

## MACHINING

<b>Boring:</b>	
<i>Skoda drilling and milling machines with an optical reader</i>	
<u>maximum ranges:</u>	
X axis	12.500 mm
Y axis	4.000 mm
Z axis	1.600 mm
W axis	400 mm
<u>maximum weights:</u>	
on plate	100.000 kg
<u>option of machining with an angle head:</u>	
maximum extension	1.400 mm
positioning accuracy	0.02 mm
machining accuracy class	IT 7
roughness class	Ra=2.5-1.25
<i>Numerically controlled Sirius machining centres with the option of linear and circular interpolation</i>	
<u>maximum ranges:</u>	
X axis	3.000 mm
Y axis	1.600 mm
Z axis	1.200 mm
maximum workpiece weight	4.000 kg
positioning accuracy	0.01 mm
machining accuracy class	IT 7
roughness class	Ra=1.25
maximum diameter of the bored hole	Ø320 mm
<b>Milling:</b>	
<i>Waldrich numerically controlled gate milling machines</i>	
<i>Line numerically controlled gantry milling machines</i>	
<i>Argus numerically controlled machining centre</i>	
<i>These machine tools have the option of linear and circular interpolation</i>	
<u>maximum ranges:</u>	
X axis	16.000 mm
Y axis	4.500 mm
Z axis	1.200 mm
W axis	3.500 mm
maximum dimensions of the workpiece	16.000 x 4.500 x 4.000 mm
maximum weight (due to crane lifting capacity)	100.000 kg

<u>option of machining with an angle head:</u>	
maximum travel	1.200 mm
positioning accuracy	0.01 mm
machining accuracy class	IT 7
roughness class	Ra=2.5-1.25
<b><i>KC 4, KC 6 numerically controlled drilling and milling machines, without the option of linear and circular interpolation</i></b>	
<u>maximum ranges:</u>	
X axis	3.000 mm
Y axis	1.800 mm
Z axis	390 mm
W axis	860 mm
positioning accuracy	0.01 mm
machining accuracy class	IT 7
roughness class	Ra=2.5-1.25
maximum workpiece weight	10.000 kg
<b>Turning:</b>	
<b><i>Skoda SUT 315, SUT 200 conventional heavy lathes</i></b> <b><i>Conventional small, medium and heavy lathes</i></b>	
<u>maximum dimensions of workpieces:</u>	
diameter of the workpiece above the bed	Ø3.150 mm
diameter of the workpiece above the support	Ø2.650 mm
Workpiece length	L = 15,000 mm
maximum workpiece weight	100.000 kg
ability to turn cones with a copying device	
ability to grind with a support grinder	
thread cutting option, thread pitch	1-400 mm
the option of providing support in the steady rest	min. 300 mm to max. 2.300 mm
positioning accuracy	0.05 mm
<u>machining accuracy class:</u>	
when turning	IT 8
when grinding	IT 6
roughness class	Ra=2.5-0.63
<b><i>Vertical turning and boring mills</i></b>	
<u>maximum dimensions of the workpiece</u>	
diameter	Ø5.000 mm
height	2.500 mm

maximum workpiece weight	
(due to gantry crane capacity)	50.000 kg
positioning accuracy	0.05 mm
machining accuracy class	IT 8
roughness class	Ra=1.25

### **Gear wheel machining:**

#### ***Gear hobbing machines***

##### Cylindrical gears:

module range 1-20 in accuracy class 8	
according to Polish Standards and roughness	Ra = 2,5-5
module range 20-40 in accuracy class 10	
according to Polish Standards and roughness	Ra = 5
maximum wheel diameter	Ø5.400
max. tooth length	1,500 mm, $\beta = 0^\circ$
maximum tooth row angle	$\beta = 45^\circ$
pressure angle	$\alpha = 20^\circ$ ( $\alpha = 30^\circ$ )

#### ***Fellows slotting machines for cylindrical gears:***

maximum cut module	12
maximum diameter	1,250 mm
maximum tooth length	170 mm
maximum height of the workpiece	$\beta = 0^\circ$ , 240 mm
pressure angle	$\alpha = 20^\circ$ ( $\alpha = 30^\circ$ )

#### ***Niles ring grinding machines for cylindrical teeth***

##### Teeth grinding:

Module	3-16
pressure angle	$\alpha = 20^\circ$
maximum diameter	Ø800 mm
maximum tooth width	with $\beta = 0^\circ$ , 240 mm
maximum tooth row angle	$\beta = 45^\circ$
distance between the spikes	min. 300 mm - max. 800 mm
accuracy class	8 according to Polish Standards

#### ***"Sunderland" planer for herringbone gear teeth***

maximum diameter	Ø2.130 mm
minimum diameter	60 mm
maximum width of the machined gear	508 mm
module	3-16
tooth angle (constant)	$30^\circ$

<b><i>Oerlikon planer for bevel gears</i></b>	
maximum pitch diameter (depending on location)	1250-1600 mm
module	6-30
maximum tooth width	270 mm
maximum length of the forming cone	730 mm
<b><i>grinders:</i></b>	
<u>Claw</u>	
maximum diameter of the workpiece	Ø1.524 mm
maximum length of workpiece	10.360 mm
<u>to planes</u>	
maximum table width	400 mm
maximum grinding length	1000 mm
maximum height of the workpiece	300 mm
<b>Drilling and honing pipes:</b>	
<b><i>TMT30/80 drill and honing machine</i></b>	
<u>internal diameters:</u>	
drilling	Ø100-430 mm
honing	Ø100-500 mm
length	800-7500 mm
maximum diameter above the bed	Ø800 mm