

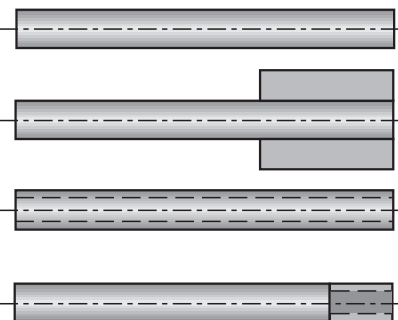
Tevi termice standard

INFO

- S3200/ ... (SMC ...)
- S3201/ ... (SMX ...)
- S3202/ ... (BSMC ...)
- S3203/ ... (BSMX ...)
- S3204/ ... (ASMC ...)
- S3205/ ... (ASMX ...)
- S3206/ ... (SESMC ...)

Cylindrical Standard Heat Pipes

INFO

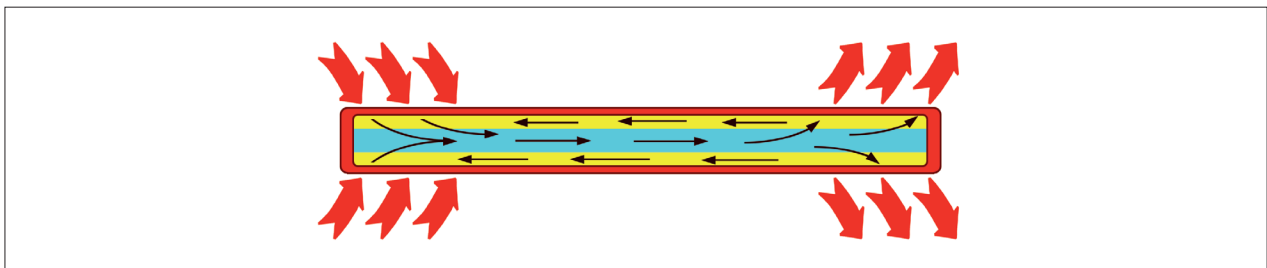


Actionarea tevelor termice:

O teava termica cuprinde un manson metalic gol sigilat, care contine o captuseala poroasa capilara si este umplut cu lichid de lucru. Lichidul de lucru preferat este de obicei apa de inalta puritate.

Operation of heat pipes:

A heat pipe comprises of a sealed evacuated metal envelope containing a porous capillary action quick lining which is charged with a working fluid. The preferred working fluid is usually high purity water.



Cand se aplica caldura pe orice punct de-a lungul suprafatei externe a tubului termic, lichidul din interior se evaporata in acest punct si se condenseaza din nou in orice alt loc unde temperatura este fractional mai mica. In acest sens capacitatea de caldura latentata a lichidului de lucru este utilizata cu mare efect, rezultand un transfer de energie foarte eficienta cu o rezistenta interna minima. Functionarea pasiva a tevelor termice nu necesita un stimulator de putere externa, cu exceptia aplicarii diferentei de temperatura „ ΔT ” a sarcinii termice.

When heat is applied to any point along the external surface of the heat pipe, the fluid inside evaporates at this point and then condenses again at any other place which is at a fractionally lower temperature. In doing so, the latent heat capacity of the working fluid is utilised to great effect, resulting in a very efficient energy transfer with minimal internal resistance. The passive operation of the heat pipes requires no external motive power except for that of the applied temperature difference „ ΔT ” of the thermal load.

Caracteristici:

- Conductivitate termica extrem de mare si raspuns rapid la sarcina termica
- Imbunatatirea timpului de ciclu
- Imbunatatirea calitatii produselor injectate din cauza temperaturii uniforme a matritei.
- Foarte usor de instalat si are un cost redus
- Simplifica proiectarea matritelor
- Fiabilitate mare si performanta constanta

Features:

- Extremely high thermal conductivity and fast response to thermal loading
- Improved cycle times
- Improved quality of moulded components due to very even mould temperature
- Very easy to install and cost effective
- Simplifies mould design
- High reliability and consistent performance

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S3200/ ... (SMC ...) – S3206/ ... (SESMC ...)

Instructiuni de montare

1. Note generale

- Gradul de eficienta este determinat de pozitia de actionare
- Cea mai eficienta conductivitate termica se realizeaza in pozitie verticala cu partea racita in sus

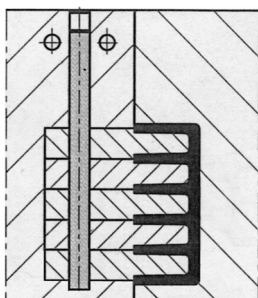
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Mounting instructions:

1. General notes

- The grade of efficiency is determined by the operating position.
- Most effective thermal conductivity is achieved in vertical position with cooled section on top.



2. Alegerea dimensiunii corecte

- In general alegeti teava termica cu cel mai mare diametru posibil ce poate fi instalata in miezul matritei sau in componentele acestuia. Rezistenta mecanica trebuie sa fie respectata!
- Lungimea de contact a tevii termice este direct proportional cu aria suprafetei de contact, acest factor ar trebui sa fie folosit pentru a beneficia de performanta termica.

Este importanta lungimea zonei de racire, se recomanda ca aceasta zona sa fie de cel putin de 0,2 x lungimea totala

2. Choosing the correct size

- Generally, choose the largest possible diameter of heat pipe that can be installed by the given mould core or component. The mechanical strength is to be observed!
- As the contact length of the heat pipe is directly proportional to its contact surface area, this factor should be used to benefit from the thermal performance

Important is the length of the cooled zone, it is recommended to have this zone at least 0,2 x total length.

3. Montarea tevilor termice

- Puneti o cantitate mica de pasta termica **S3210** pe varful tevii termice si introduceti in locatie cu o presiune usoara (mai putin de 1 kg) pana cand componentul este impins inapoi in golul din locatie.
- Odata introdus complet, rotiti cu 360 grade si retrageti usor pentru raspandirea uniforma a componentei.

3. Mounting of heat pipes

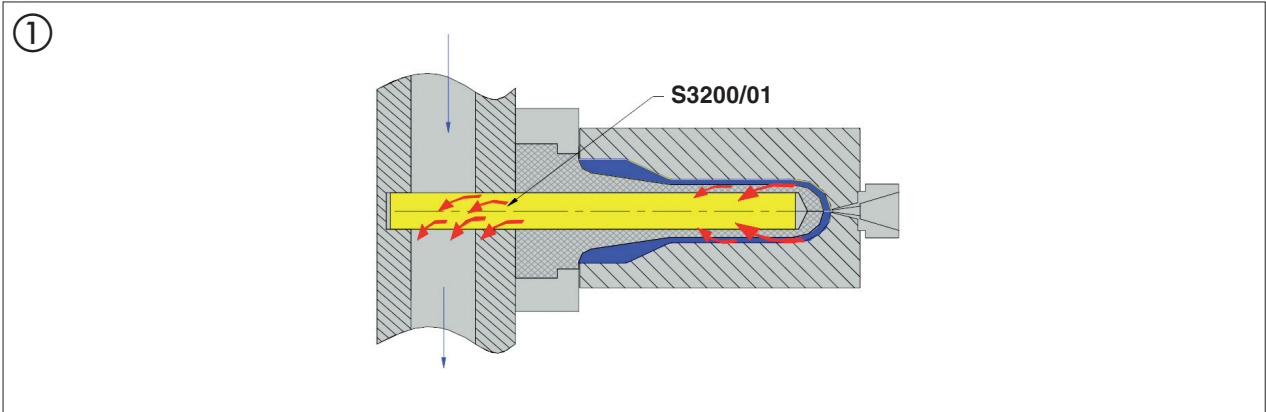
- Place a small amount of thermal interfacing paste **S3210** on the tip of heat pipe and insert it into the bore applying only light pressure (less than 1kg) until the compound is extruded back into the air gap of the bore.
- Once fully inserted, rotate by 360° and withdraw slightly for spreading the compound evenly.

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Racirea miezurilor cu apa:



Datorita curgerii rapide a lichidului de racire peste teava termica, racirea miezurilor in aplicatiile matritelor cu mai multe cavitati sunt uniform echilibrate.

Conductivitatea termica superba a tevilor termice se imbunatateste cu cresterea temperaturii de functionare. Ciclul transferului termic devine mai rapid cu cresterea diferentei de temperatura dintre mediul de racire si teava termica.

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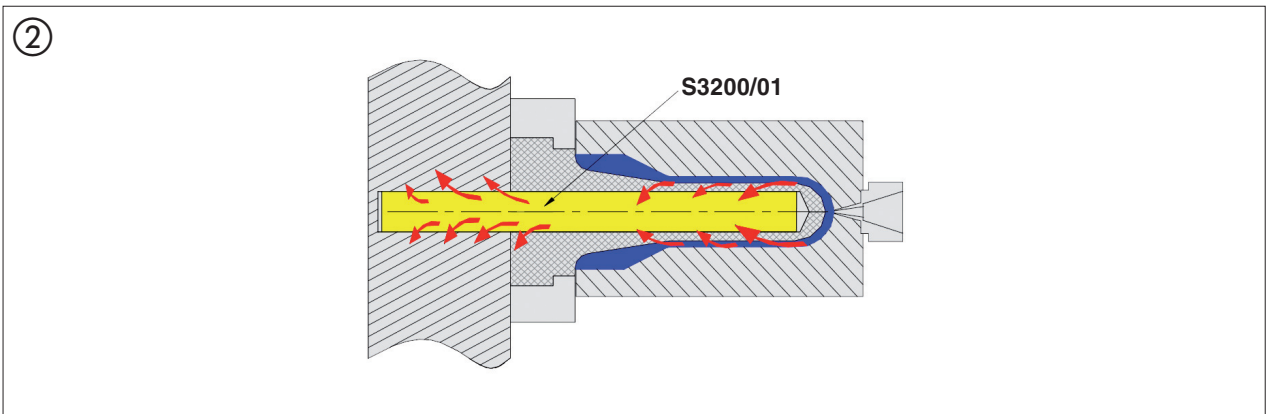
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Core cooling with water:

Due to the rapid flow rate of coolant flowing across heat pipe, cooling of cores in multi-cavity moulds applications are evenly balanced.

The superb thermal conductivity of heat pipes improves with increased operating temperature. Because their internal heat transfer cycle becomes faster with rising temperature difference between coolant and heat pipe.

Racirea miezurilor fara apa:



In unele cazuri, de exemplu la matrite unde nu sunt permise canale de racire, astfel de componente pot fi aplicate pentru a disipa caldura in placa miezurilor, acolo unde racirea poate fi asigurata.

Core cooling without water:

In some cases, i.e. mould design does not allow for cooling channels supporting the heat transfer of heat pipes, such components can still be applied to dissipate heat into the core plate where cooling is provided.

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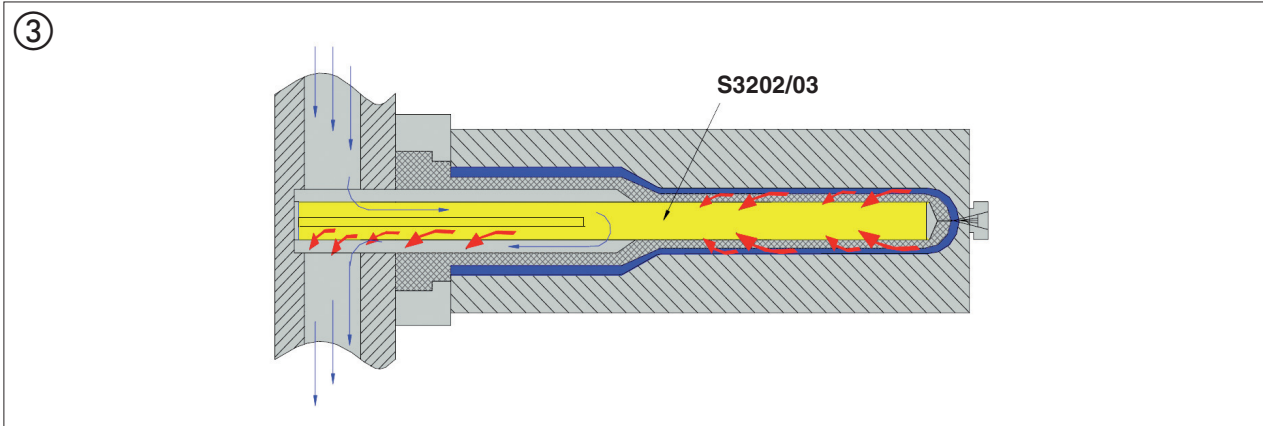
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Teava termica cu aripioare:

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Baffled heat pipes:



Tevile termice cu aripioare sunt utilizate de preferinta la racirea miezurilor cu diametre treptate.

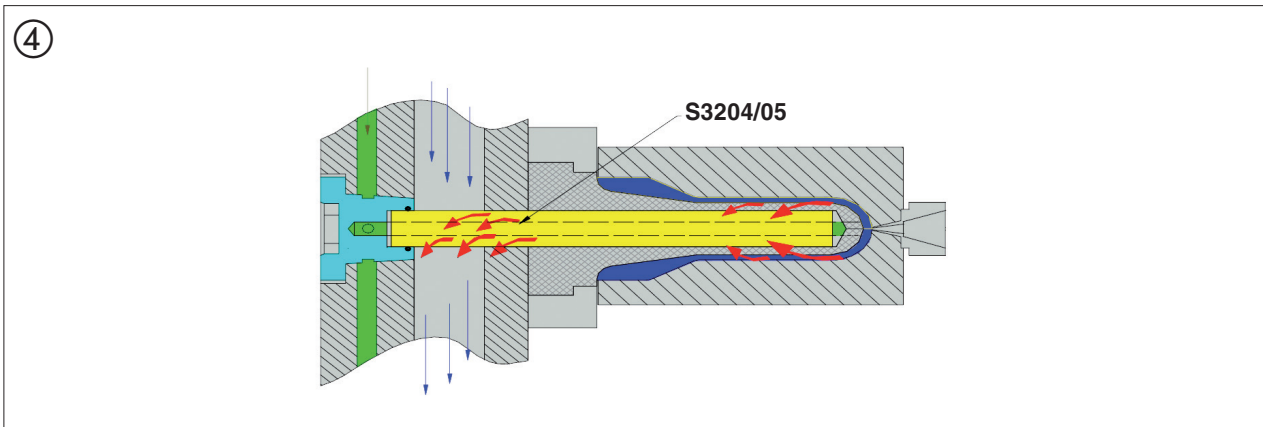
Aripioarele sunt atasate de teava termica pentru a creste lungimea de racire expusa a tevii termice in apa, calea curgerii redirectionand curgerea in spatiul disponibil in interiorul diametrului mai mare al miezului.

Baffled heat pipes are preferably used for cooling of stepped diameter mould cores.

Baffled plates are attached to the heat pipe to increase the exposed cooling length of the heat pipe in the water flow path diverting the flow into the available space within the larger internal core diameter.

Tevi termice inelare:

Annular heat pipes:



Anumite aplicatii necesita tevi termice care au o gaura de deschidere axiala, dupa cum se arata in Fig.④.

Cu aceasta constructie este de asemenea posibila ajutorarea desprinderii produselor prin utilizarea aerului comprimat in interiorul tevii termice.

In mod similar, o alta cerinta frecventa este de a furniza o aerisire adecvata pentru a satisface o degazare tipica anumitor polimeri in timpul procesului de injectie.

Certain applications require heat pipes to have an axial tubular open bore, as shown in Fig.④.

With this design it is also possible to assist demoulding action by using compressed air through the centre of heat pipe.

Similarly, another frequent requirement is to provide appropriate core ventilation to cater for the typical degassing of certain polymers during moulding process.