WELDED AND RIVETED JOINTS

1. Welded joints
Welded joints are the most used undetachable joints. They are welded metal joints which are melted and pressed.

1.1 Butt end welds
In Picture 1 you can see a V butt weld which is on one plane.

1.2 Fillet welds
In Picture 2 you can see example of different fillet welds.

The advantage is for example high work productivity. The disadvantage is for example that there must be certified working staff.

1.3 Shielded metal arc welding (SMAW)
It is a manual welding process. There is an arc between a flux covered electrode and a welded object – see Picture 3.
2. Riveted joints

2.1 Definition
- They are undetachable joints which have two parts.
- They are used for heavy weldable materials.

The advantage for example is that they have more flexibility than welded joints. The disadvantage for example is that they don’t guarantee the accuracy of the position of connected components.

Rivets are standardized – see Picture 4

Picture 3

Picture 4

boiler rivet
tubular rivet
VOCABULARY

accuracy  přesnost  
advantage  výhoda  
arcs  oblouk, obloukový  
boiler rivet  kotlový nýt  
butt end weld  tupý svar  
common single fillet weld  koutový svar  
component  součástka  
disadvantage  nevýhoda  
fillet weld  koutový svar  
flexibility  pružnost  
flux covered electrode  tavidlem obalená elektroda  
guarantee  zaručovat  
interrupted double fillet weld  koutový svar  
joint  oboustranný spoj  
melted  tavný  
metal  kov  
plane  rovina  
pressed  tlakový  
riveted  nýtový  
shielded metal arc welding  obloukové svařování (ruční s ochran.štítem)  
tubular rivet  trubkový nýt  
undetachable  nerozebíratelný  
weld  svařovat  
welding  svařování  
work productivity  produktivita práce  

COMPREHENSION QUESTIONS

1. What do you know about welded joints?
2. Can you name an advantage of welded joints?
3. Can you name a disadvantage of welded joints?
4. Can you describe shielded metal arc welding?
5. Can you define a riveted joint?
6. What advantage and disadvantage of riveted joints do you know?
EXERCISES

1. Match the words below with words 1-6 to make phrases. Then translate the expressions into Czech:

<table>
<thead>
<tr>
<th>joint</th>
<th>electrode</th>
<th>process</th>
</tr>
</thead>
<tbody>
<tr>
<td>productivity</td>
<td>rivet</td>
<td>weld</td>
</tr>
</tbody>
</table>

1. welding ______________________ ______________________________ _______________________
2. butt end ______________________ ______________________________ _______________________
3. undetachable ______________________ ______________________________ _______________________
4. work ______________________ ______________________________ _______________________
5. flux covered ______________________ ______________________________ _______________________
6. boiler ______________________ ______________________________ _______________________

2. Translate the following phrases into English:

1. svárový spoj
2. oprávněný personál
3. normalizované nýty
4. kotlový nýt
5. koutový svar oboustranný
6. tavidlem obalená elektroda

3. Add the expressions where you think they should be:

1. ELECTRODE CABLE
2. OBJECT
3. ELECTRODE
4. WELDING MACHINE
5. OBJECT CABLE
6. ARC
7. ELECTRODE HOLDER
1. **KEY – for teachers only**

<table>
<thead>
<tr>
<th>joint</th>
<th>electrode</th>
<th>process</th>
</tr>
</thead>
<tbody>
<tr>
<td>productivity</td>
<td>rivet</td>
<td>weld</td>
</tr>
</tbody>
</table>

1. **welding** process **process svařování**
2. **butt end** **weld** **tupý svár**
3. **undetachable** **joint** **nerozebiratelný spoj**
4. **work** **productivity** **productivita práca**
5. **flux covered** **electrode** **tavidlem obalená elektroda**
6. **boiler** **rivet** **kotlový nýt**

2. 1. **svárový spoj** welded joint
    2. **oprávněný personál** certified working staff
    3. **normalizované nýty** standardised rivets
    4. **kotlový nýt** boiler rivet
    5. **koutový svar oboustranný** interrupted double fillet weld
    6. **tavidlem obalená elektroda** flux covered electrode

3. ![Diagram of welding process](attachment:image.png)