

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Second School Year

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:

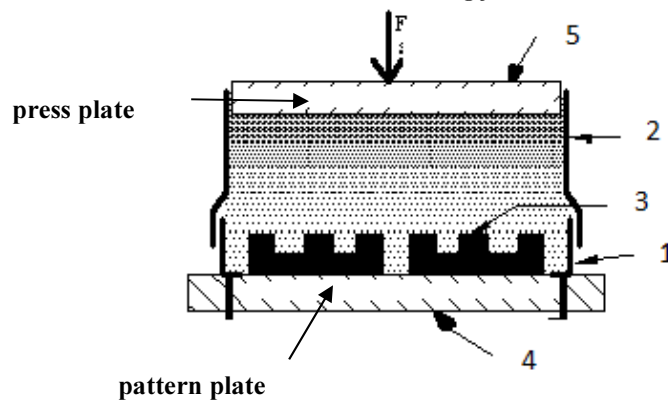
- a) *pressing*
- b) *jolting*
- c) *slinging*

3. Let's introduce here only one method:

3.1 Pressing

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

Picture 1 - Pressing from above

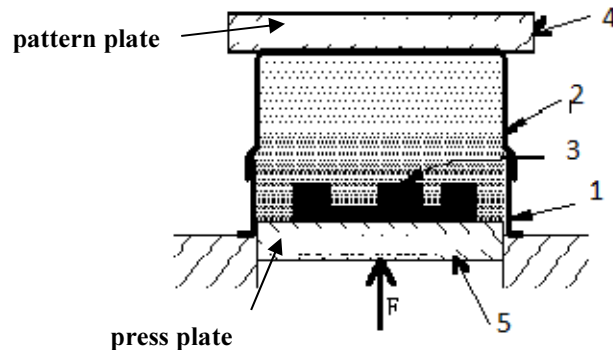


In both pictures there are:

- 1 ... *moulding box*
- 2 ... *auxilliary box*
- 3 ... *pattern*
- 4 ... *pattern plate*
- 5 ... *press plate*

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Picture 2 - Pressing from below



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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VOCABULARY

alloy	litina
annealing	žihání
casting	slévání, lití, odlitek
from above	shora
from below	zdola
hardening	kalení
hardness	tvrdost
improve	zlepšit
jolting	strásání
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?

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EXERCISES

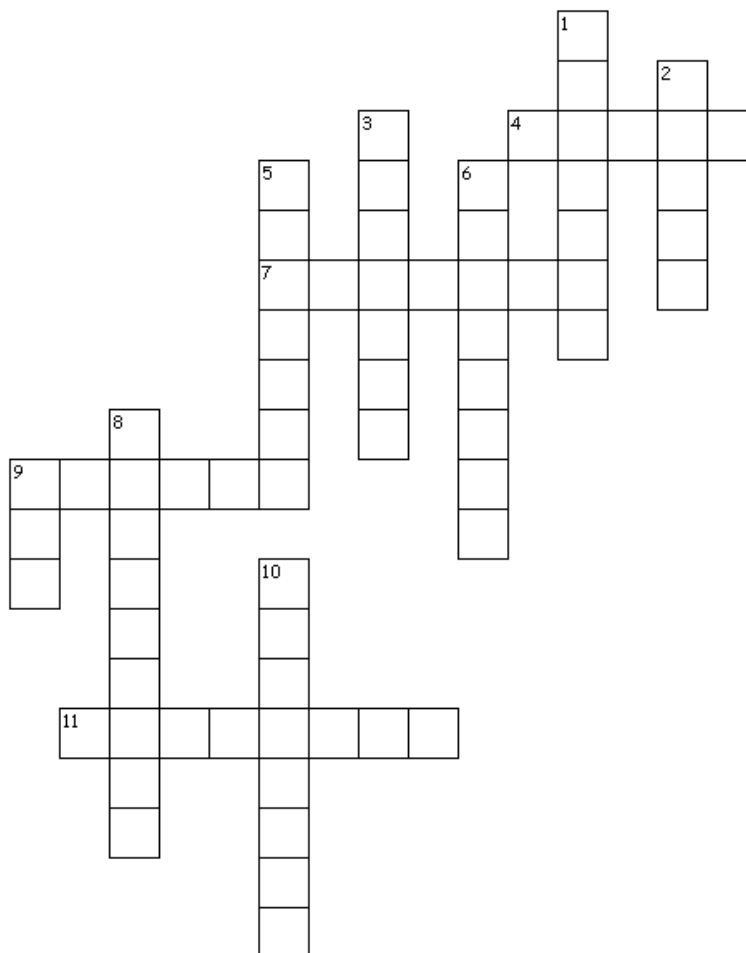
1. **Criss Cross Puzzle** - 12 words were placed into the puzzle.

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.

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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
INTERNAL
PATTERN
PROPERTY

CASTING
JOLTING
PRESSING
TENSION

INCREASE
MOULD
PRODUCTIVITY
UNIFORM

Hidden message

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KEY FOR TEACHERS

1. Criss Cross Puzzle

advantage	výhoda	improve	zlepšit
hardness	tvrdost	alloy	litina
slinging	metání	casting	slévání
pressing	lisování	reduce	snížit
jolting	strásání	pattern	model
raw	syrový	mould	forma

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**