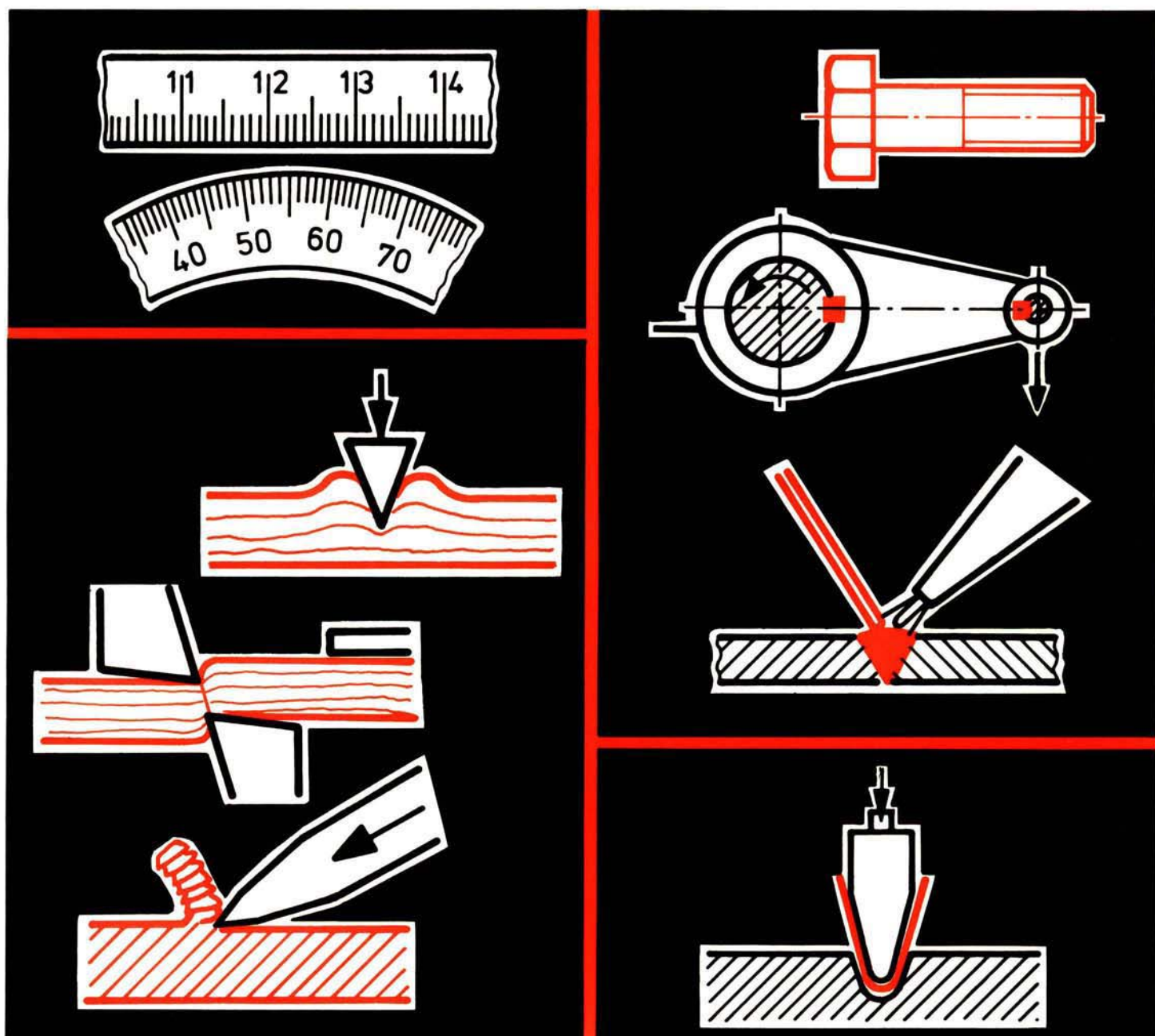
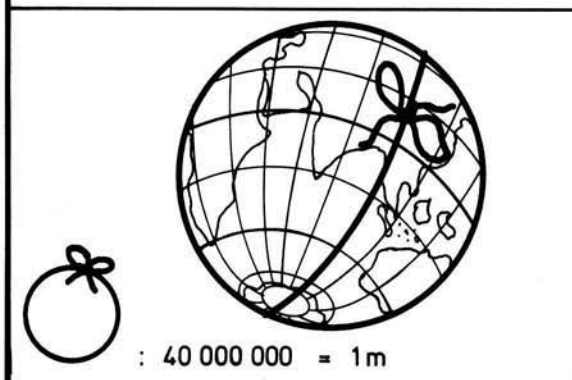
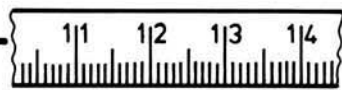


# Bildreihen für die Grundstufe Metall

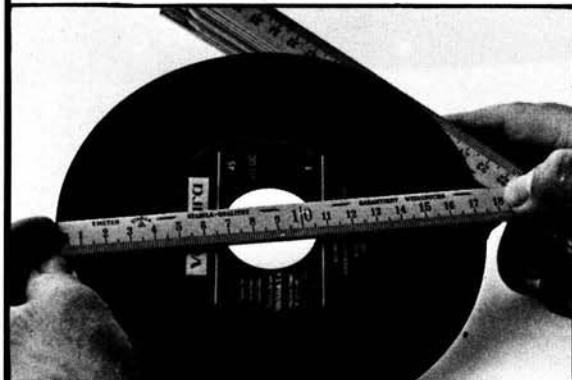
Helmut Pfisterer



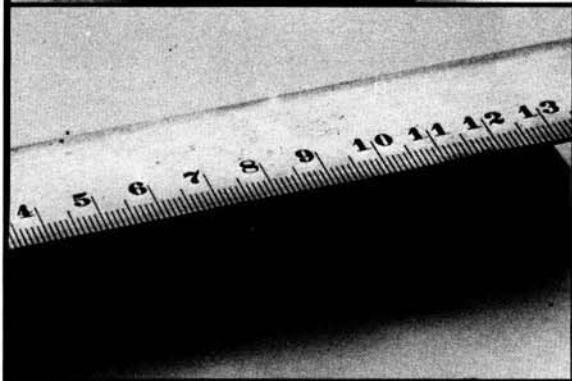
Holland + Josenhans Verlag Stuttgart Bestell-Nr.3004



\_\_\_\_\_ 1.1



\_\_\_\_\_ 1.2



\_\_\_\_\_ 1.3

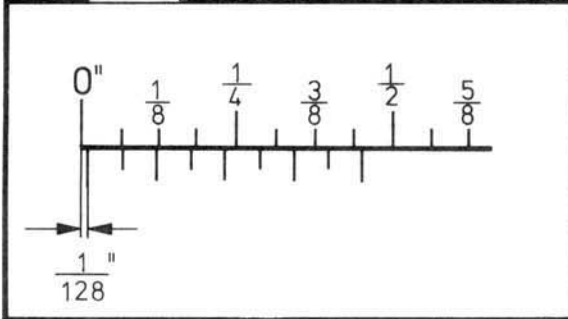
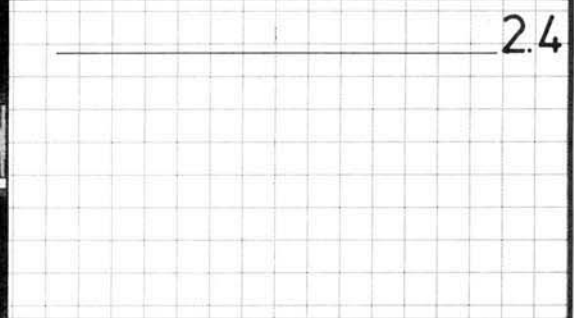
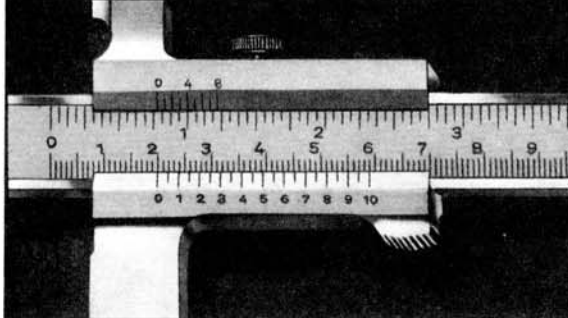
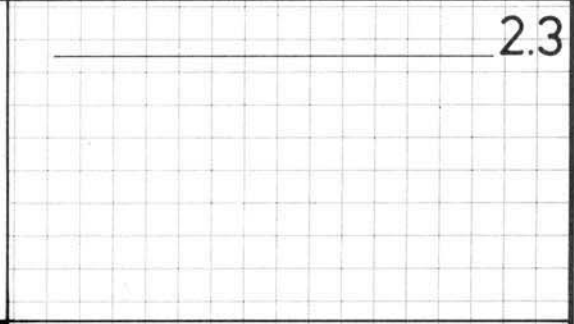
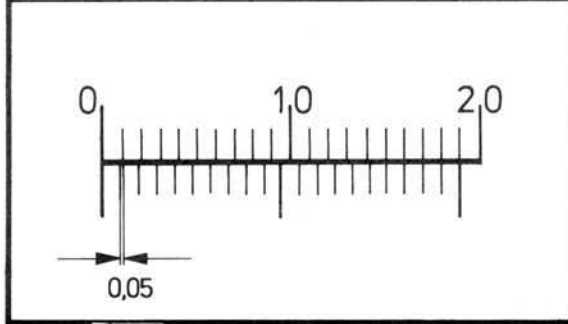
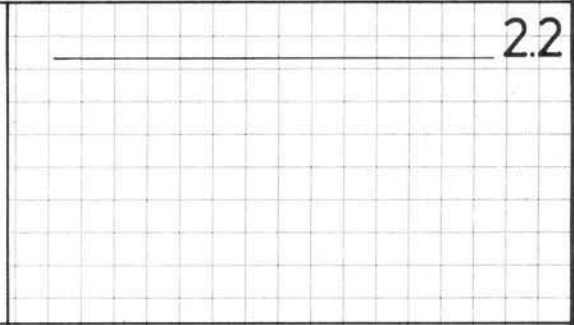
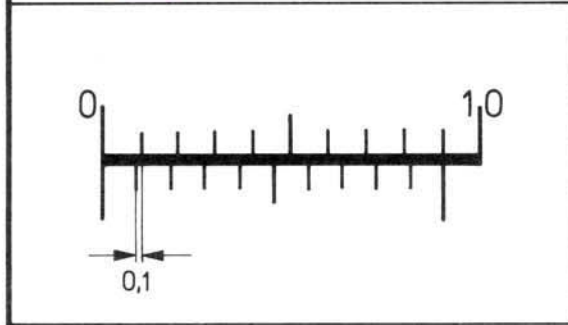
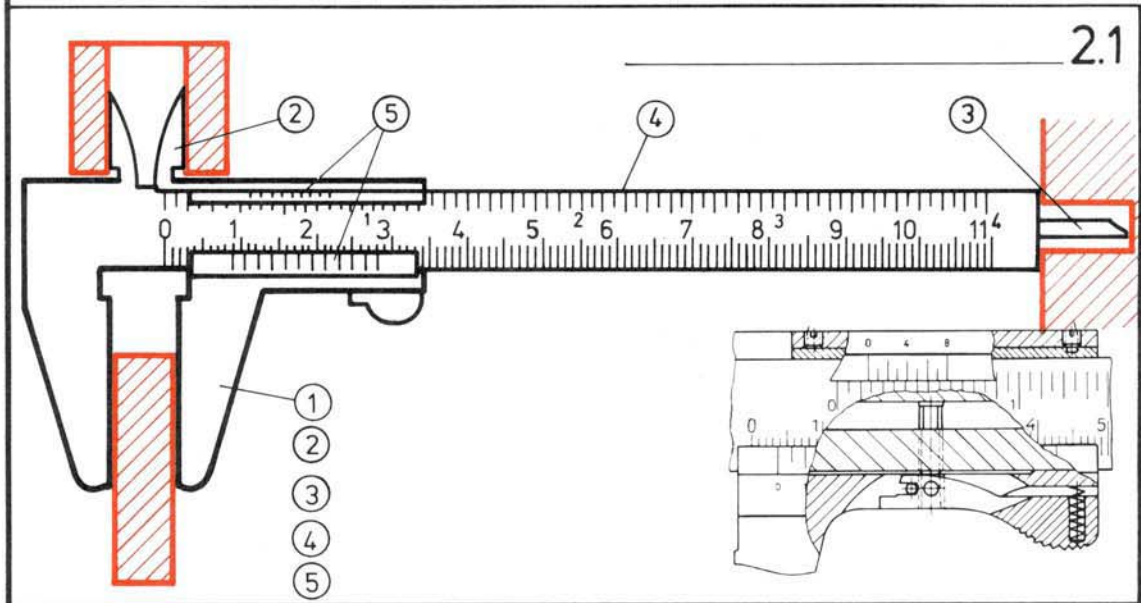
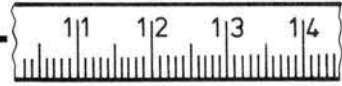


\_\_\_\_\_ 1.4

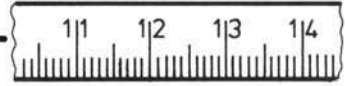


\_\_\_\_\_ 1.5



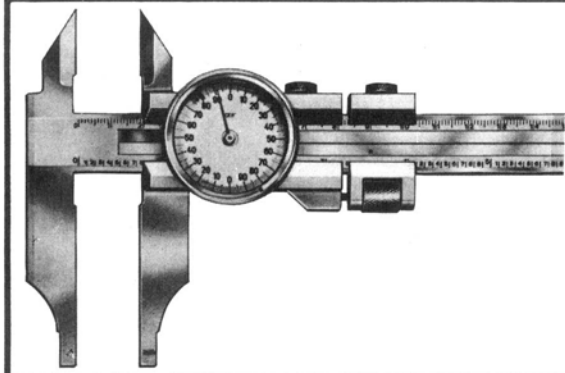
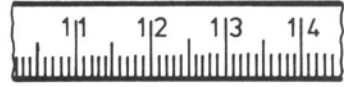


$$\frac{1}{16} - \frac{7}{16} : 8 = \frac{8}{128} - \frac{7}{128} = \frac{1}{128}$$

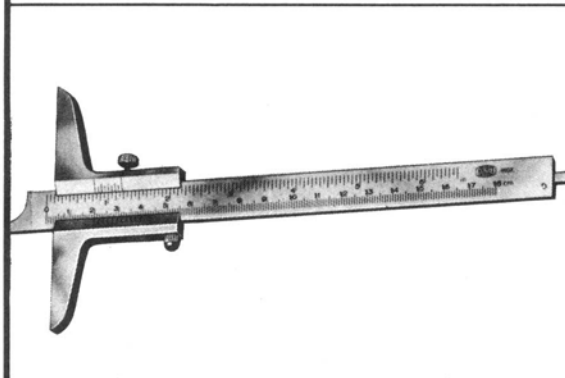


	<p>_____ 3.1</p>
	<p>_____ 3.2</p>
	<p>_____ 3.3</p>
	<p>_____ 3.4</p>
	<p>_____ 3.5</p> <p>① ② ③ ④</p>

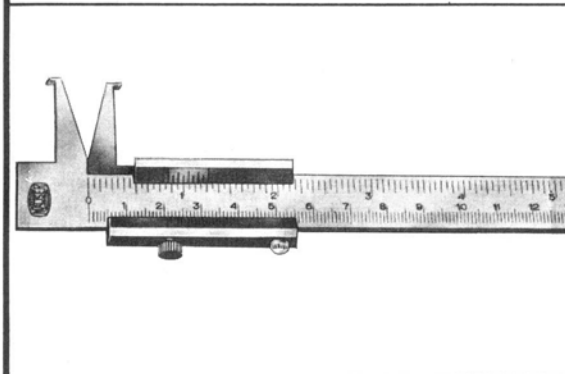




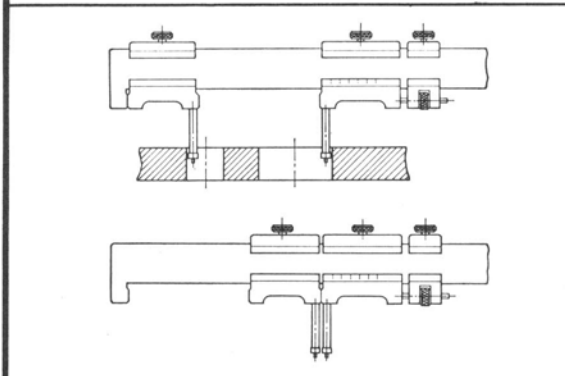
3.1



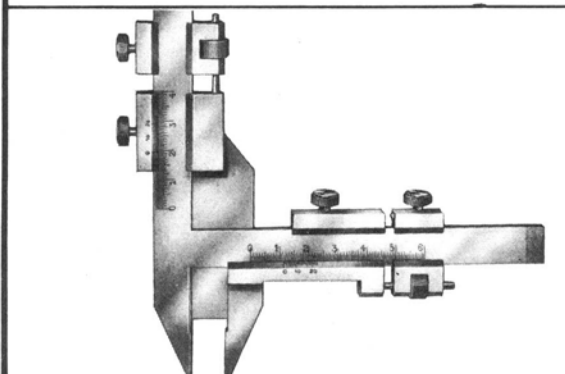
3.2



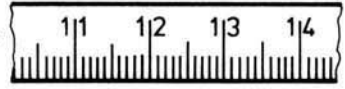
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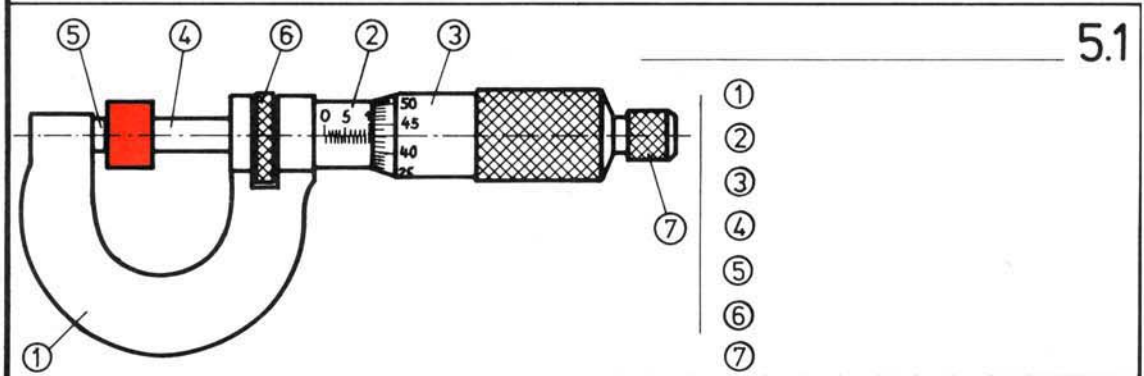
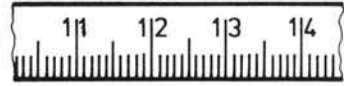
3.4



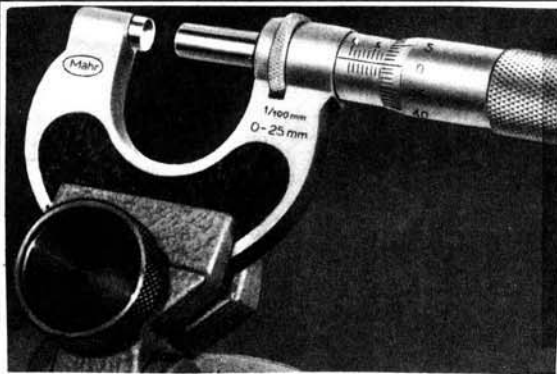
3.5



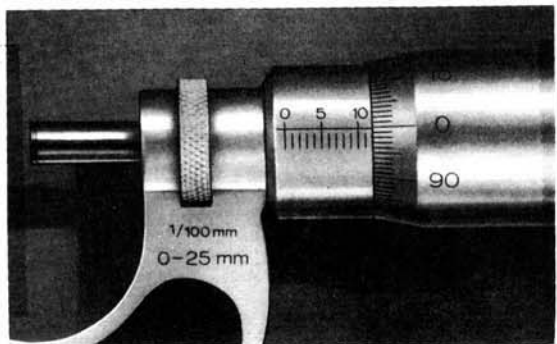
	<p>_____ 4.1</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>



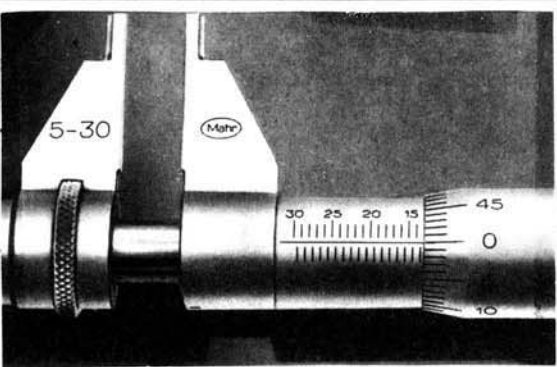
5.1



5.2



5.3

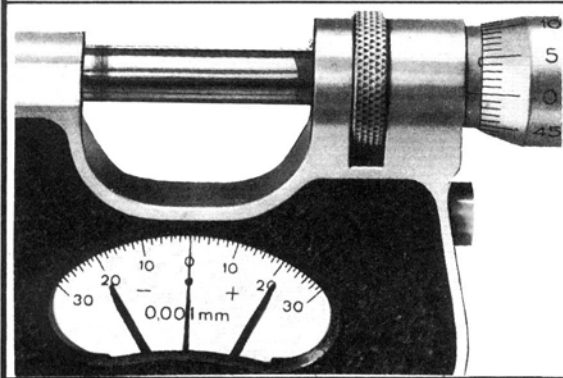


5.4

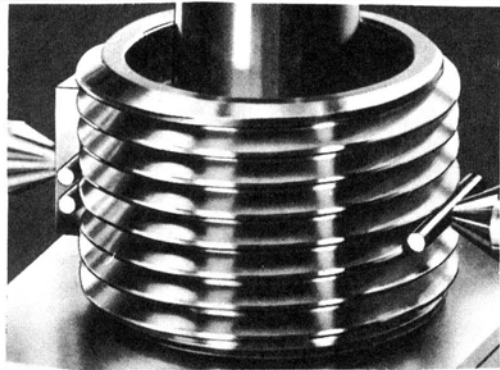


5.5

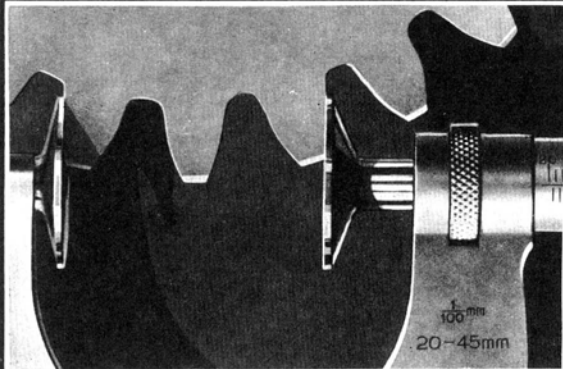




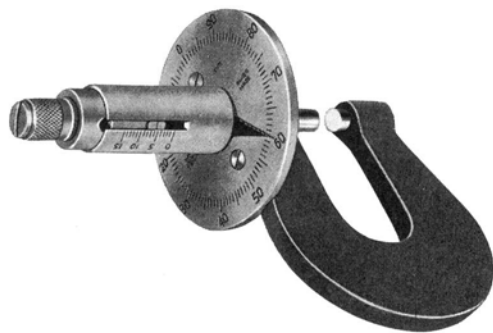
5.1



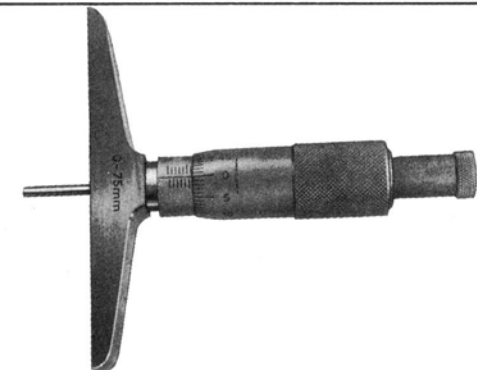
5.2



5.3



5.4

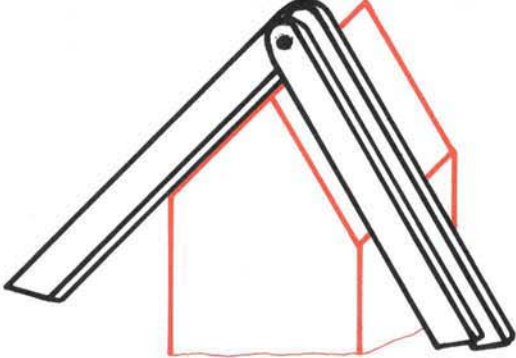
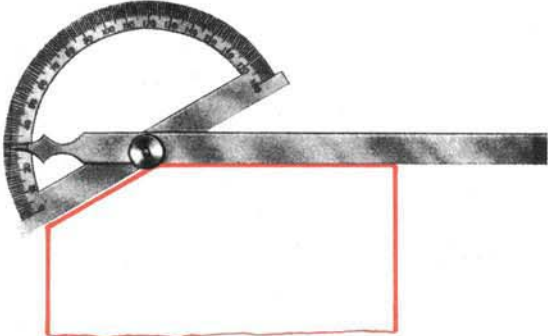
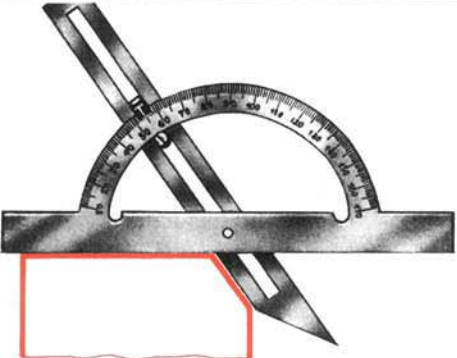
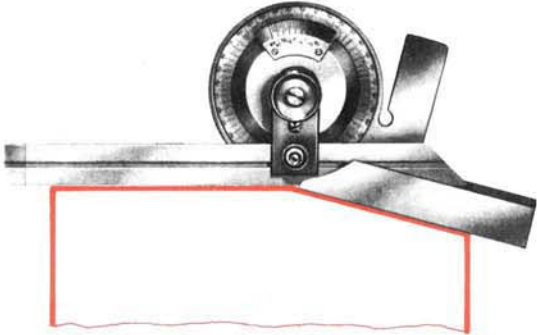
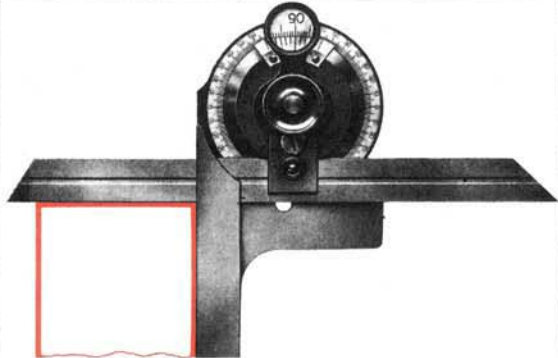


5.5

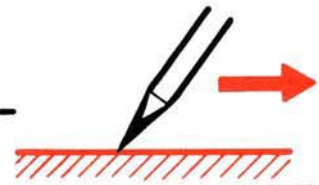


	<p>_____ 6.1</p>
	<p>_____ 6.2</p>
	<p>_____ 6.3</p>
	<p>_____ 6.4</p>
	<p>_____ 6.5</p> <ul style="list-style-type: none"> <li>①</li> <li>②</li> <li>③</li> <li>④</li> <li>⑤</li> </ul>



	<p>_____ 7.1</p>
	<p>_____ 7.2</p>
	<p>_____ 7.3</p>
	<p>_____ 7.4</p>
	<p>_____ 7.5</p>

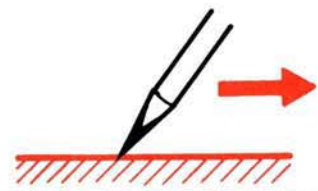



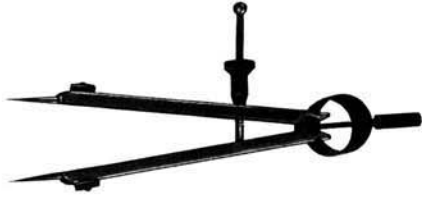

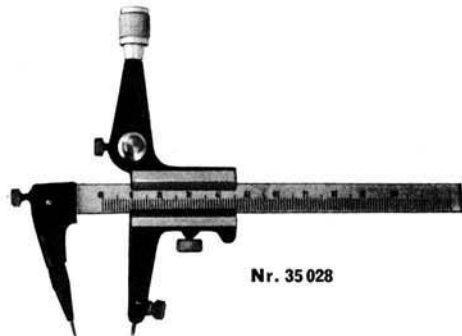

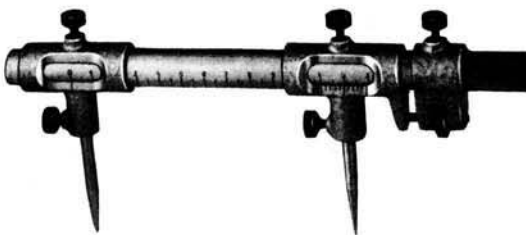

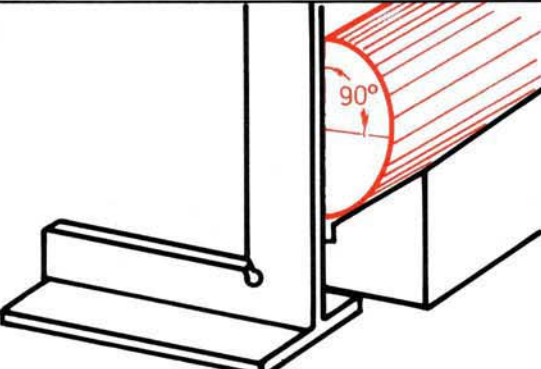
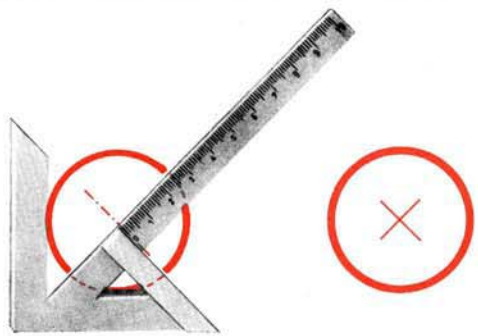


	<p style="text-align: right;">1.1</p> <p>① ② ③ ④ ⑤ ⑥ ⑨ ⑦ ⑧</p>
	<p style="text-align: right;">1.2</p> <p>① ②</p>
	<p style="text-align: right;">1.3</p> <p>① ② ③ ⚠</p>
	<p style="text-align: right;">1.4</p>
	<p style="text-align: right;">1.5</p>



	<p>2.1</p>
	<p>2.2</p>
	<p>2.3</p>
	<p>2.4</p>
	<p>2.5</p>

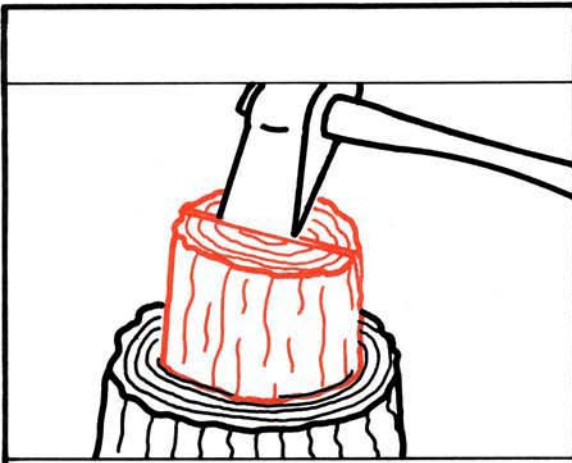
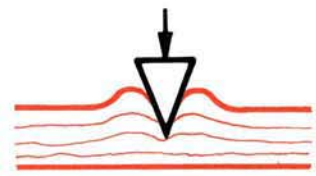


 	<p>_____ 3.1</p> <p>①</p>  <p>②</p>
	<p>_____ 3.2</p> 
	<p>_____ 3.3</p> 
	<p>_____ 3.4</p>
	<p>_____ 3.5</p>

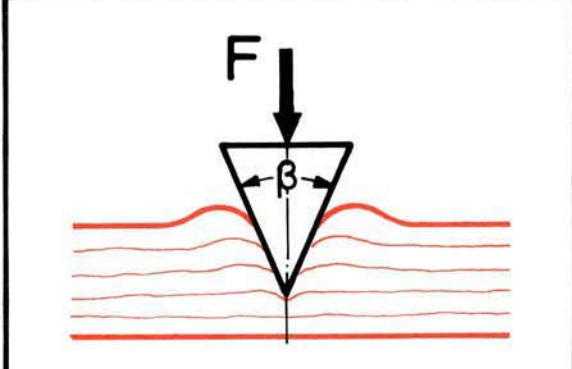




	<p>_____ 4.1</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 4.2</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>

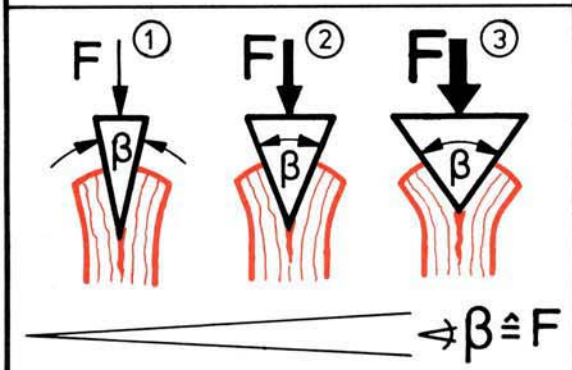


\_\_\_\_\_ 1.1



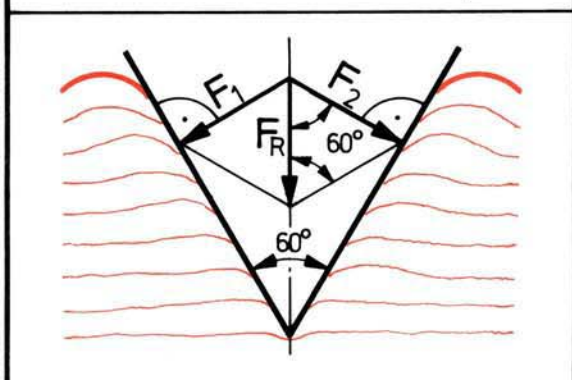
\_\_\_\_\_ 1.2

$F =$   
 $\sphericalangle \beta =$



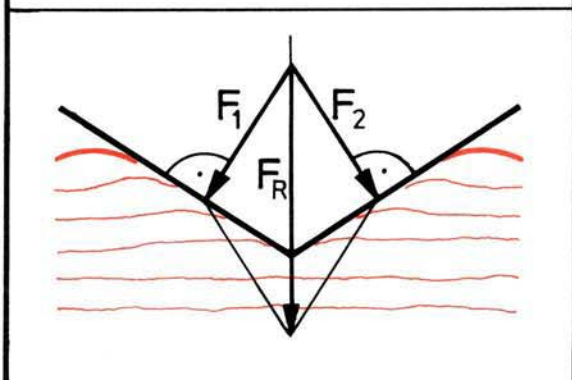
\_\_\_\_\_ 1.3

- ①
- ②
- ③



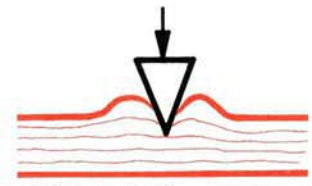
\_\_\_\_\_ 1.4

$F_1 = F_2$   
 $\sphericalangle 60^\circ : F_R = F_1 = F_2$



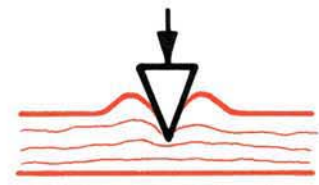
\_\_\_\_\_ 1.5

$F_1 = F_2 < F_R$

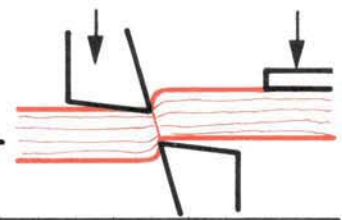


	<p>_____ 2.1</p>
	<p>_____ 2.2</p>
	<p>_____ 2.3</p>
	<p>_____ 2.4</p> <p>① ②</p>
	<p>_____ 2.5</p> <p>① ② ③ ④</p>

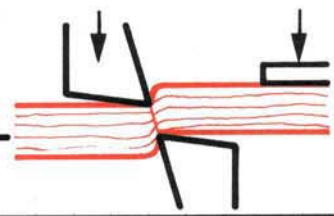




	<p>_____ 3.1</p> <p>①</p> <p>②</p>
	<p>_____ 3.2</p> <p><math>F \cdot S = F \cdot S</math></p>
	<p>_____ 3.3</p>
	<p>_____ 3.4</p> <p>①</p> <p>②</p>
	<p>_____ 3.5</p> <p>①</p> <p>②</p>

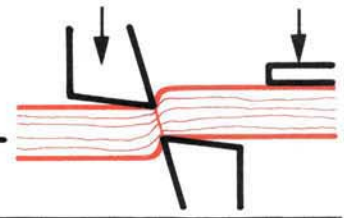


	<p>_____ 1.1</p> <p><math>\sphericalangle \alpha = 2 \dots 4^\circ =</math></p> <p><math>\sphericalangle \beta = 75 \dots 82^\circ =</math></p> <p><math>\sphericalangle \gamma = 5 \dots 13^\circ =</math></p>
	<p>_____ 1.2</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p>
	<p>_____ 1.5</p>

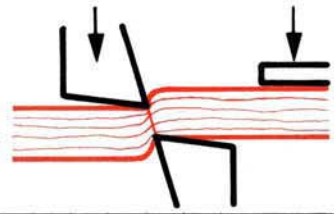


	<p>_____ 2.1</p>
	<p>_____ 2.2</p>
	<p>_____ 2.3</p>
	<p>_____ 2.4</p> <p>①</p> <p>②</p>
	<p>_____ 2.5</p>

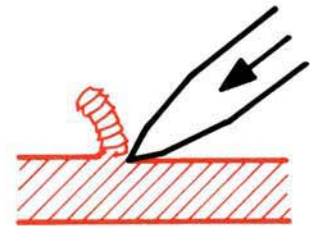




	<p>_____ 3.1</p>
	<p>_____ 3.2</p> <p>①</p> <p>②</p>
	<p>_____ 3.3</p>
	<p>_____ 3.4</p>
	<p>_____ 3.5</p>

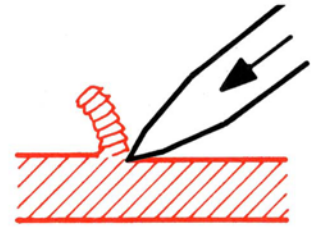


	<p>_____ 4.1</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p> <ul style="list-style-type: none"> <li>①</li> <li>②</li> <li>③</li> <li>④</li> <li>⑤</li> <li>⑥</li> </ul>
	<p>_____ 4.5</p>

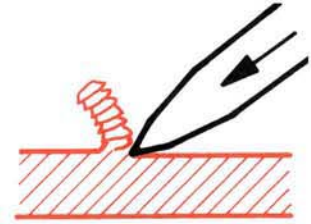


	<p>_____ 1.1</p>
	<p>_____ 1.2</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p> <p>① ② ③ ④ ⑤ ⑥ ⑦</p>

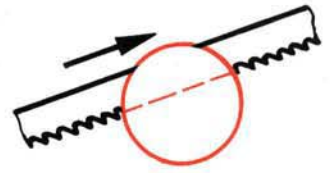




	<p>_____ 2.1</p> <p>① _____</p> <p>② _____</p> <p><math>\Delta \alpha =</math> _____</p> <p><math>\Delta \beta =</math> _____</p> <p><math>\Delta \gamma =</math> _____</p>
	<p>_____ 2.2</p> <p>① _____</p> <p>② _____</p> <p><math>\Delta \alpha =</math> _____</p> <p><math>\Delta \beta =</math> _____</p> <p><math>\Delta \gamma =</math> _____</p>
	<p>_____ 2.3</p>
	<p>_____ 2.4</p>
	<p>_____ 2.5</p>

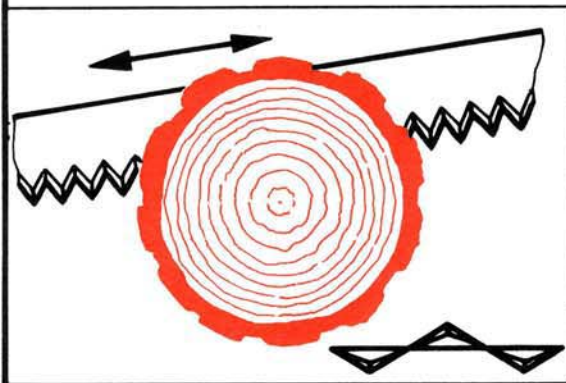
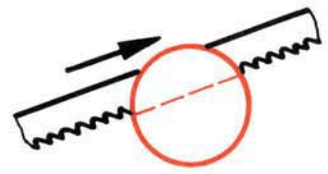


	<p>3.1</p>
	<p>3.2</p>
	<p>3.3</p>
	<p>3.4</p>
	<p>3.5</p>

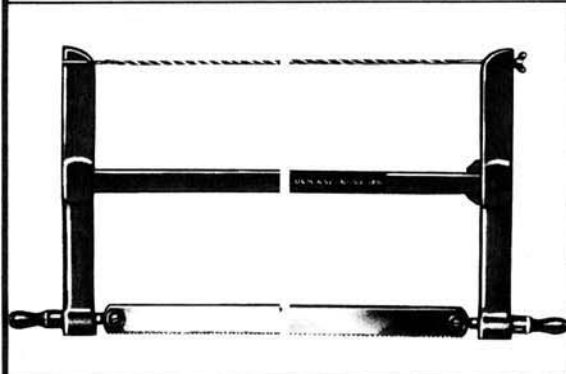


	<p>_____ 1.1</p>
	<p>_____ 1.2</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p> <p></p>
	<p>_____ 1.5</p> <p></p>

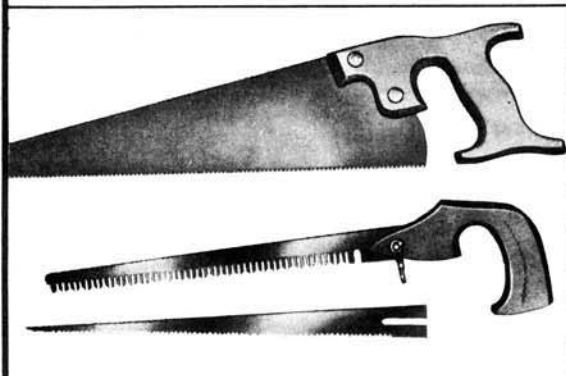




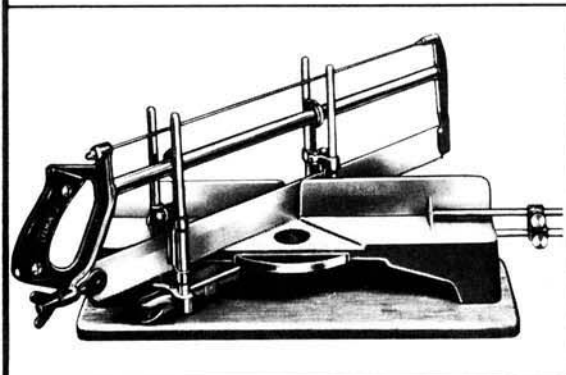
2.1



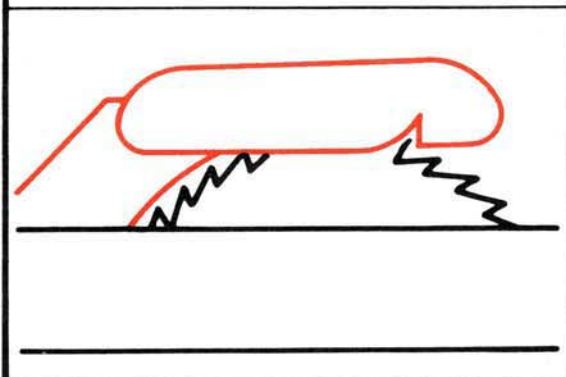
2.2



2.3

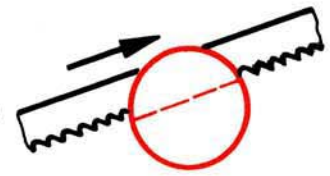


2.4

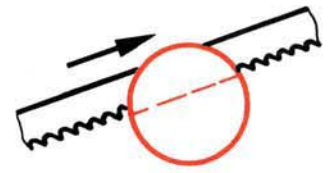


2.5





	<p>_____ 3.1</p> <p><math>\sphericalangle \alpha = 30^\circ</math>  <math>\sphericalangle \beta = 50^\circ</math>  <math>\sphericalangle \gamma = 10^\circ</math></p>
	<p>_____ 3.2</p> <p><math>\sphericalangle \alpha = 40^\circ</math>  <math>\sphericalangle \beta = 50^\circ</math>  <math>\sphericalangle \gamma = 0^\circ</math></p>
	<p>_____ 3.3</p>
	<p>_____ 3.4</p>
	<p>_____ 3.5</p>

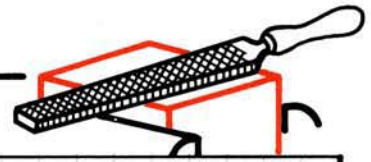


	<p>_____ 4.1</p>
	<p>_____ 4.2</p> <p>①</p> <p>②</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>





	<p>_____ 1.1</p>
	<p>_____ 1.2</p>
	<p>_____ 1.3</p> <p>① ② ③ ④</p>
	<p>_____ 1.4</p> <p>↔ <math>\alpha</math> ↔ <math>\beta</math> ↔ <math>\gamma</math></p>
	<p>_____ 1.5</p> <p>↔ <math>\alpha</math> ↔ <math>\beta</math> ↔ <math>\gamma</math></p>



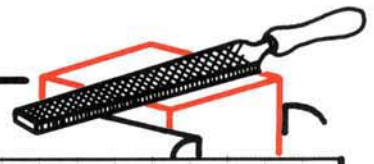
<p>①      ②      ③</p>	<p>_____ 2.1</p> <p>①</p> <p>②</p> <p>③</p>
<p>①      ②</p>	<p>_____ 2.2</p> <p>①</p> <p>②</p>
<p>①      ②</p> <p>71°</p> <p>54°</p>	<p>_____ 2.3</p> <p>①</p> <p>②</p>
<p>①      ②</p>	<p>_____ 2.4</p>
	<p>_____ 2.5</p>



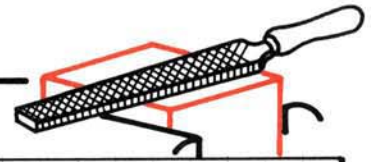


		3.1	
	1	1	
	2	2	
		3.2	
	3	3	
	4	4	
		3.3	
	5	5	
	6	6	
		3.4	
	□		3.41
	∪		3.42
	□		3.43
	△		3.44
	○		3.45
	▷		3.46
	◇		3.47
	◊		3.48
	◄		3.49



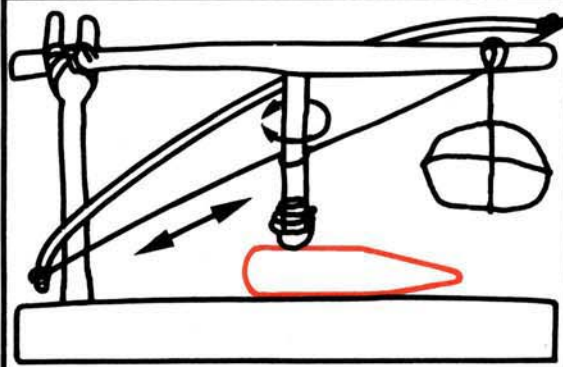
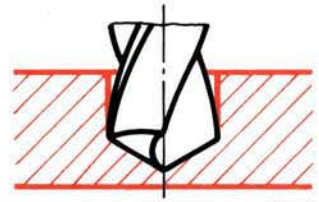


	<p>4.1</p>
	<p>4.2</p>
	<p>4.3</p>
	<p>4.4</p>
	<p>4.5</p>

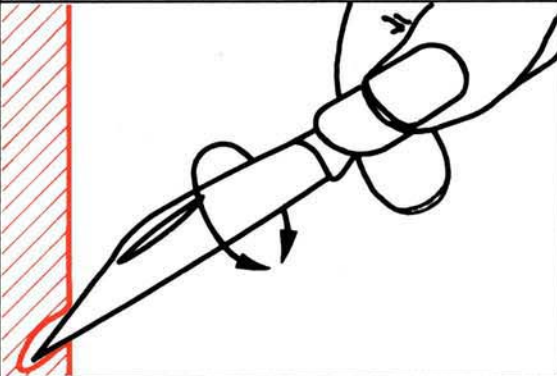


	<p>5.1</p>
	<p>5.2</p>
	<p>5.3</p>
	<p>5.4</p>
	<p>5.5</p>

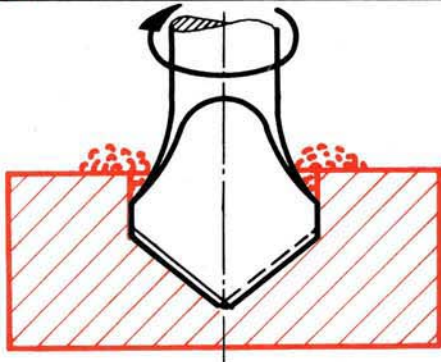




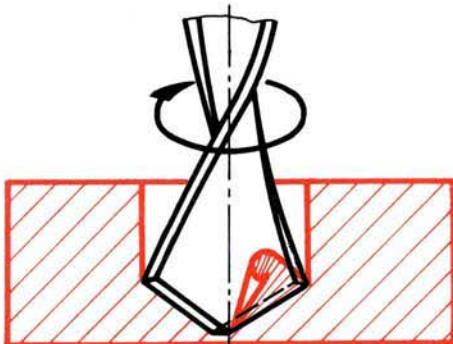
1.1



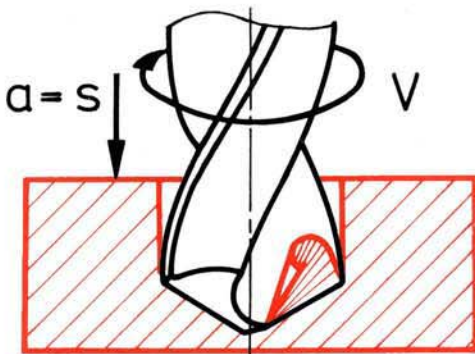
1.2



1.3

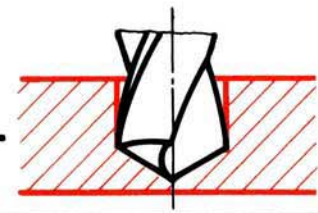


1.4



1.5



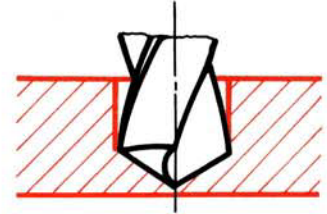


	<p style="text-align: right;">2.1</p> <p>① ② ③ ④ ⑤ ⑥ ⑦</p>
	<p style="text-align: right;">2.2</p> <p>① ② <math>\sphericalangle \sigma</math> ③ ④ ⑤ ⑥ ⑦</p>
	<p style="text-align: right;">2.3</p> <p><math>\sphericalangle \alpha =</math> <math>\sphericalangle \beta =</math> <math>\sphericalangle \gamma =</math></p>
	<p style="text-align: right;">2.4</p> <p>N - <math>\sphericalangle \gamma</math> W - <math>\sphericalangle \gamma</math> H - <math>\sphericalangle \gamma</math></p>
	<p style="text-align: right;">2.5</p> <p><math>\sphericalangle \sigma</math> N 118° 130° 140° W 118° 140° 80° H 118° 140°</p>



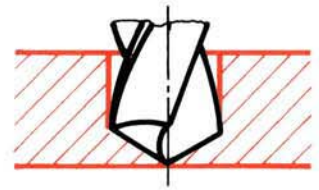
	<p>_____ 3.1</p> <p>① ②</p>
	<p>_____ 3.2</p> <p>① ②</p> <p>⚠</p>
	<p>_____ 3.3</p> <p>⚠</p>
	<p>_____ 3.4</p> <p>① ② ③</p>
	<p>_____ 3.5</p> <p>① ② ③</p>





	<p>_____ 4.1</p> <p>①</p> <p>②</p> <p>① + ② =</p>
	<p>_____ 4.2</p> <p>⚠</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p> <p>⑥</p>
	<p>_____ 4.3</p> <p>⚠</p>
	<p>_____ 4.4</p> <p>⚠</p>
	<p>_____ 4.5</p> <p>⚠</p>



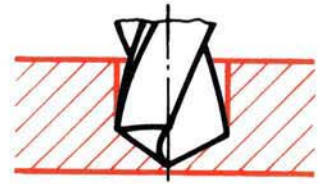


	<p>_____ 5.1</p> <p>① _____</p> <p>② _____</p>
	<p>_____ 5.2</p>
	<p>_____ 5.3</p> <p>① _____</p> <p>② _____</p>
	<p>_____ 5.4</p> <p>① _____</p> <p>② _____</p> <p>③ _____</p>
	<p>_____ 5.5</p> <p>v - _____</p> <p>a - _____</p> <p>s - _____</p>



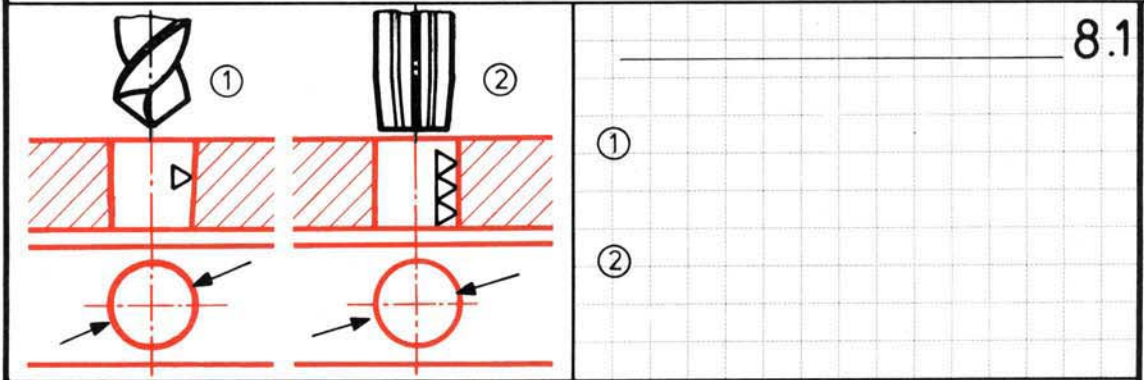
	<p>_____ 6.1</p> <p><math>\sphericalangle = 60^\circ, 75^\circ, 90^\circ, 120^\circ</math></p>
	<p>_____ 6.2</p>
	<p>_____ 6.3</p> <p>① ② ③</p>
	<p>_____ 6.4</p>
	<p>_____ 6.5</p>



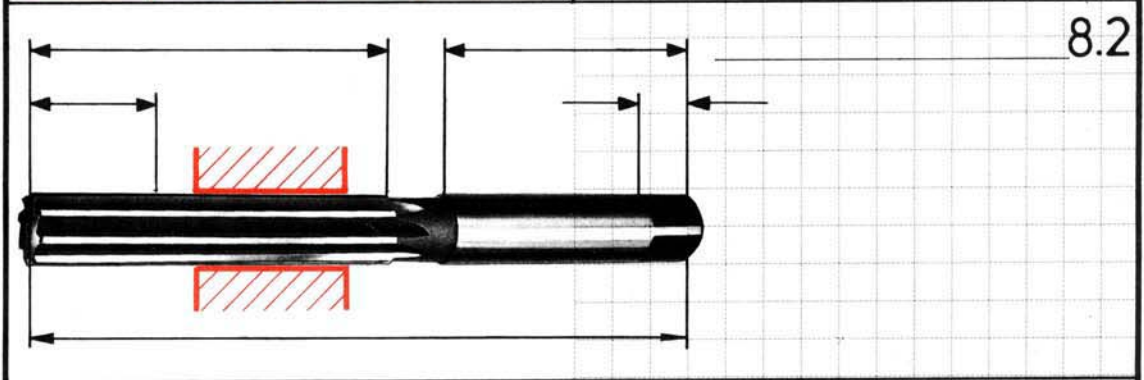


	<p>_____ 7.1</p>
	<p>_____ 7.2</p>
	<p>_____ 7.3</p>
	<p>_____ 7.4</p> <p>①</p> <p>②</p>
	<p>_____ 7.5</p>

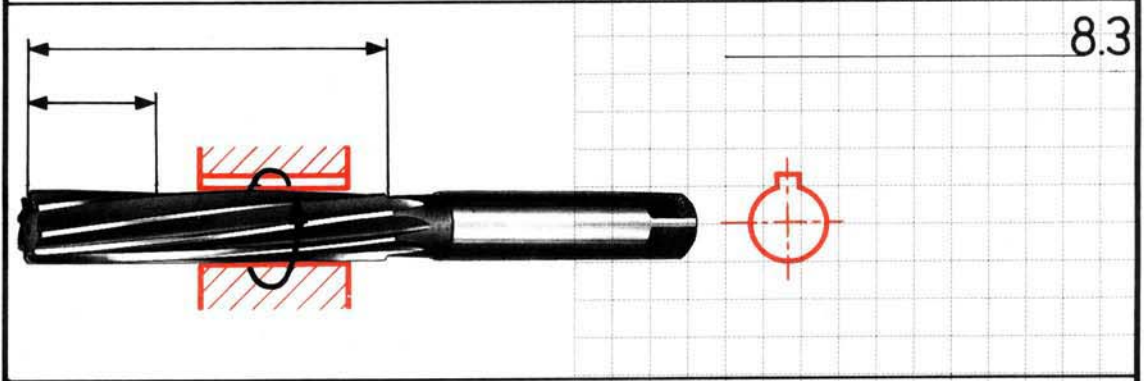




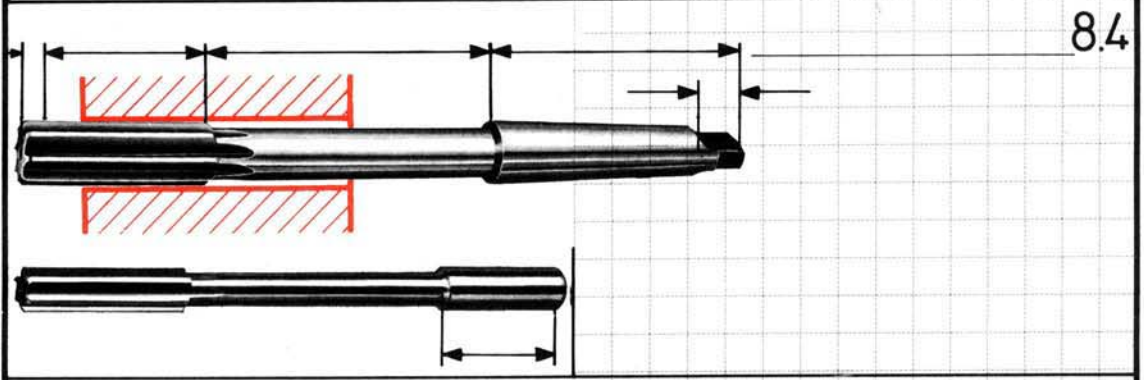
8.1



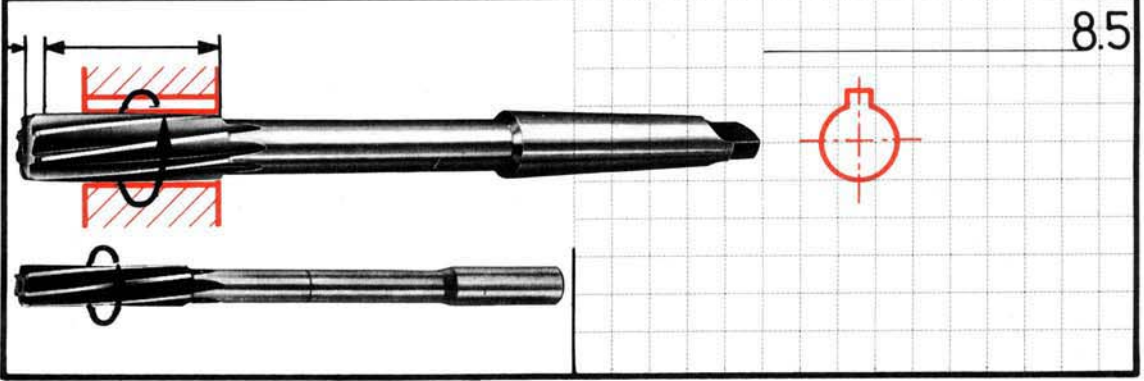
8.2



8.3



8.4



8.5



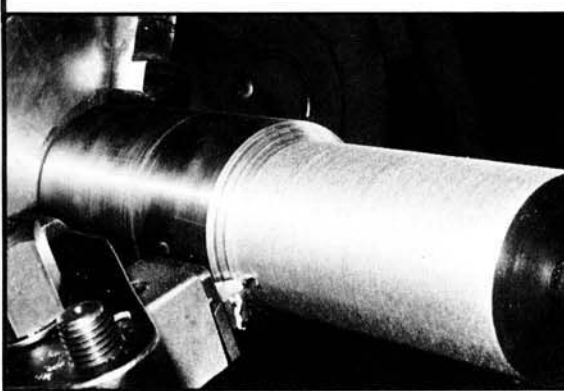
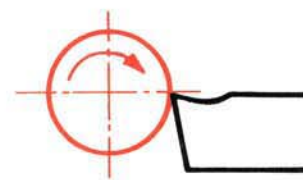
	<p style="text-align: right;">9.1</p> <p> <math>\sphericalangle \alpha =</math>  <math>\sphericalangle \beta =</math>  <math>\sphericalangle \gamma =</math> </p>
	<p style="text-align: right;">9.2</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">9.3</p> <p>⚠</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">9.4</p>
	<p style="text-align: right;">9.5</p>



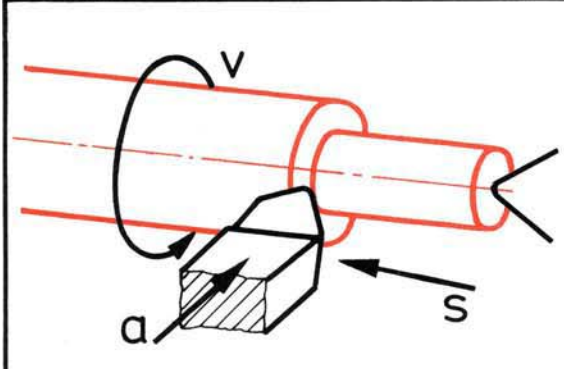


	<p style="text-align: right;">10.1</p>
	<p style="text-align: right;">10.2</p>
	<p style="text-align: right;">10.31</p>
	<p style="text-align: right;">10.32</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">10.4</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">10.5</p> <p>①</p> <p>②</p>



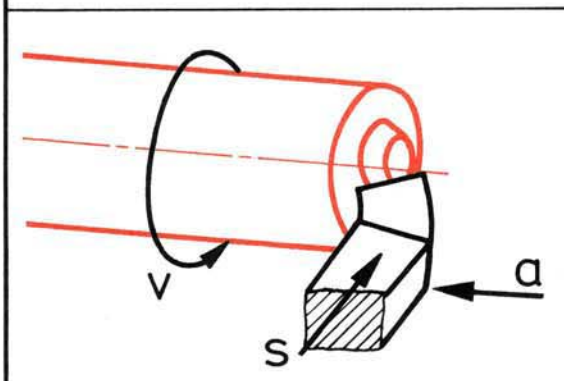


1.1



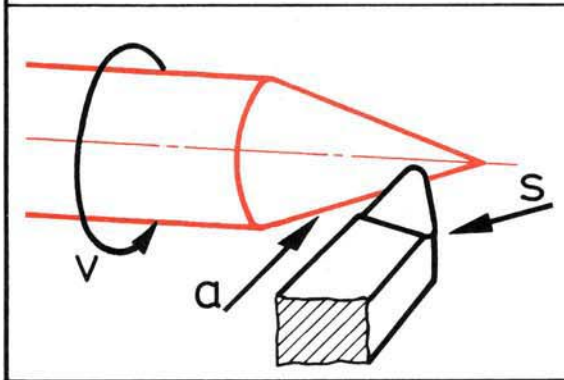
v -  
a -  
s -

1.2



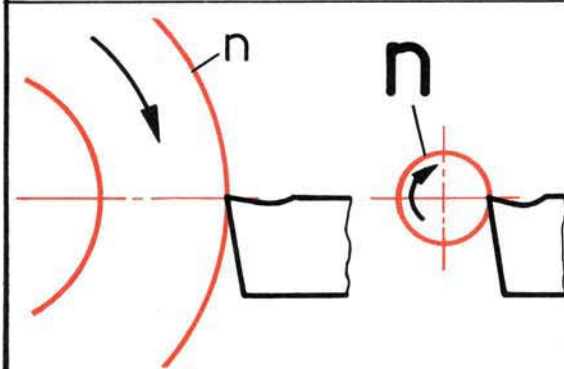
v -  
a -  
s -

1.3

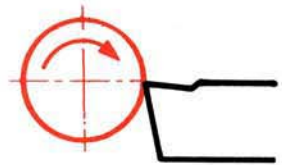


v -  
a -  
s -

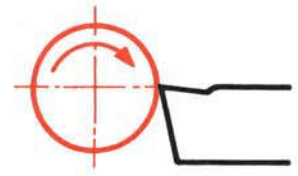
1.4



1.5

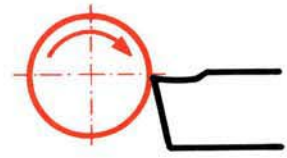


	<p style="text-align: right;">2.1</p> <p> <math>\Delta \alpha =</math>  <math>\Delta \beta =</math>  <math>\Delta \gamma =</math> </p>
	<p style="text-align: right;">2.2</p>
	<p style="text-align: right;">2.3</p>
	<p style="text-align: right;">2.4</p>
	<p style="text-align: right;">2.5</p> <p>         ①          ②     </p>

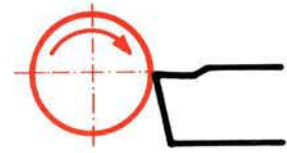


	<p>_____ 3.1</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p>
	<p>_____ 3.2</p> <p>①</p> <p>②</p>
	<p>_____ 3.3</p> <p>①</p> <p>②</p>
	<p>_____ 3.4</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 3.5</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p> <p>⑥</p>

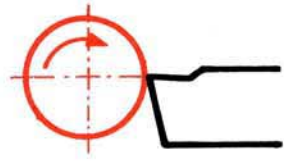


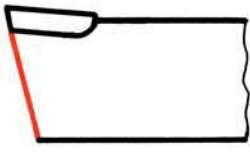
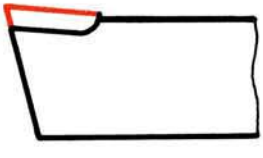
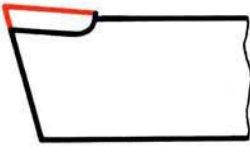
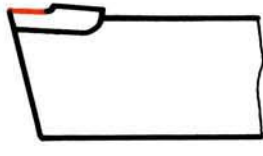
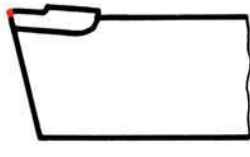
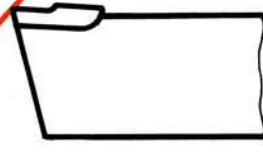
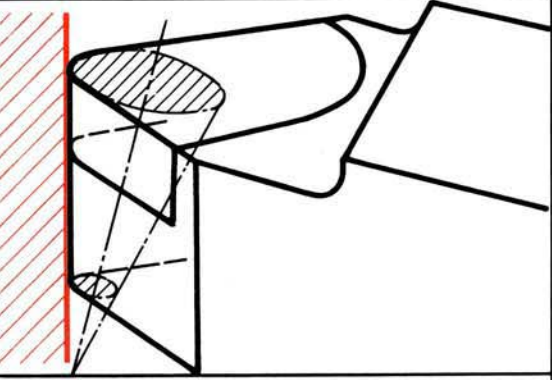
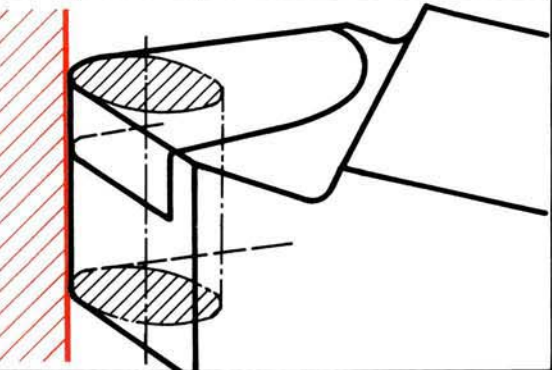


	<p style="text-align: right;">4.1</p> <p><math>\sphericalangle \alpha =</math></p> <p><math>\sphericalangle \beta =</math></p> <p><math>\sphericalangle \gamma =</math></p>
	<p style="text-align: right;">4.2</p> <p><math>\sphericalangle \alpha =</math></p> <p><math>\sphericalangle \beta =</math></p> <p><math>\sphericalangle \gamma =</math></p>
	<p style="text-align: right;">4.3</p> <p><math>x_1 =</math></p> <p><math>x_2 =</math></p>
	<p style="text-align: right;">4.4</p> <p><math>\epsilon =</math></p> <p><math>\chi =</math></p>
<p style="text-align: center;"><math>a \cdot S_1 = a \cdot S_2</math></p>	<p style="text-align: right;">4.5</p>

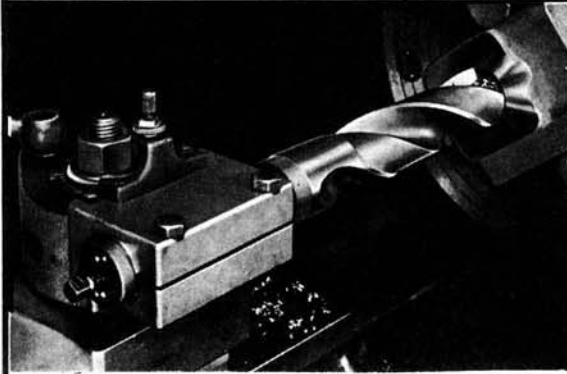
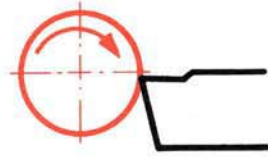


	<p style="text-align: right;">5.1</p> <p>① ② ③ ④ ⑤</p>
	<p style="text-align: right;">5.2</p> <p>① ② ③</p>
	<p style="text-align: right;">5.3</p> <p>① ② ③</p>
	<p style="text-align: right;">5.4</p>
	<p style="text-align: right;">5.5</p>

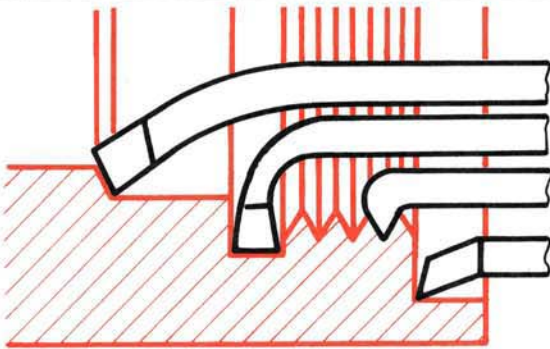


 <p>①</p>  <p>②</p>	<p>5.1</p>
 <p>③</p>  <p>④</p>	<p>5.2</p>
 <p>⑤</p>  <p>⑥</p>	<p>5.3</p>
	<p>5.4</p>
	<p>5.5</p>



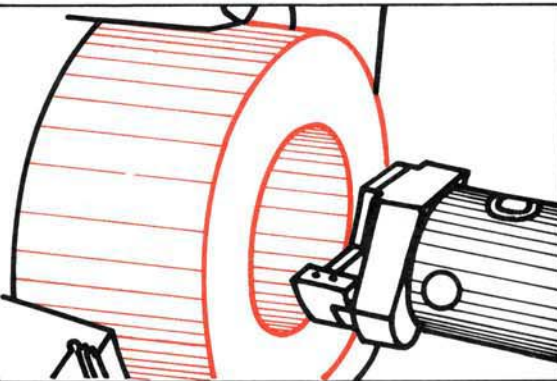


6.1

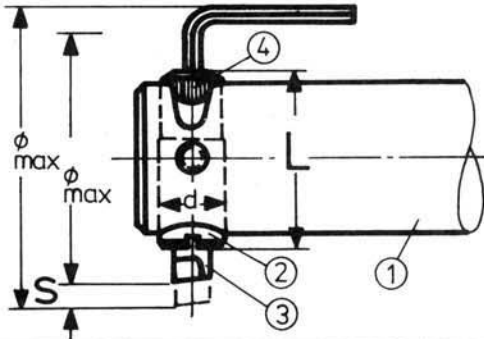


6.2

- ①
- ②
- ③
- ④

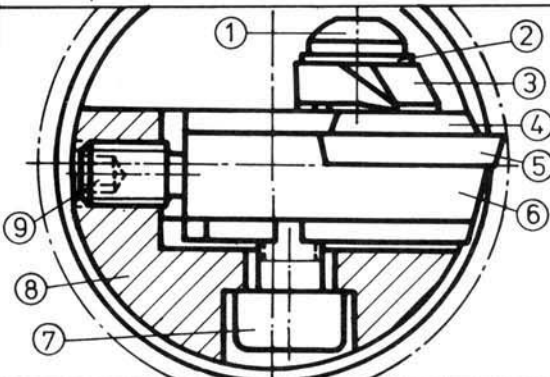


6.3



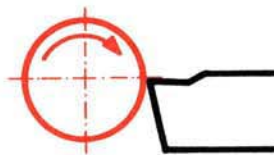
6.4

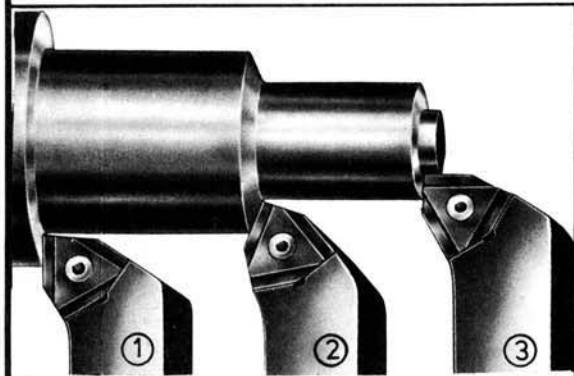
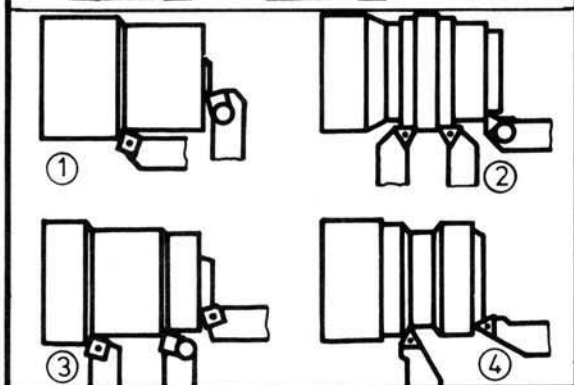
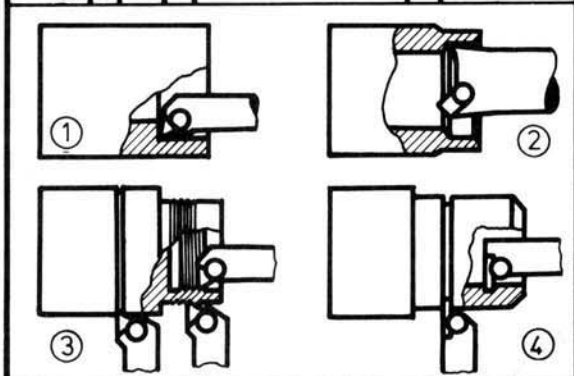
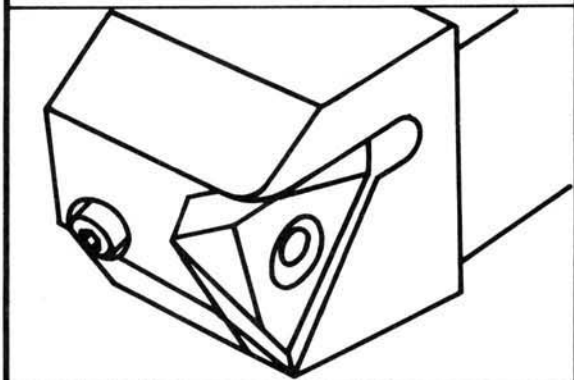
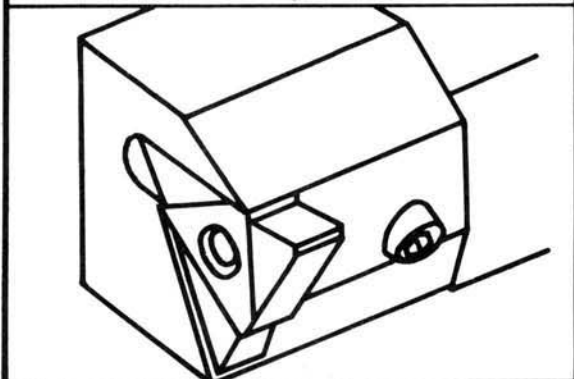
- ①
- ②
- ③
- ④



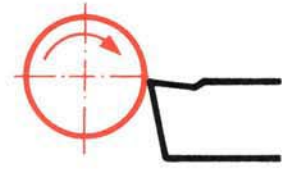
6.5

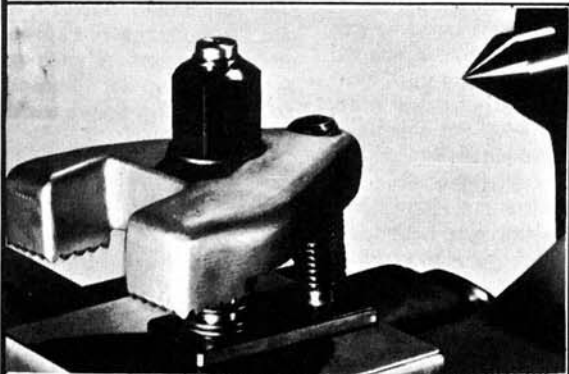
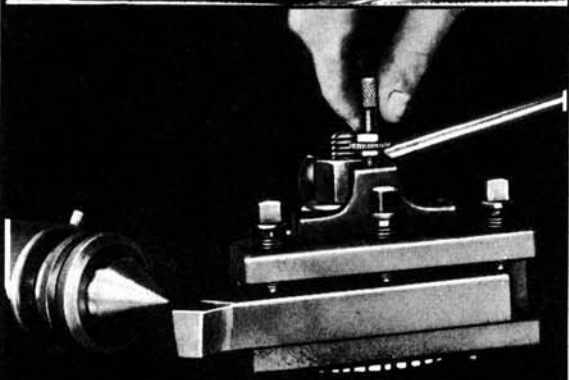
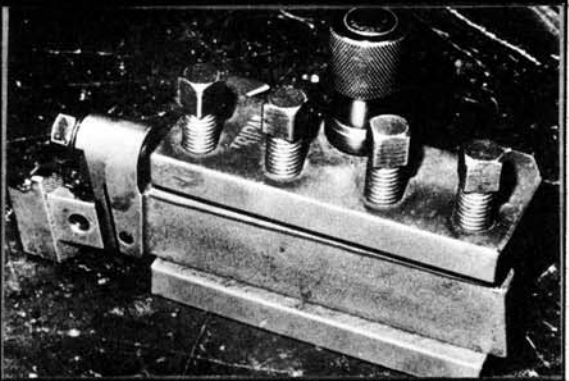
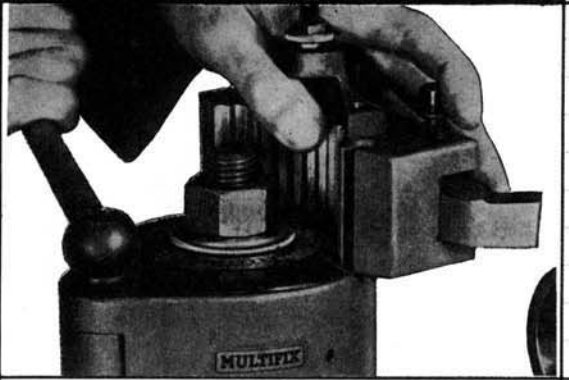
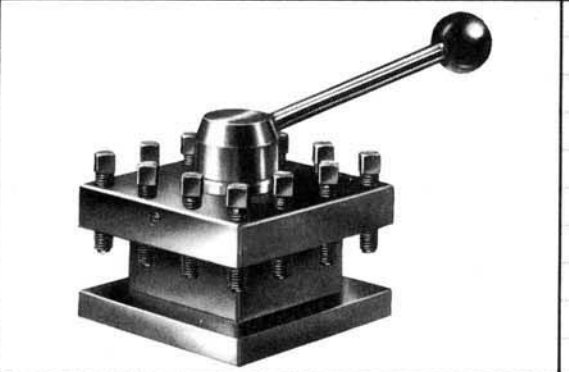
- ①
- ②
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- ⑨



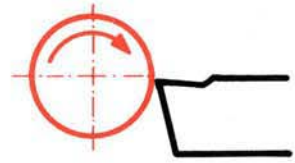
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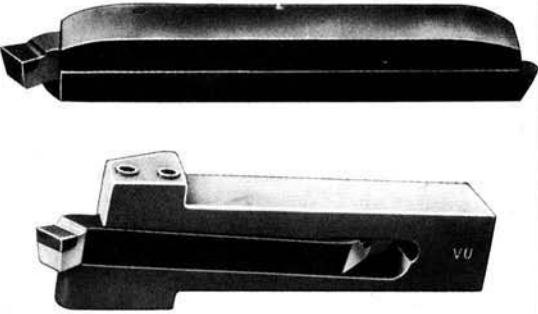
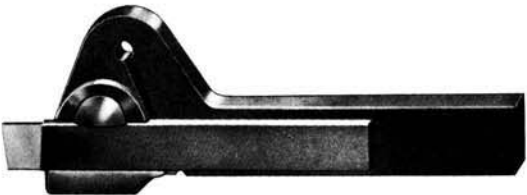
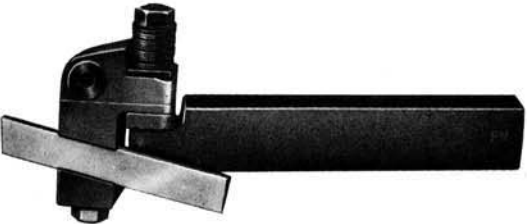
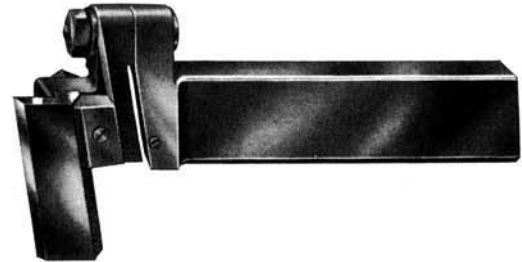
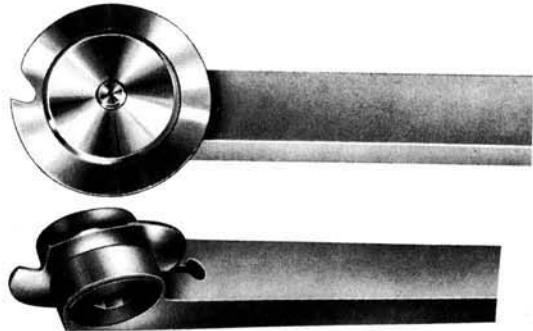


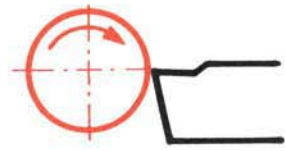


	<p>_____ 8.1</p>
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	<p>_____ 8.3</p>
	<p>_____ 8.4</p>
	<p>_____ 8.5</p>

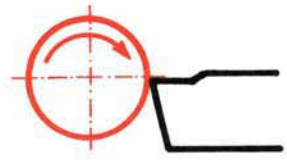


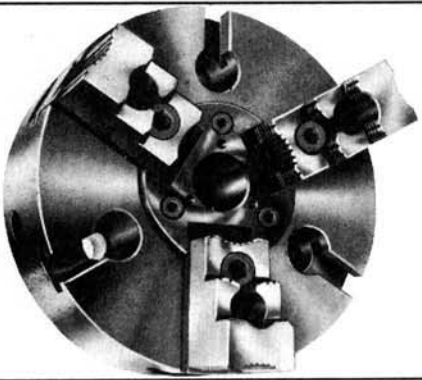

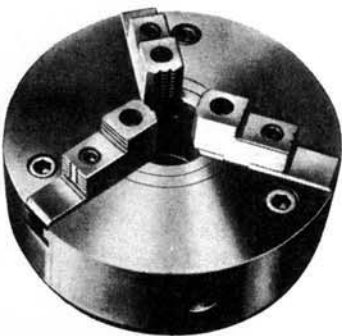

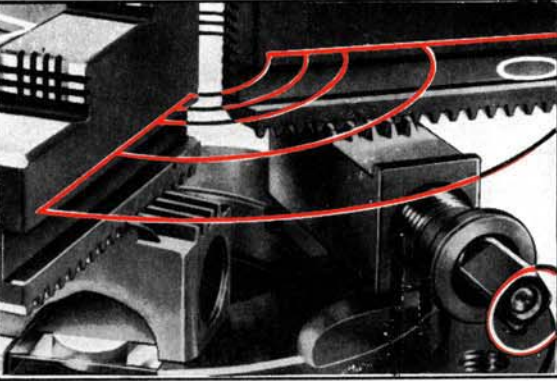

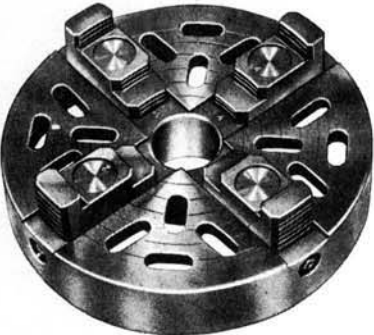

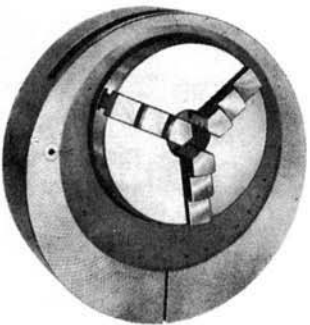



 <p>Two views of a handle. The top view shows a long, dark handle with a curved, ergonomic grip on the left end. The bottom view shows the same handle from a different angle, highlighting a rectangular cutout on the right side and the letters 'VU' on the handle's body.</p>	<p>_____ 9.1</p>
 <p>A handle with a curved grip on the left end. The handle has a circular detail on the left side, possibly a pivot point or a mounting hole. The handle is dark and appears to be made of metal or a hard plastic.</p>	<p>_____ 9.2</p>
 <p>A handle with a curved grip on the left end. The handle has a rectangular detail on the left side, possibly a mounting bracket or a pivot point. The handle is dark and appears to be made of metal or a hard plastic.</p>	<p>_____ 9.3</p>
 <p>A handle with a curved grip on the left end. The handle has a rectangular detail on the left side, possibly a mounting bracket or a pivot point. The handle is dark and appears to be made of metal or a hard plastic.</p>	<p>_____ 9.4</p>
 <p>Two views of a handle. The top view shows a circular detail on the left end of the handle, possibly a mounting bracket or a pivot point. The bottom view shows the same handle from a different angle, highlighting the circular detail and the handle's body.</p>	<p>_____ 9.5</p>

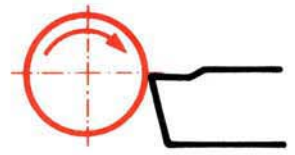


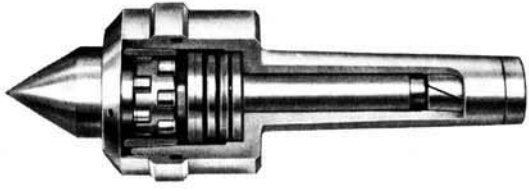
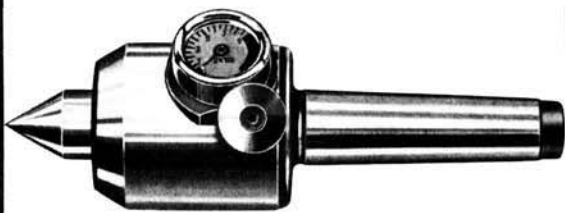
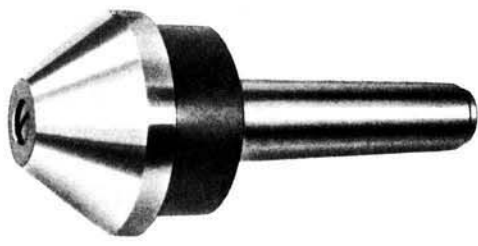
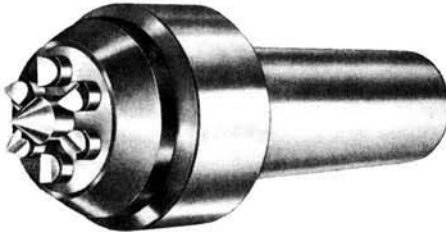


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	<p>10.2</p>
	<p>10.3</p>
	<p>10.4</p>
	<p>10.5</p> <ul style="list-style-type: none"> <li>①</li> <li>②</li> <li>③</li> <li>④</li> <li>④.1</li> <li>④.2</li> </ul>

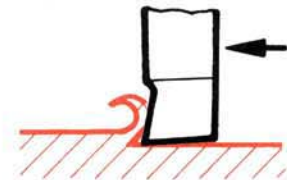


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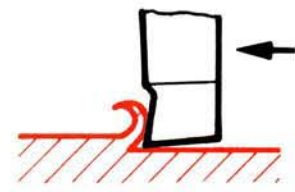


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	<p>_____ 11.2</p>
	<p>_____ 11.3</p>
	<p>_____ 11.4</p>
	<p>_____ 11.5</p> 



	<p>_____ 1.1</p>
	<p>_____ 1.2</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p>
	<p>_____ 1.5</p>

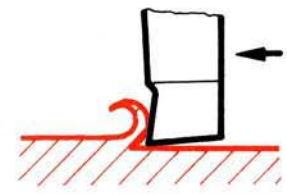




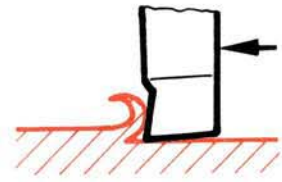
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	<p>_____ 2.1</p>
	<p>_____ 2.2</p>
	<p>_____ 2.3</p>
	<p>_____ 2.4</p> <p>① ② ③ ④</p>
	<p>_____ 2.5</p> <p>① ② ③</p>



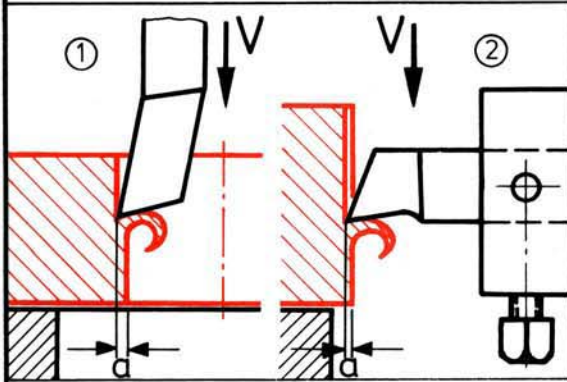
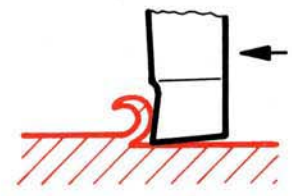


	<p>_____ 3.1</p> <p>①</p> <p>②</p>
	<p>_____ 3.2</p> <p>①</p> <p>②</p>
	<p>_____ 3.3</p>
	<p>_____ 3.4</p>
	<p>_____ 3.5</p>



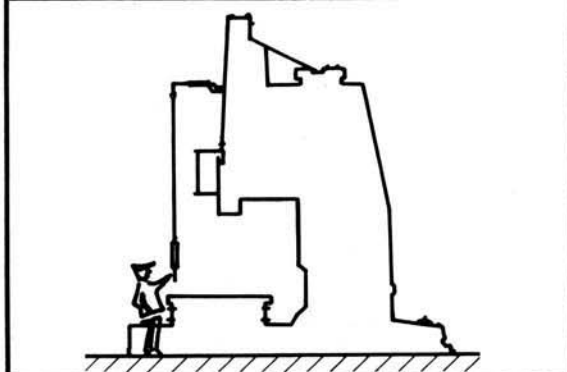
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①	⑦												
②	⑧												
③	M												
④	V												
⑤	S												
⑥													
	<p style="text-align: right;">4.2</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">①</td> <td style="width: 50%;"></td> </tr> <tr> <td>②</td> <td></td> </tr> </table>	①		②									
①													
②													
	<p style="text-align: right;">4.3</p>												
	<p style="text-align: right;">4.4</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">①</td> <td style="width: 50%;"></td> </tr> <tr> <td>②</td> <td></td> </tr> </table>	①		②									
①													
②													
	<p style="text-align: right;">4.5</p>												



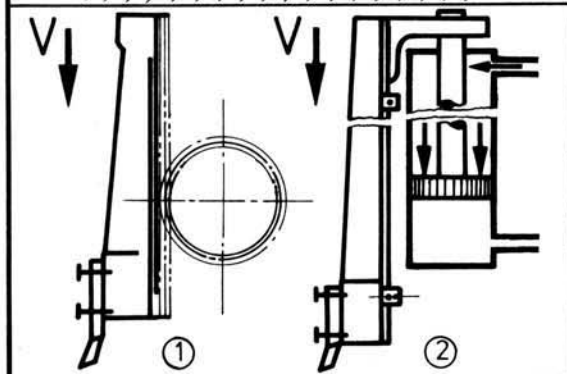


\_\_\_\_\_ 5.1

①  
②

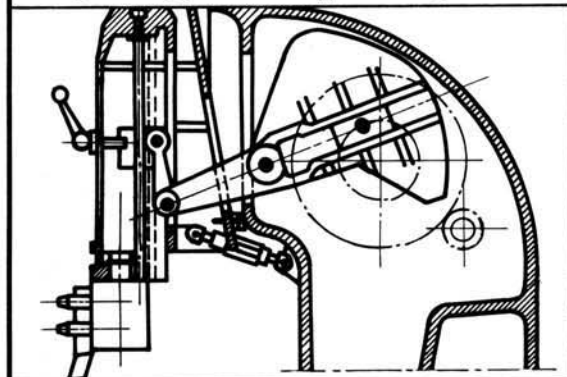


\_\_\_\_\_ 5.2

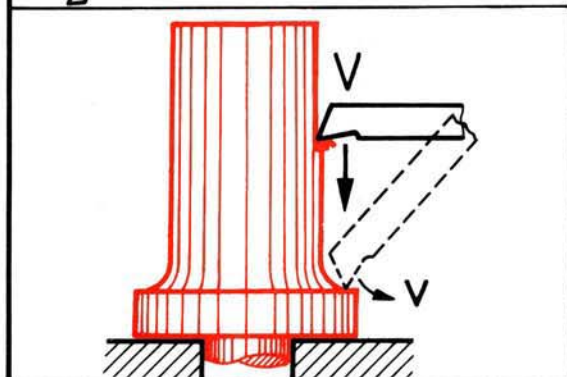


\_\_\_\_\_ 5.3

①  
②



\_\_\_\_\_ 5.4



\_\_\_\_\_ 5.5



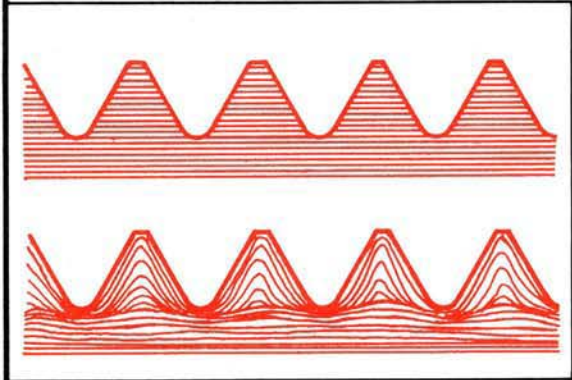


	<p style="text-align: right;">1.1</p> <p>d =</p> <p>d · π =</p> <p>P =</p> <p>∠ α =</p>
	<p style="text-align: right;">DIN(M) 1.2</p> <p>d =</p> <p>P =</p> <p><math>t_1 = 0,6495 \cdot P \approx 0,1 \cdot d =</math></p> <p><math>d_2 = d - 0,6495 \cdot P =</math></p> <p><math>d_1 = d - 1,299 \cdot P \approx 0,8 \cdot d =</math></p> <p>∠ 60° =</p>
	<p style="text-align: right;">ISO(M) 1.3</p> <p>d = D =</p> <p>P =</p> <p>d<sub>3</sub> =</p> <p>D<sub>1</sub> =</p> <p>d<sub>2</sub> = D<sub>2</sub> =</p> <p>∠ 60° =</p>
	<p style="text-align: right;">Whitworth(") 1.4</p> <p>d = D =</p> <p>P =</p> <p>d<sub>1</sub> =</p> <p>d<sub>2</sub> =</p> <p>∠ 55° =</p> <p>z =</p>
	<p style="text-align: right;">1.5</p> <p>1" =</p> <p>R 1" =</p> <p>1/2" =</p> <p>R 1/2" =</p> <p>3/4" =</p> <p>R 3/4" =</p>



<p>M 16 ① 1"</p> <p>M 16 x 1 ② (W 24 x <math>\frac{1}{10}</math>" )</p>	<p>_____ 2.1</p> <p>① M 16 = 1" =</p> <p>② M 16 x 1 = W 24 x <math>\frac{1}{10}</math>" =</p> <p>M 2 x 0,25 =</p> <p>M 50 x 1,5 =</p>
<p>F → [triangular] ← F</p> <p>F → [trapezoidal] ← F</p> <p>F → [square] ← F</p> <p>F → [rounded] ← F</p>	<p>_____ 2.2</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p>
<p>①</p> <p>②</p>	<p>_____ 2.3</p> <p>①</p> <p>②</p>
<p>①</p> <p>②</p>	<p>_____ 2.4</p> <p>①</p> <p>②</p>
<p>①</p> <p>②</p> <p>③</p>	<p>_____ 2.5</p> <p>①</p> <p>②</p> <p>③</p>





\_\_\_\_\_ 3.1

①

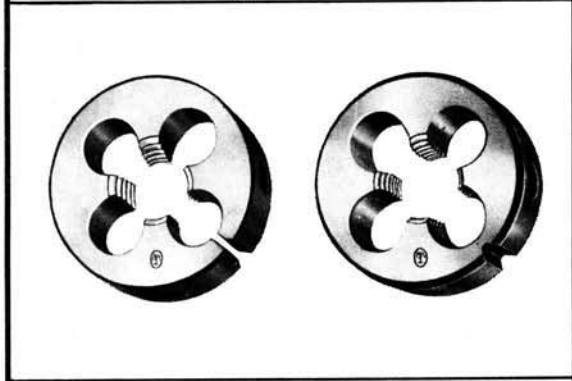
\_\_\_\_\_

②

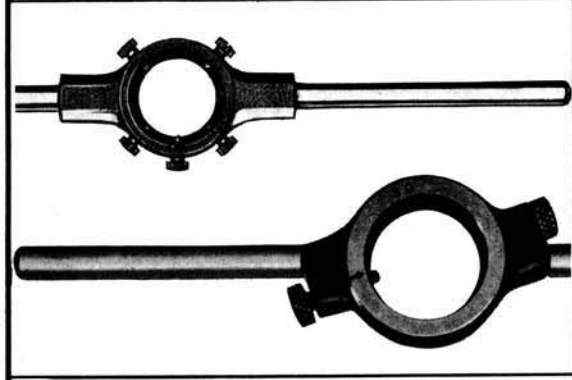
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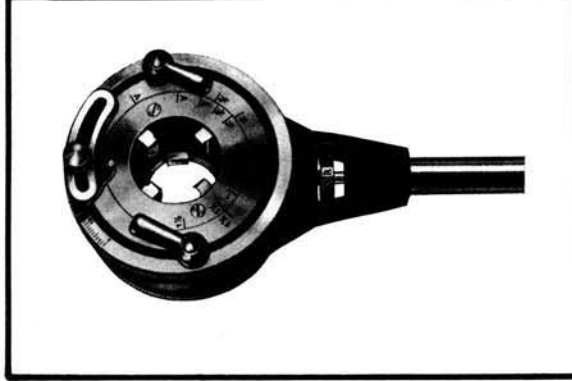
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\_\_\_\_\_ 3.3



\_\_\_\_\_ 3.4



\_\_\_\_\_ 3.5

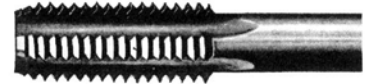




	<p>_____ 4.1</p> <p>①</p> <p>②</p>
	<p>_____ 4.2</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 4.3</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p> <p>①</p> <p>②</p> <p>③</p>

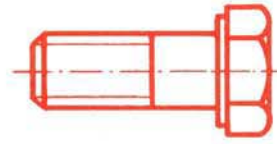


	<p>5.1</p>
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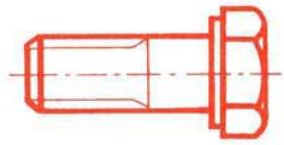


	<p>_____ 6.1</p>
	<p>_____ 6.2</p>
	<p>_____ 6.3</p>
	<p>_____ 6.4</p>
	<p>_____ 6.5</p>



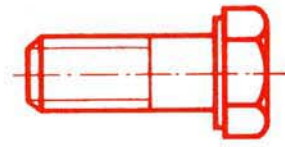


	<p style="text-align: right;">_____ 1.1</p> <p>① ② ③ ④ ⑤</p>																																				
<p style="text-align: center;"><b>M 16 x 50 DIN 931-6.8</b></p>	<p style="text-align: right;">_____ 1.2</p> <p>① ②</p> <p>M 16 _____ 50 _____ DIN 931- 6. _____ .8</p>																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><del>4A</del></td> <td><del>4D</del></td> <td><del>4S</del></td> <td><del>5D</del></td> <td><del>5S</del></td> <td><del>6D</del></td> <td><del>6S</del></td> <td><del>6G</del></td> <td><del>8G</del></td> <td><del>10K</del></td> <td><del>12K</del></td> <td>-</td> </tr> <tr> <td>3.6</td> <td>4.6</td> <td>4.8</td> <td>5.6</td> <td>5.8</td> <td>6.6</td> <td>6.8</td> <td>6.9</td> <td>8.8</td> <td>10.9</td> <td>12.9</td> <td>14.9</td> </tr> <tr> <td colspan="7" style="text-align: center;">□</td> <td style="text-align: center;">⊗</td> <td style="text-align: center;">□</td> <td style="text-align: center;">⊞</td> <td style="text-align: center;">⊞</td> <td style="text-align: center;">⊞</td> </tr> </table>	<del>4A</del>	<del>4D</del>	<del>4S</del>	<del>5D</del>	<del>5S</del>	<del>6D</del>	<del>6S</del>	<del>6G</del>	<del>8G</del>	<del>10K</del>	<del>12K</del>	-	3.6	4.6	4.8	5.6	5.8	6.6	6.8	6.9	8.8	10.9	12.9	14.9	□							⊗	□	⊞	⊞	⊞	
<del>4A</del>	<del>4D</del>	<del>4S</del>	<del>5D</del>	<del>5S</del>	<del>6D</del>	<del>6S</del>	<del>6G</del>	<del>8G</del>	<del>10K</del>	<del>12K</del>	-																										
3.6	4.6	4.8	5.6	5.8	6.6	6.8	6.9	8.8	10.9	12.9	14.9																										
□							⊗	□	⊞	⊞	⊞																										
	<p style="text-align: right;">_____ 1.4</p>																																				
	<p style="text-align: right;">_____ 1.5</p> <p>①</p> <p>②</p>																																				



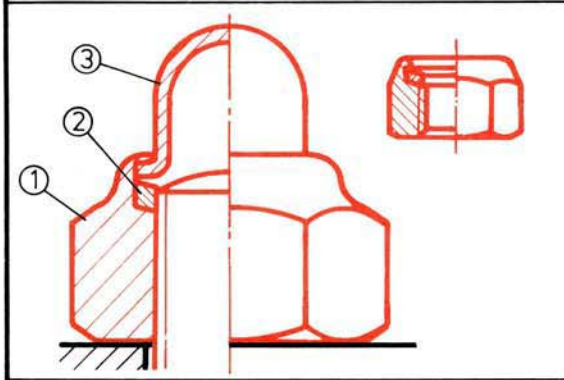
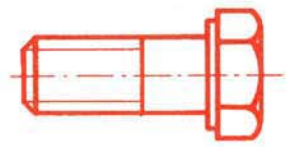
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	<p>_____ 2.3</p> <p>① ② ③</p>
	<p>_____ 2.4</p> <p>① ②</p>
	<p>_____ 2.5</p> <p>① ②</p>





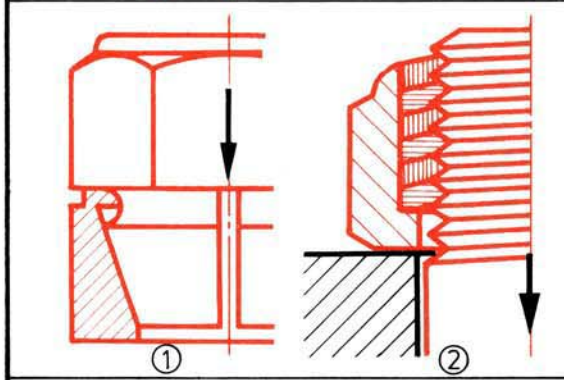
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<p style="text-align: center;">DIN 93                      DIN 432</p>	<p style="text-align: right;">_____ 3.2</p> <p>①</p> <p>②</p> <p>③</p>
	<p style="text-align: right;">_____ 3.3</p> <p>①</p> <p>②</p> <p>③</p>
	<p style="text-align: right;">_____ 3.4</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p>
	<p style="text-align: right;">_____ 3.5</p> <p>⚠</p>





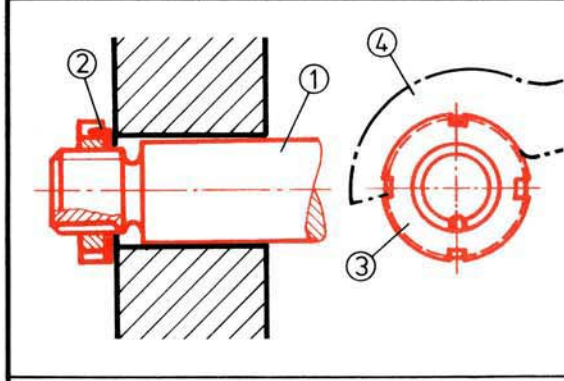
\_\_\_\_\_ 4.1

①  
②  
③



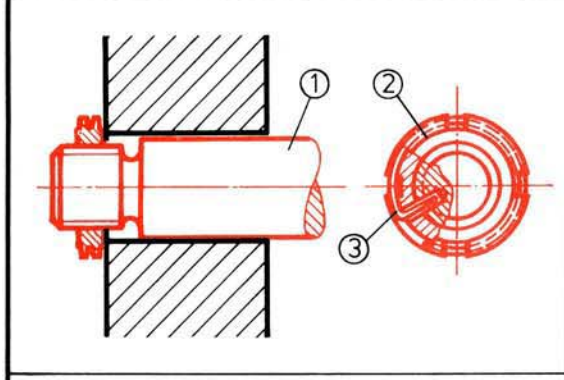
\_\_\_\_\_ 4.2

①  
②



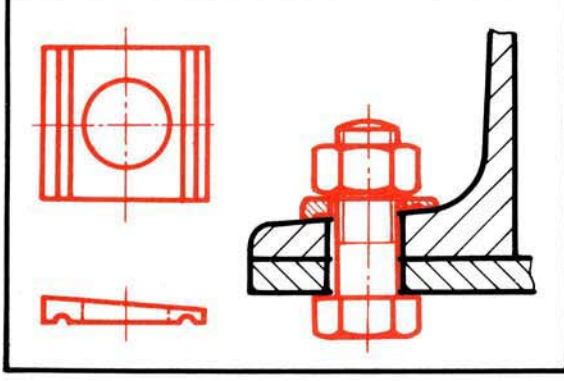
\_\_\_\_\_ 4.3

①  
②  
③  
④

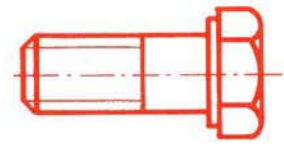


\_\_\_\_\_ 4.4

①  
②  
③

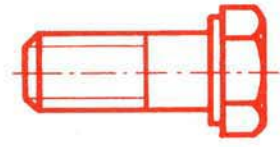


\_\_\_\_\_ 4.5



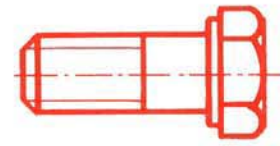
<p>①      ②      ③</p>	<p>_____ 5.1</p> <p>①</p> <p>②</p> <p>③</p>
<p>①      ②      ③</p>	<p>_____ 5.2</p> <p>①</p> <p>②</p> <p>③</p>
<p>①      ②      ③</p>	<p>_____ 5.3</p> <p>①</p> <p>②</p> <p>③</p>
<p>①</p> <p>②</p> <p>③</p>	<p>_____ 5.4</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 5.5</p>



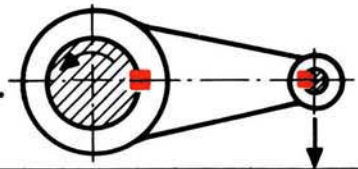


	<p>_____ 6.1</p>
	<p>_____ 6.2</p>
	<p>_____ 6.3</p>
	<p>_____ 6.4</p>
	<p>_____ 6.5</p>

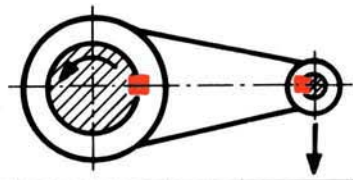




	<p>_____ 7.1</p>
	<p>_____ 7.2</p>
	<p>_____ 7.3</p>
	<p>_____ 7.4</p>
	<p>_____ 7.5</p>

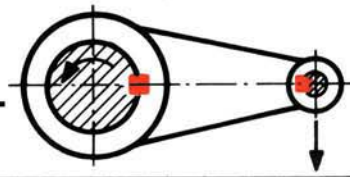


	<p>_____ 1.1</p> <p>①</p> <p>②</p>
	<p>_____ 1.2</p> <p>①</p> <p>②</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p>
	<p>_____ 1.5</p>

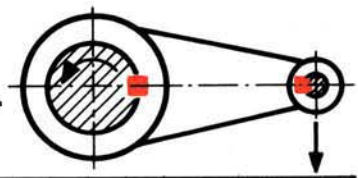


	<p>_____ 2.1</p>
	<p>_____ 2.2</p>
	<p>_____ 2.3</p> <p>①</p> <p>②</p>
	<p>_____ 2.4</p>
	<p>_____ 2.5</p>



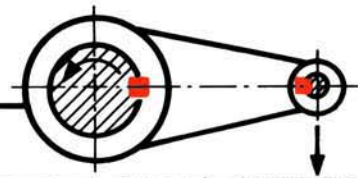


<p style="text-align: center;">①                      ②</p> <p style="text-align: center;">1 : 100</p>	<p style="text-align: right;">_____ 3.1</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">_____ 3.2</p>
	<p style="text-align: right;">_____ 3.3</p>
<p style="text-align: center;">①                      ②</p>	<p style="text-align: right;">_____ 3.4</p> <p>①</p> <p>②</p>
	<p style="text-align: right;">_____ 3.5</p>



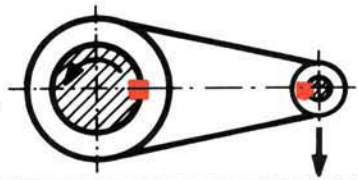
	<p>_____ 4.1</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>



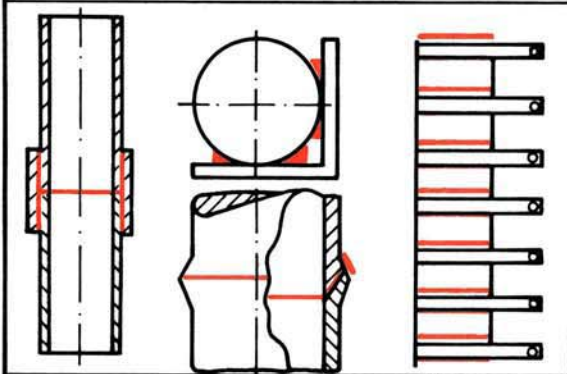


<p>① ② ③ ④ ⑤</p>	<p>_____ 5.1</p> <p>① ② ③ ④ ⑤</p>
<p>① ②</p>	<p>_____ 5.2</p> <p>① ②</p>
	<p>_____ 5.3</p>
<p>① ②</p>	<p>_____ 5.4</p> <p>① ②</p>
<p>① ②</p>	<p>_____ 5.5</p> <p>① ②</p>

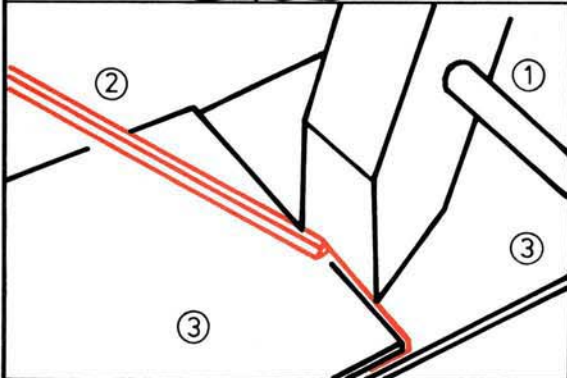




	<p>_____ 6.1</p>
<p>①                      ②</p>	<p>_____ 6.2</p> <p>①</p> <p>②</p>
<p>①                      ②</p>	<p>_____ 6.3</p> <p>①</p> <p>②</p>
<p>①                      ②</p>	<p>_____ 6.4</p> <p>①</p> <p>②</p>
<p>①                      ②</p>	<p>_____ 6.5</p> <p>①</p> <p>②</p>

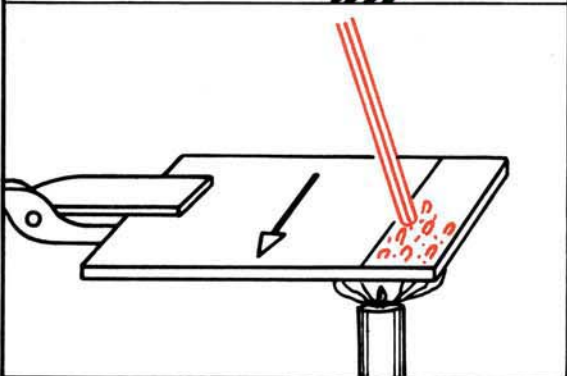


\_\_\_\_\_ 1.1

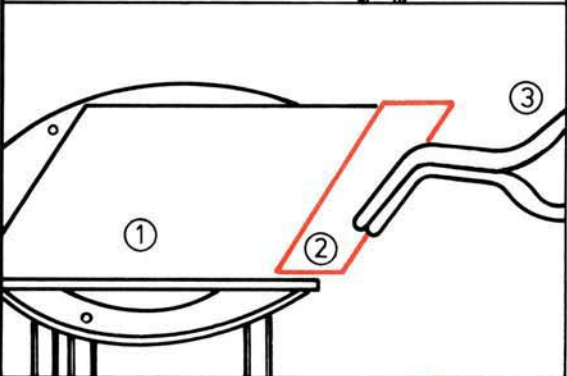


\_\_\_\_\_ 1.2

①  
②  
③

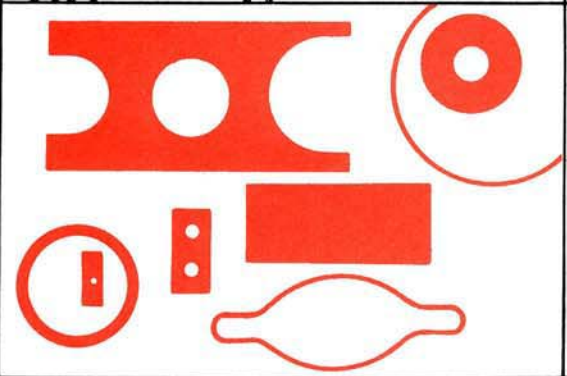


\_\_\_\_\_ 1.3

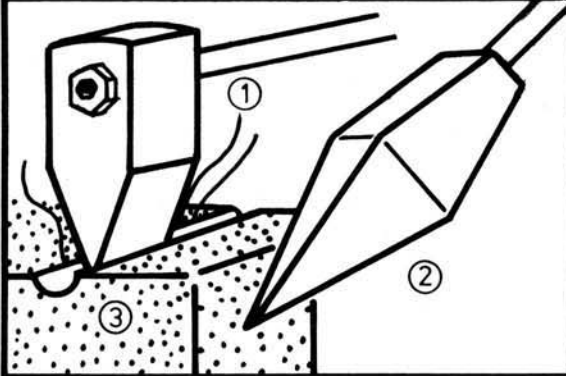
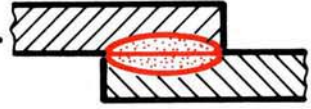


\_\_\_\_\_ 1.4

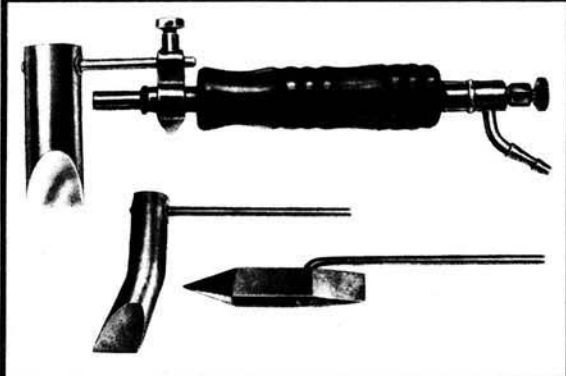
①  
②  
③



\_\_\_\_\_ 1.5



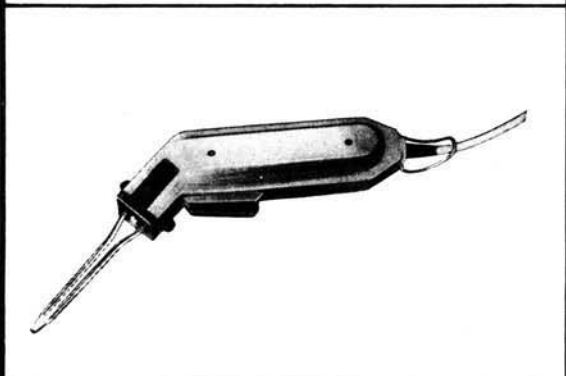
\_\_\_\_\_ 2.1  
①  
②  
③



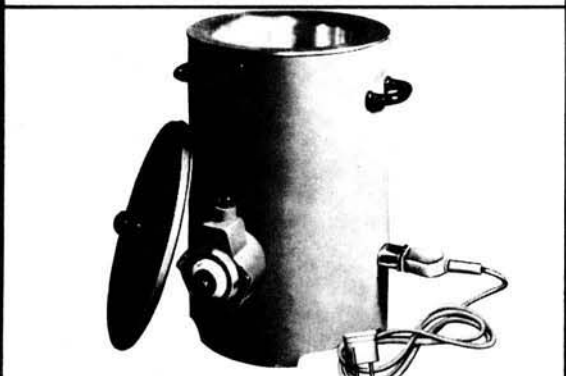
\_\_\_\_\_ 2.2



\_\_\_\_\_ 2.3

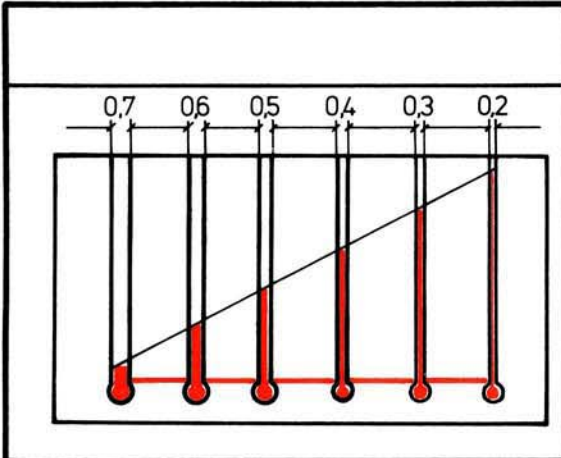


\_\_\_\_\_ 2.4

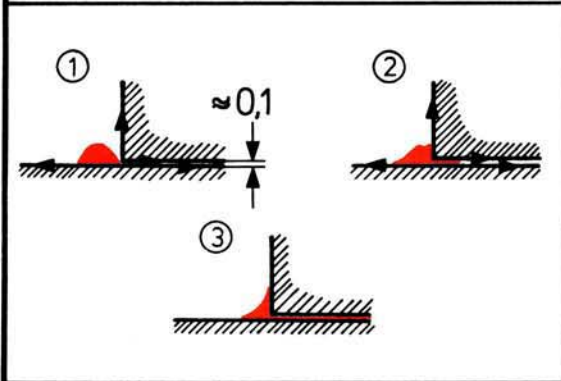


\_\_\_\_\_ 2.5



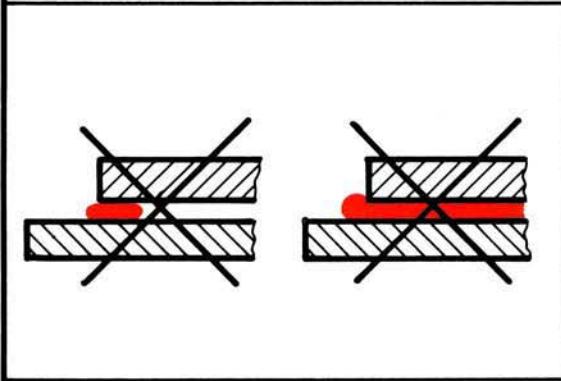


\_\_\_\_\_ 3.1

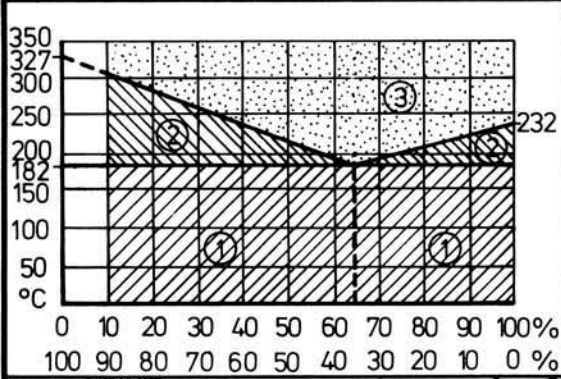


\_\_\_\_\_ 3.2

①  
②  
③

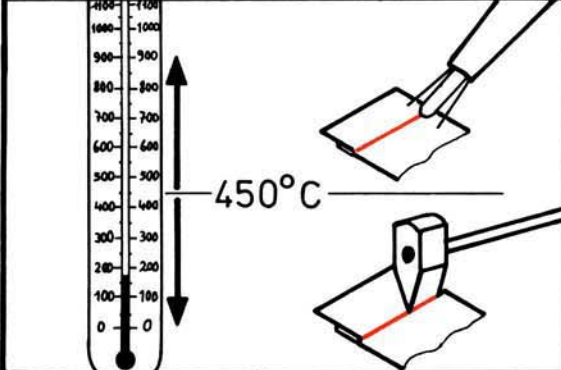


\_\_\_\_\_ 3.3



\_\_\_\_\_ 3.4

①  
②  
③

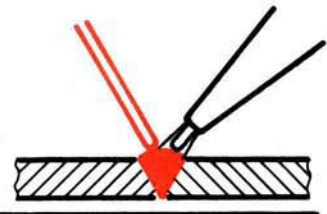


\_\_\_\_\_ 3.5

1080 °C —  
945...1020 °C —  
600...860 °C —  
320 °C —  
182...305 °C —  
182 °C —

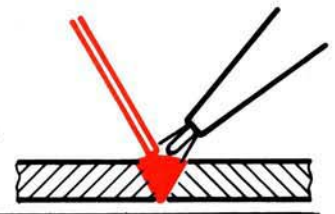
	<p>_____ 4.1</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p> <p>①</p> <p>②</p>
	<p>_____ 4.4</p> <p>①</p> <p>②</p>
	<p>_____ 4.5</p>





	<p>_____ 1.1</p>
	<p>_____ 1.2</p> <p>① ② ③ ④ ⑤</p>
	<p>_____ 1.3</p> <p>① ② ③ ④ ⑤</p>
	<p>_____ 1.4</p> <p>① ② ③ ④</p>
	<p>_____ 1.5</p>



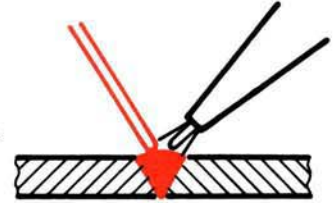


	<p>_____ 2.1</p> <p>O<sub>2</sub>-</p>
	<p>_____ 2.2</p> <p>H<sub>2</sub>-</p>
	<p>_____ 2.3</p> <p>C<sub>2</sub>H<sub>2</sub>-</p>
	<p>_____ 2.4</p> <p>C<sub>2</sub>H<sub>2</sub>-</p> <p></p>
<p>CaC<sub>2</sub>+2H<sub>2</sub>O=C<sub>2</sub>H<sub>2</sub>+Ca(OH)<sub>2</sub></p> <p>1kg CaC<sub>2</sub> ≈ 250... 300l C<sub>2</sub>H<sub>2</sub></p>	<p>_____ 2.5</p> <p></p>



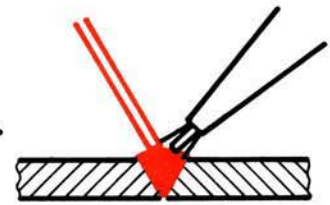
	<p>_____ 3.1</p> <p>①</p> <p>②</p>
	<p>_____ 3.2</p> <p>①</p> <p>②</p>
	<p>_____ 3.3</p> <p>①</p> <p>②</p>
	<p>_____ 3.4</p>
	<p>_____ 3.5</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p> <p>⑥</p> <p>⑦</p>



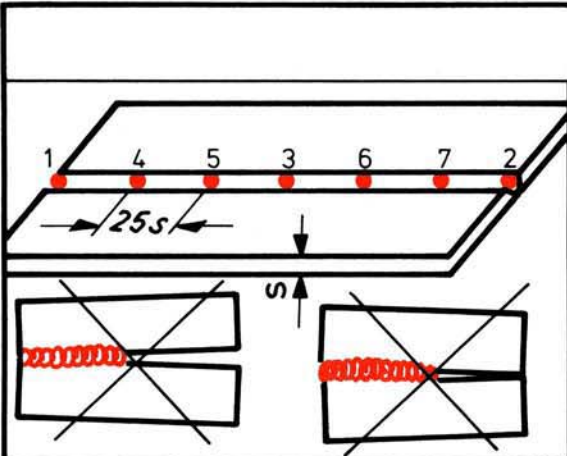


	<p>_____ 4.1</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>

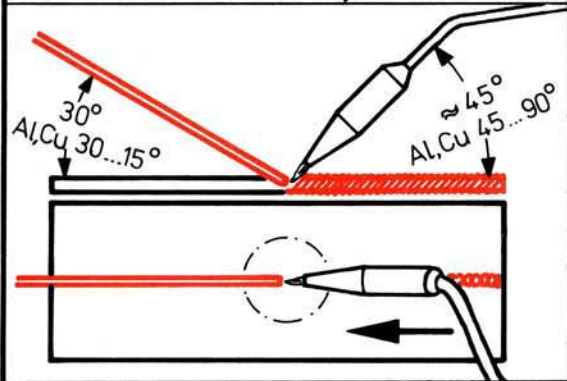




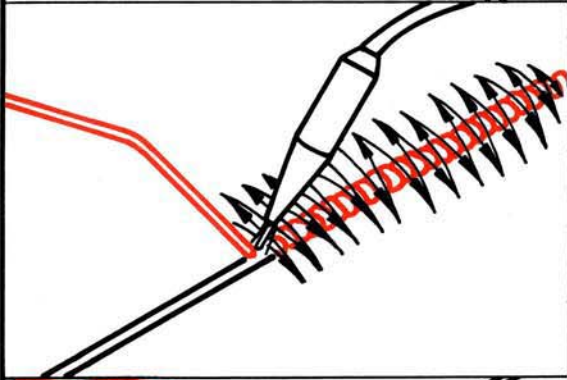
<p><math>C_2H_2 + O_2</math></p> <p>3200°C</p> <p>1200°C</p> <p>① ② ③</p>	<p>_____ 5.1</p> <p>①</p> <p>②</p> <p>③</p>
	<p>_____ 5.2</p>
	<p>_____ 5.3</p>
<p><math>H_2 + O_2</math></p> <p>2200°C</p>	<p>_____ 5.4</p>
<p><math>C_3H_8 + O_2</math>     <math>\cong 2700^\circ C</math></p>	<p>_____ 5.5</p>



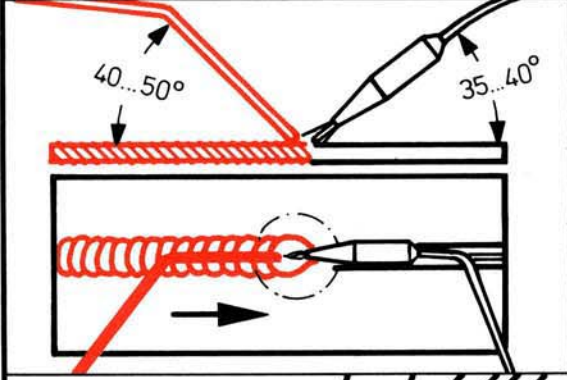
6.1



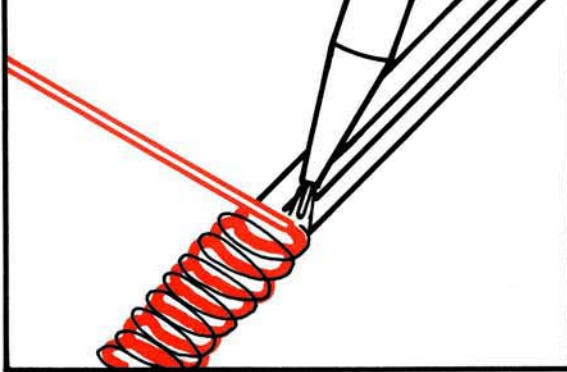
6.2



6.3

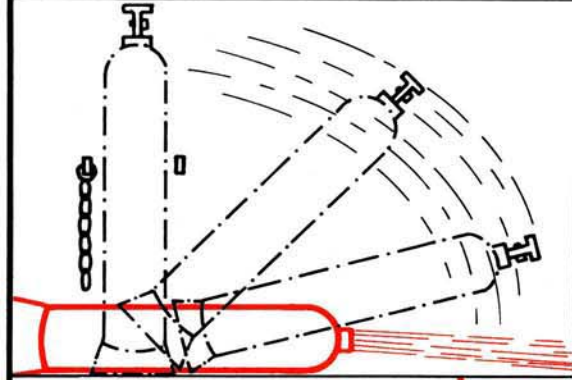
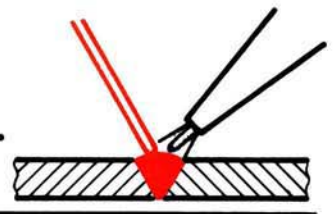


6.4

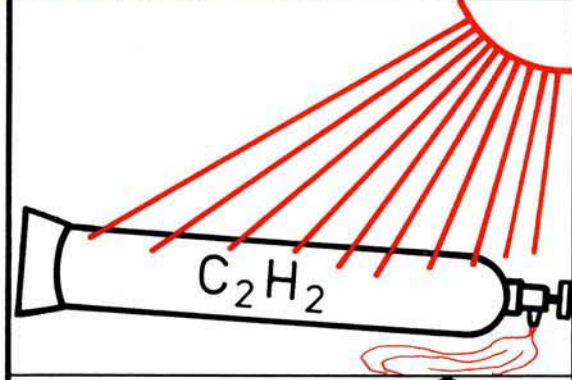


6.5





7.1  
⚠



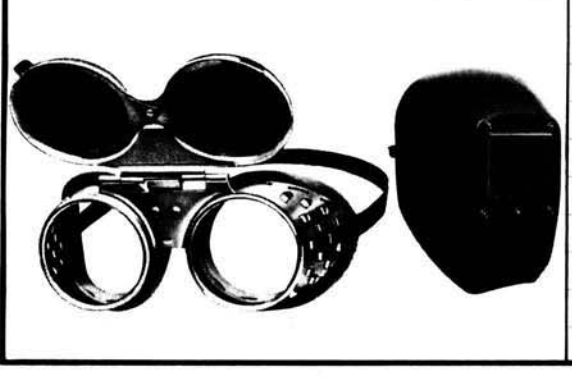
7.2  
⚠



7.3  
⚠

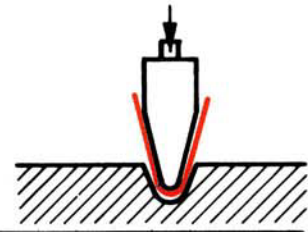


7.4  
⚠

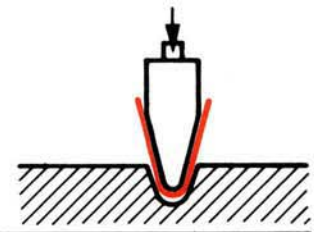


7.5  
⚠

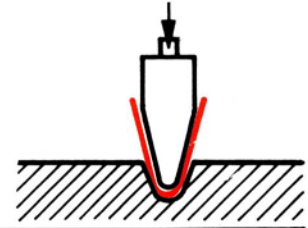




	<p>_____ 1.1</p>
	<p>_____ 1.2</p>
	<p>_____ 1.3</p>
	<p>_____ 1.4</p>
	<p>_____ 1.5</p>

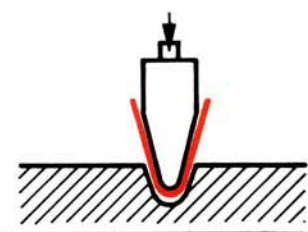


	<p>_____ 1.2</p> <p>①</p> <p>②</p>
	<p>_____ 2.2</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p>
	<p>_____ 2.3</p>
	<p>_____ 2.4</p>
	<p>_____ 2.5</p>

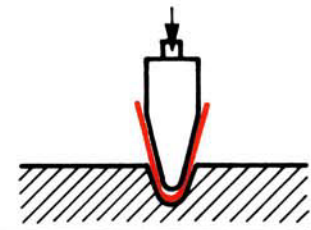


	<p>_____ 3.1</p>
	<p>_____ 3.2</p>
	<p>_____ 3.3</p> <p>① ② ③ ④ ⑤ ⑥</p>
	<p>_____ 3.4</p> <p>① ② ③ ④ ⑤</p>
	<p>_____ 3.5</p> <p>① ② ③ ④</p>

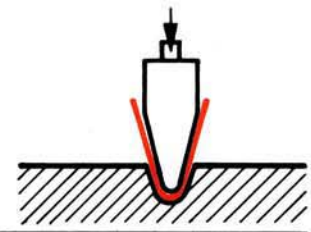




	<p>_____ 4.1</p> <p>①</p> <p>②</p>
	<p>_____ 4.2</p>
	<p>_____ 4.3</p>
	<p>_____ 4.4</p>
	<p>_____ 4.5</p>



	<p>_____ 5.1</p>
	<p>_____ 5.2</p> <p>①</p> <p>②</p>
	<p>_____ 5.3</p> <p>①</p> <p>②</p> <p>③</p> <p>④</p> <p>⑤</p>
	<p>_____ 5.4</p>
	<p>_____ 5.5</p>



	<p>_____ 6.1</p>
	<p>_____ 6.2</p>
	<p>_____ 6.3</p>
	<p>_____ 6.4</p>
<p>①                      ②</p>	<p>_____ 6.5</p> <p>① ②</p>