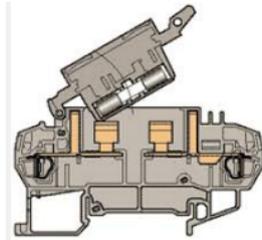


..then open the cabinet using the appropriate key.

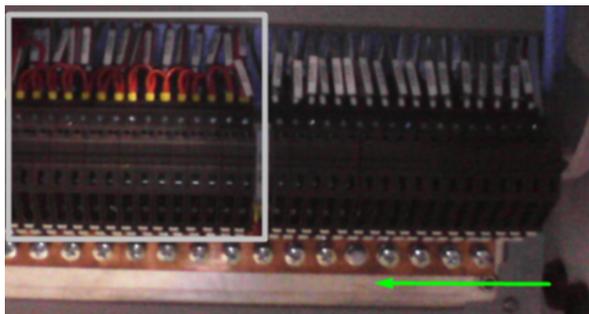
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Open fuse holders of the input terminal before the signal connection. They will then be closed once input have been successfully connected, so as to preserve the fuse from possible damage due to short circuits.



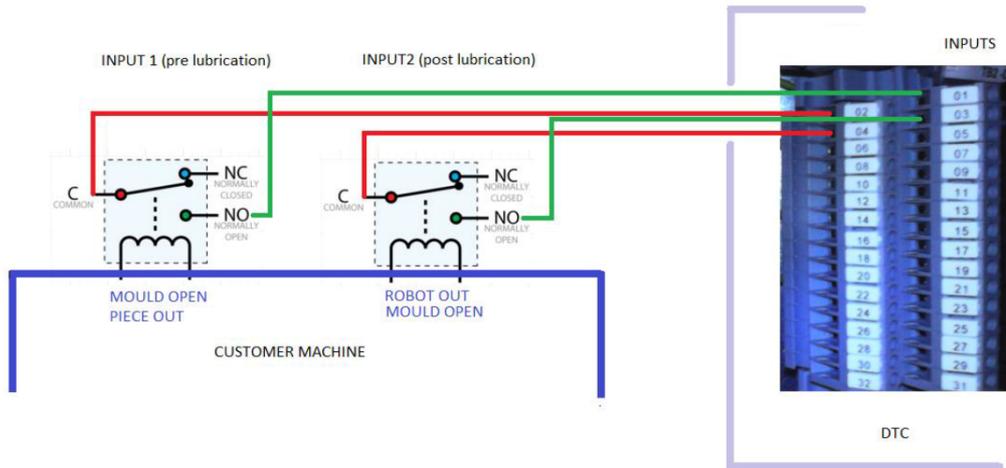
Insert the electrical cables into the cable outlet (bottom-right part of DTC) and connect them to the input marked with "01" (Input 1, pre-lubricating signal) and "03" (Input 2, post – lubricating signal).



The type of signal required is a "dry contact" : to have a logical value "1" requires the closing of a circuit between the two input terminals ("01" <--> "02" for input 1; "03" <--> "04" for input 2) for a time of al least 100 ms.

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Example, using standard Relays..

