

CAPSturn

Cycle time reduction and programming

What you can do with CAPSturn

- Reduce cycle time and machining cost
- Reduce CNC programming time
- Reduce trial part rejections
- Get scrap weight and scrap cost
- Reduce dependence on skilled CNC programmers
- Reduce time taken to respond to job quotes
- Does far more than a CAD/CAM software
- Does far more than a CNC programming software

Unique features of CAPSturn

Money Maker – reduce cycle time, machining cost

Money Maker

Machine: Fanuc-0T-18.5/22 kW
Job material: Stainless steels, austenitic

Part number: GT-6671
Part name: Shaft-LH

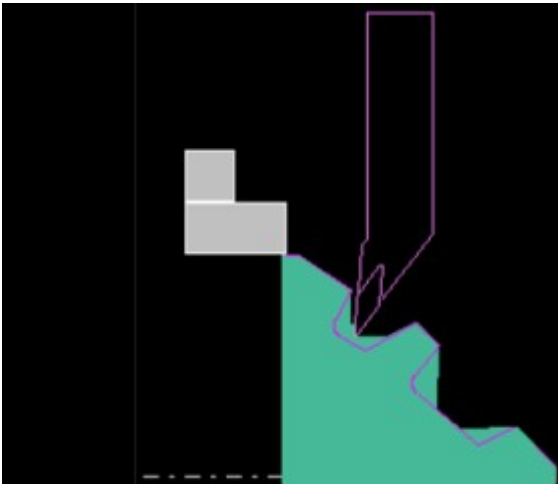
Sl. no.	Operation	Feed rate (mm/rev)	Cutting speed (m/min)	Depth of cut (mm)	Depth of cut max. (mm)	Power required (kW)	Power available (kW)	Torque required (Nm)	Torque available (Nm)	Time	% time	Cost
1	Plain face	0.438	200.0	1.000	7.92	4.4	14.8	20.8	70.6	00:00:18	3.9	1.5
2	Rough turn 1	0.219	200.0	3.000	7.92	8.0	12.6	203.0	321.1	00:04:18	55.1	21.6
3	Contour turn	0.438	300.0	3.000	4.00	19.6	14.8	278.5	210.2	00:00:41	8.9	3.5
4	Contour turn	0.438	300.0	3.000	4.00	19.6	14.8	93.6	70.6	00:00:10	2.2	0.9
5	Contour face	0.438	300.0	3.000	4.00	22.6	14.8	224.5	147.3	00:00:23	5.1	2.0
6	Finish face	0.200	166.8	0.000	4.00	0.0	14.8	0.0	265.1	00:00:14	3.0	1.2
7	Contour turn	0.358	200.0	2.000	4.00	7.9	14.8	167.7	315.3	00:00:54	11.5	4.5
8	Finish face	0.358	200.0	0.000	4.00	0.0	13.6	0.0	43.3	00:00:11	2.4	0.9
9	Finish turn	0.379	240.0	0.000	4.00	0.0	13.6	0.0	199.7	00:00:11	2.5	1.0
10	Finish turn	0.379	240.0	0.000	4.00	0.0	14.8	0.0	313.2	00:00:20	4.3	1.7

Batch quantity:

RMS power	<input type="text" value="9.1"/> kW	Machining time	<input type="text" value="00:07:49"/> Per piece	<input type="text" value="26:06:23"/> Per batch	<input type="button" value="Update times"/>	<input type="button" value="Save process"/>
Scrap volume	<input type="text" value="460.5"/> cc	Scrap weight	<input type="text" value="3.6"/>	<input type="text" value="718.3"/> kg	<input type="button" value="Load process"/>	
Machine rate	<input type="text" value="300.0"/> Rs./hr	Machining cost	<input type="text" value="38.8"/>	<input type="text" value="7750.3"/> Rs.	<input type="button" value="Help"/>	<input type="button" value="Close"/>
Scrap rate	<input type="text" value="80.0"/> Rs./Kg	Scrap sale value	<input type="text" value="287.3"/>	<input type="text" value="57467.1"/> Rs.		
		Net machining cost	<input type="text" value="-248.6"/>	<input type="text" value="-49716.7"/> Rs.		

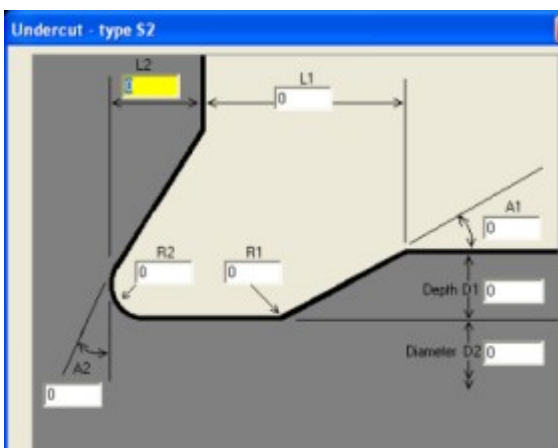
- Reduce cycle time by up to 30 %, in minutes.
- Spindle power, torque display –use max. spindle power available on machine
- Use max. depth of cut possible with tool
- Auto FS selection – for optimal use of spindle power and cutting tools.
- Cycle time calculation is extremely accurate, for job quotes, scheduling.
- Machining cost calculation.
- Scrap weight, scrap sale price calculation – know how much money you will make selling scrap.

Eliminate accidents and rejections in CNC turning



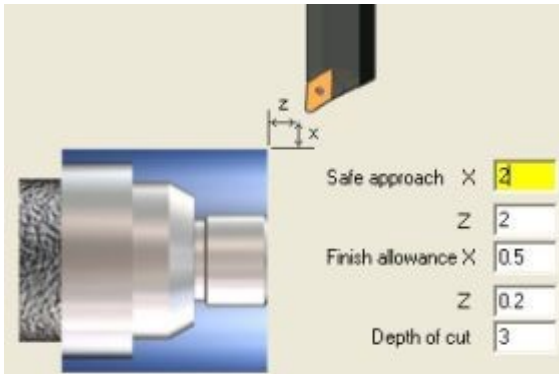
- *Automatic safe path logic* eliminates collisions.
- *Automatic tool gouge prevention* ensures zero rejections.
- *WISYWIG tool path simulation* eliminates dry run, single block checks.
- *Efficient CNC programs* with minimal air cut time.
- *Fully documented CNC programs* eliminate mis-communication.
- *Automatic shop floor documents* to give the shop floor and file away.
- *Variety of docs* – cycle time and process sheet, tools list, tool layout sheet.

Reduce CNC programming time



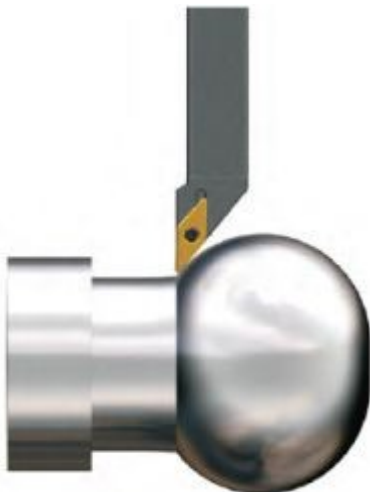
- *Inbuilt CAD* with quick definition of grooves, undercuts, shafts.
- *Import CAD drawings* as DXF or IGES.
- *Conversational*, very easy to use.
- Generates CNC programs that require **NO** editing before cutting.
- CNC programming software designed for use by operators.
- Can be learnt in 4 hours.

Reduce dependence on skilled CNC programmers



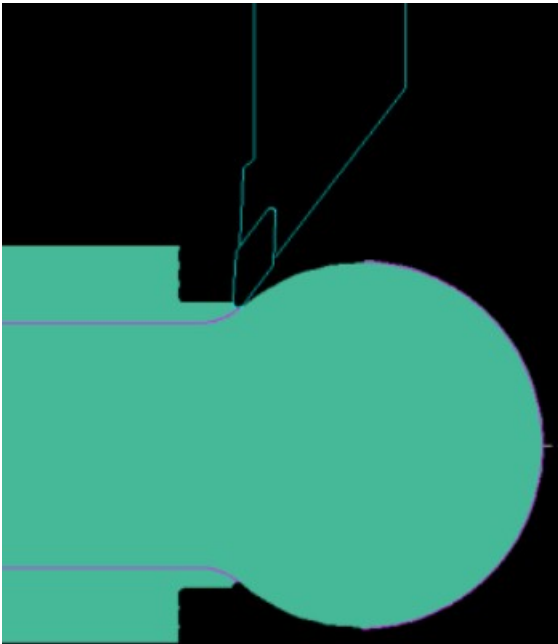
- *No CNC programming knowledge needed.* Machine operator can do the programming.
- *No dependence on part-time CNC programmers.* Operators can use the software.
- *Extremely short training time – 4 hours.*
- *Automatic cutting parameters selection* reduces knowledge required.
- *Tool selection guidance and default selection* from ready-made tools.
- *Very easy to use,* unlike a typical CAD/CAM software.

Take on complex parts



- *Advanced tool nose radius compensation* ensures contour accuracy, enables you to take on parts with complex contours.
- *CNC program is generated with compensated tool path* – no dependence on operators to enter tool nose radius and orientation on machine, that are rarely done, and result in part rejection.
- *Form tools* use is reduced, resulting in lower tool cost and lead time. ISO tools can be used a lot more

Eliminate trial part rejection



- *WYSIWYG (what you see is what you get) tool path simulation* ensures first-time-right parts.
- *Automatic safe tool path* logic eliminates collisions.
- *Tool gouge prevention logic* ensures zero part gouge even with wrong tool.
- *No need for single-block and dry run* checks at the machine.
- *NC programs are generated first-time right.*

Efficient CNC programs, interchangeable between machines

```
%
O1234
PART: SHAFT
PART NUM: 22385
PROGRAMMER: NK SINGH
DATE: 16-5-2015
G21 G95
G0 X300. Z100.
N1 T0101 (PCLNL 2525M12 R0.8)
G50 S3000
G96 S200 M04
(PLAIN FACE)
X114. Z7. M08
G72 W3. R0.5
G72 P25 Q40 U0. W0.5 F0.358
N25 G0 Z0.
N30 G01 X110. Z0.
N35 X-3.
N40 Z5.
G0 X114.
```

- *Compact CNC programs* with canned cycles and subprograms output for repetitive operations.
- *Supports all popular CNC control and machine combinations* – Fanuc, Sinumerik, Haas, Fagor, etc. with Jyoti CNC, Ace Designers, Haas, Victor, Hurco, Mazak, etc.

- *Generic postprocessor* allows you to configure CNC programs to the format that you are comfortable with.
- *CNC programming software* that generates programs first-time-right.
- *CNC programming software* that makes CNC programs that require zero editing.

Automatic shop documents generation

- *Shop documents* are generated in seconds, can be printed or emailed.
- *Docs generated* – Cycle time and process sheet, Tools list, Graphical tool layout sheet.
- *Make your shop system dependent*, not person dependent.
- *Eliminate part rejections caused by poor communication*. Give printed docs to shop floor.
- *Enable continuity in machining*. File docs for future reference, or save them as PDF / Excel files.

Cycle time sheet
KT Forge

Machine name: TT250-Siemens-802D-SL-18,5-22 kW
 Part number: 20
 Part name: Sample-mm-20
 Date: 26-09-2015 17:51

Job material: Stainless steels, austenitic, moderately difficult
 Fixture: Chuck
 Programmer: CADEM
 Setup number: 1

Sl. no.	Operation	Tool	Tool no.	Cutting speed (m/min)	Spindle speed (RPM)	Feed rate (mm/min)	Feed rate (mm/rev)	Cut length (mm)	Cutting time	Rapid time	Tool change time	Total time
1	Plain face	PCLNL 2525M12 R0.8	1	200.0	CSS	0.000	0.438	62.40	00:00:04	00:00:03	00:00:07	00:00:14
2	Rough tum 1	PCLNL 2525M12 R0.8	1	200.0	CSS	0.000	0.219	640.86	00:04:04	00:00:12	00:00:00	00:04:16
3	Contour tum	SVJBL 2525K16 R0.4	2	300.0	CSS	0.000	0.438	99.49	00:00:29	00:00:02	00:00:07	00:00:38
4	Contour tum	SVJBL 2525K16 R0.4	2	300.0	CSS	0.000	0.438	60.68	00:00:08	00:00:01	00:00:00	00:00:10
5	Contour face	SVJBR 2525K16 R0.4	3	300.0	CSS	0.000	0.438	96.58	00:00:11	00:00:02	00:00:07	00:00:20
6	Finish face	SVJBR 2525K16 R0.4	3	166.8	CSS	0.000	0.200	28.01	00:00:12	00:00:01	00:00:00	00:00:13
7	Contour tum	DCLNL 2525M12 R0.4	4	200.0	CSS	0.000	0.358	126.93	00:00:40	00:00:03	00:00:07	00:00:50
8	Finish face	SVJBL 2525K16 R0.4	5	200.0	CSS	0.000	0.358	9.33	00:00:00	00:00:00	00:00:07	00:00:08
9	Finish tum	SVJBL 2525K16 R0.4	5	240.0	CSS	0.000	0.379	103.46	00:00:11	00:00:00	00:00:00	00:00:11
10	Finish tum	SVJBL 2525K16 R0.4	5	240.0	CSS	0.000	0.379	73.50	00:00:19	00:00:00	00:00:00	00:00:20
*												

Summary

Cutting time:	00:06:22	<p>Note</p> <p>The cycle time calculated depends on the how accurately you have entered the machine parameters for the machine - rapid rate, axes and spindle acceleration times, tool change time, etc.</p> <p>To view to milliseconds accuracy, set 'Show times to millsec. accuracy' in the Settings option.</p>
Tool change time:	00:00:35	
Rapid motion time:	00:00:28	
Miscellaneous time:	00:00:04	
Cycle time:	00:07:29	

PDF
XLS
XML

Money maker

Money Maker

Machine: TT250-Siemens-802D-SL-18.5-22 kW
Job material: Stainless steels, austenitic.

Part number: 20
Part name: Sample-mm-20

Sl. no.	Operation	Tool	Feed rate (mm/rev)	Cutting speed (m/min)	Depth of cut (mm)	Depth of cut max. (mm)	Power required (kW)	Power available (kW)	Torque required (Nm)	Torque available (Nm)	Time	% time	Cost
1	Plain face	PCLNL 2525M12 R0.8	0.438	200.0	1.000	7.92	4.4	17.6	20.8	84.0	00:00:14	3.2	1.2
2	Rough turn 1	PCLNL 2525M12 R0.8	0.219	200.0	3.000	7.92	8.0	15.0	203.0	381.8	00:04:16	57.2	21.4
3	Contour turn	SVJBL 2525K16 R0.4	0.438	300.0	3.000	4.00	19.6	17.6	278.5	250.0	00:00:38	8.6	3.2
4	Contour turn	SVJBL 2525K16 R0.4	0.438	300.0	3.000	4.00	19.6	17.6	93.6	84.0	00:00:10	2.3	0.9
5	Contour face	SVJBR 2525K16 R0.4	0.438	300.0	3.000	4.00	22.6	17.6	224.5	175.2	00:00:20	4.5	1.7
6	Finish face	SVJBR 2525K16 R0.4	0.200	166.8	0.000	4.00	0.0	17.6	0.0	315.2	00:00:13	3.1	1.2
7	Contour turn	DCLNL 2525M12 R0.4	0.358	200.0	2.000	4.00	7.9	17.6	167.7	375.0	00:00:50	11.3	4.2
8	Finish face	SVJBL 2525K16 R0.4	0.358	200.0	0.000	4.00	0.0	16.0	0.0	50.9	00:00:08	1.8	0.7
9	Finish turn	SVJBL 2525K16 R0.4	0.379	240.0	0.000	4.00	0.0	16.0	0.0	235.0	00:00:11	2.6	1.0
10	Finish turn	SVJBL 2525K16 R0.4	0.379	240.0	0.000	4.00	0.0	17.6	0.0	372.5	00:00:20	4.5	1.7

Batch quantity

1

RMS power 9.3 kW

Scrap volume 460.5 cc

Machine rate 300.0 Rs./hr

Scrap rate 85.0 Rs./Kg

Per piece

Per batch

Machining time 00:07:29

00:07:29

Scrap weight 3.6

3.6 kg

Machining cost 37.1

37.1 Rs.

Scrap sale value 305.3

305.3 Rs.

Net machining cost -268.2

-268.2 Rs.

Update times

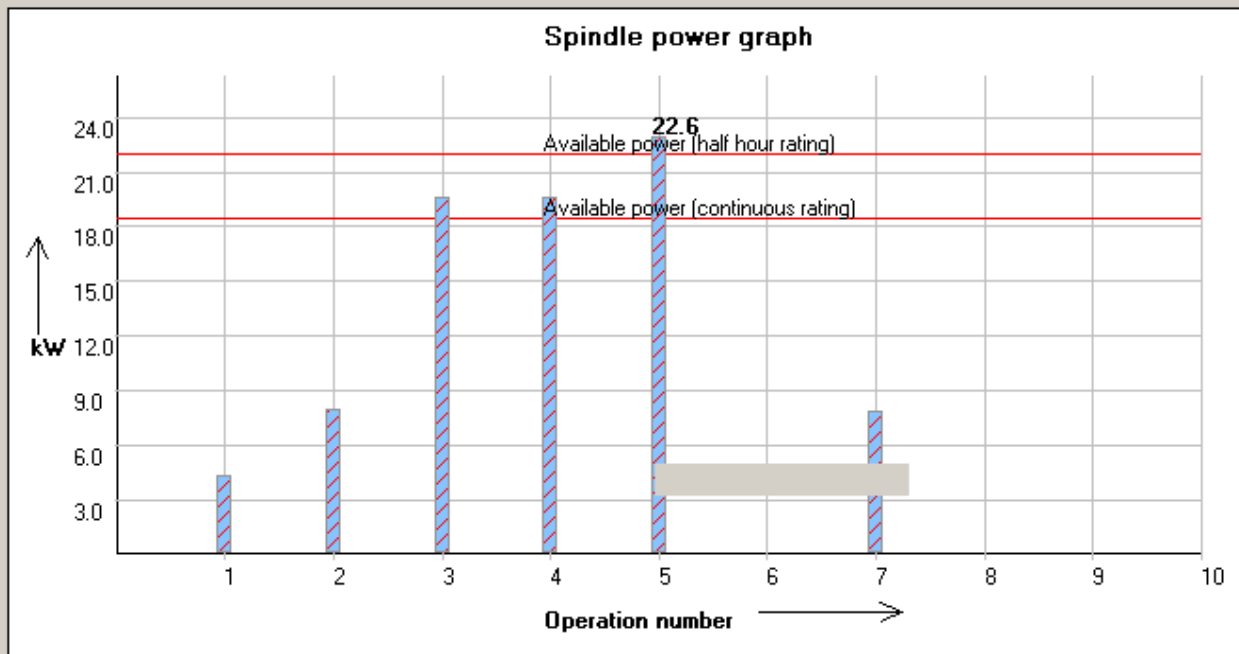
Save process

Load process

Help

Close

Spindle power graph



Double click on an operation's power bar to change its cutting parameters

Help

Close

Tools list

KT Forge

Machine name: TT250-Siemens-802D-SL-18,5-22 kW
 Part number: 20
 Part name: Sample-mm-20
 Setup number: 1

Date: 26-09-2015 17:51
 Fixture: Chuck
 Programmer: CADEM

SI no.	Operation	Tool	Tool no.	Tool offset no.	X offset	Z offset	Nose radius
1	Plain face	PCLNL 2525M12 R0.8	1				
2	Rough turn 1	PCLNL 2525M12 R0.8	1				
3	Contour turn	SVJBL 2525K16 R0.4	2				
4	Contour turn	SVJBL 2525K16 R0.4	2				
5	Contour face	SVJBR 2525K16 R0.4	3				
6	Finish face	SVJBR 2525K16 R0.4	3				
7	Contour turn	DCLNL 2525M12 R0.4	4				
8	Finish face	SVJBL 2525K16 R0.4	5				
9	Finish turn	SVJBL 2525K16 R0.4	5				
10	Finish turn	SVJBL 2525K16 R0.4	5				

PDF XLS XML

Tool layout sheet Part name : Sample-mm-20

<p>Operation name : Plain face 1 of 10</p> <p>Tool name : PCLNL 2525M12 R0.8</p>	<p>Operation name : Rough turn 1 2 of 10</p> <p>Tool name : PCLNL 2525M12 R0.8</p>
<p>Operation name : Contour turn 3 of 10</p> <p>Tool name : SVJBL 2525K16 R0.4</p>	<p>Operation name : Contour turn 4 of 10</p> <p>Tool name : SVJBL 2525K16 R0.4</p>