CASTING – MACHINE MOULDING

1. Advantages
There are the following advantages using this method:
- higher work productivity
- better quality castings
- smaller percentage of defective work

2. We do machine moulding by these operations:
   a) pressing
   b) jolting
   c) slinging

3. Let’s introduce here only one method:

3.1 Pressing
In the following pictures you can see two basic pressing methods:

In both pictures there are:
1 … moulding box
2 … auxiliary box
3 … pattern
4 … pattern plate
5 … press plate
4. **Thermal treatment of castings**

*Raw castings* are not useable very much. We have to *improve* their mechanical properties and structure.

We do this by:

- **Annealing** for reducing internal *tension*
- Normalizing **annealing** for uniform structure
- Soft **annealing** (it is not done in every case)
- **Hardening** and **tempering** for alloys to increase *hardness*
- **Refining** for products from steels for *castings* to increase *hardness*

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Sources: M. Hluchý, J. Kolouch, R. Paňák – Strojírenská technologie 2, M. Hluchý a kolektiv – Strojírenská technologie 2
VOCABULARY

- alloy: litina
- annealing: žíhání
- casting: slévání, lití, odlitek
- from above: shora
- from below: zdola
- hardening: kalení
- hardness: tvrdost
- improve: zlepšit
- jolting: střásání
- machine moulding: strojní formování
- moulding box: formovací rám
- pattern: model
- pattern plate: modelová deska
- press plate: lisovací deska
- pressing: lisování
- raw casting: surový odlitek
- reduce: snížit
- refining: zušlechťování
- tempering: temperování, popouštění
- tension: pnutí
- thermal treatment: tepelné zpracování

COMPREHENSION QUESTIONS
1. What are the advantages of casting – machine moulding?
2. How is machine moulding done?
3. What do you know about pressing?
4. What do you remember about the thermal treatment of casting?
1. **Criss Cross Puzzle** - 12 words were placed into the puzzle.

**Across**
4. litina
7. model
9. snížit
11. tvrdost

**Down**
1. střásání
2. forma
3. slévání
5. zlepšit
6. lisování
8. výhoda
9. syrový
10. metání

2. **Grammar corner** - Correct any mistakes in the phrases printed in bold. Tick (√) the correct sentences.

1. He doesn’t have a car **at** the moment.
2. I am loving eating out **but** it’s very expensive.
3. Do you recognize the man **in** that photo? It’s our old maths teacher.
4. Nowadays people **don’t mind paying** more for healthy food.
5. Can you answer the phone? I **talk** on my mobile.
6. I’m sorry, I don’t understand. **What does this word meaning?**
7. You look worried. **What are you thinking about?**
8. I’m not sure if we’re going skiing this weekend. **It’s depending** on the weather.
9. I think that people today eat too much unhealthy food.
10. She doesn’t come **with** us tonight because she’s tired.
3. Hidden message - 12 words were placed into the puzzle. Find the hidden message and translate.

T H E R M D A L T R I N
E A T M L E N T W M N O
Q S P U V Z Q I O H C I
M R O F I N U I P A R S
L M L A N R E T N I E N
A N N E A L I N G C A E
T T F Y A Z S F J A S T
G N I S S E R P T S E C
P R O P E R T Y C T U M
P R O D U C T I V I T Y
N R E T T A P H R N R H
G N I T L O J W G G S J

ANNEALING CASTING INCREASE
INTERNAL JOLTING MOULD
PATTERN PRESSING PRODUCTIVITY
PROPERTY TENSION UNIFORM

Hidden message

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KEY FOR TEACHERS

1. Criss Cross Puzzle

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<th>Czech</th>
<th>English</th>
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<td>výhoda</td>
<td>improve</td>
<td>zlepšit</td>
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<td>tvrdost</td>
<td>alloy</td>
<td>litina</td>
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<tr>
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<td>metání</td>
<td>casting</td>
<td>slévání</td>
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<td>lisování</td>
<td>reduce</td>
<td>snížit</td>
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<td>střásání</td>
<td>pattern</td>
<td>model</td>
</tr>
<tr>
<td>raw</td>
<td>syrový</td>
<td>mould</td>
<td>forma</td>
</tr>
</tbody>
</table>

2. Grammar corner

1 ✓ He doesn’t have a car at the moment.
2 I am loving love eating out but it’s very expensive.
3 ✓ Do you recognize the man in that photo? It’s our old maths teacher.
4 ✓ Nowadays people don’t mind paying more for healthy food.
5 Can you answer the phone? I’m talking on my mobile.
6 I’m sorry, I don’t understand. What does this word meaning?
7 ✓ You look worried. What are you thinking about?
8 I’m not sure if we’re going skiing this weekend. It’s depending depends on the weather.
9 ✓ I think that people today eat too much unhealthy food.
10 She doesn’t come isn’t coming with us tonight because she’s tired.

3. Hidden message: THERMAL TREATMENT – tepelné zpracování