

Welcome to Automatic Quality Control of Your Manufacturing Process

How to increase your manufacturing quality with automatic quality verification

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Goal: Keep machines utilisation and parts quality high

Most modern manufacturing companies expect to run their production 24 hours, 7 days per week. It is very important to keep their machines utilisation high and manufacture as many parts as possible in shortest time. They use robots and other automatizations techniques to achieve this goal. Such approach is very profitable but it also creates some challenges.

One such challenge is quality control of increased number of parts. Many companies doesn't have quality department that works 24 hours / 7 days per week. Therefore parts quality measurements are performed only at limited time and on limited amount of parts. This increases a risk of long batch production that is not verified (for example over the night or weekend) and huge loses if an error in manufacturing process occurs.

Necessary quality assurance processes generate costs to manufacturing process and may decrease manufacturing equipment utilization since the manufacturing process needs to be stopped until quality evaluation from quality department in completed.

Automatic Quality Control System is an aid for modern manufacturing companies that helps keep the parts quality and machines utilisation high.



QUALITY



UTILIZATION

Automatic Quality Control of Manufacturing Process



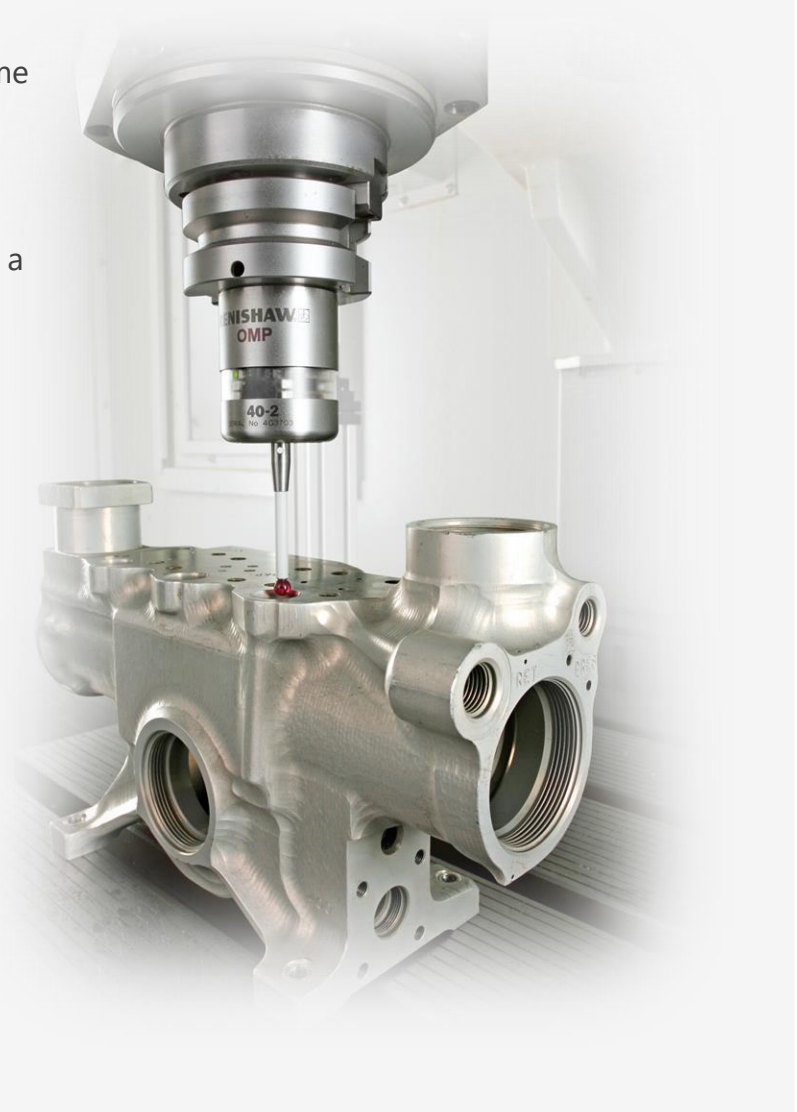
Solution: Automatic Quality Control of Manufacturing Process

Automatic Quality Control System for manufacturing process can save a lot of time and money by eliminating time consuming quality inspection procedures and prevent manufacturing errors.

Automatic Quality Control system evaluates manufactured components while they are still in CNC machine, without removing them from fixtures and without quality department equipment. The only equipment needed is a CNC machine with probing system.

Automatic Quality Control system is also very easy to implement and use and therefore it is very useful tool for machine operators.

PART / DRAWING NO.: KT55006		ORDER NO.: -				START	STOP
REVISION NO.: 1		OPERATION NO.: 3					
MACHINE NO.: 2174		PROGRAM NO.: PA095				CLEAR	NEW
FILE STATUS: No file		MEASUREMENT NO: 27					
MEASUREMENT STATUS: RUNNING		MEASUREMENT TIME: 11/27/2019 3:15:11 PM					
FEATURE NAME	NOMINAL	UPPER TOL.	LOWER TOL.	MEASUREMENT RESULT	DEVIATION	STATUS	
DISTANCE 26 SIDE LEFT	26	0	-0.052	25.975	-0.001	PASS	
DISTANCE 26 SIDE CENTER	26	0	-0.052	25.964	0.010	PASS	
DISTANCE 26 SIDE RIGHT	26	0	-0.052	25.978	-0.004	PASS	
TOTAL LENGTH 137	137	0	-0.05	136.947	0.028	FAIL	
D8 FIT HOLE	8	0.022	0	8.020	-0.009	PASS	
DIAMETER 23.2	23.2	0.1	-0.1	23.192	0.008	PASS	
D23 FIT HOLE	23	0.027	0	23.012	0.002	PASS	
DISTANCE 7.2	7.2	0.1	-0.1	7.214	0.014	PASS	



System applications: collect, evaluate, prevent, report

Automatic Quality Control System can work independently and deliver following advantages:

- 1 Automatically collect measurement results from CNC.
- 2 Evaluate measured dimensions, calculate deviations and present quality status on measured features in easy to read form.
- 3 Create measurement reports and store measurement results for future reference.
- 4 Automatically stop manufacturing process if critical feature dimensions are out of tolerance

AUTOMATIC CONTROL REPORT

PART / DRAWING NO.: KT55006		ORDER NO.: 45674		Stop after feature fail 3		START	STOP
REVISION NO.: 1		OPERATION NO.: 3		E-mail report nctec@gmail.com			
MACHINE NO.: 2174		PROGRAM NO.: PA095					
FILE STATUS: No file		MEASUREMENT NO: 27				CLEAR	NEW
MEASUREMENT STATUS: RUNNING		MEASUREMENT TIME: 11/27/2019 3:15:11 PM					
FEATURE NAME	NOMINAL	UPPER TOL.	LOWER TOL.	MEASUREMENT RESULT	DEVIATION	STATUS	
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D23 FIT HOLE	23	0.027	0	23.012	0.002		
DISTANCE 7.2	7.2	0.1	-0.1	7.214	-0.014		
DISTANCE 25	25	0.1	-0.1	24.980	0.020		
TRUE POSITION 0.04 DIR. X	7.8	0.02	-0.02	7.797	0.003		
TRUE POSITION 0.04 DIR. Y	15	0.02	-0.02	14.997	0.003		
DEPTH 7.2	7.2	0.2	0	7.279	0.021		
TRUE POSITION 0.04 DIR. X	7.8	0.02	-0.02	7.800	0.000		

Easy to implement enhancements

Depending from requirements, our system can be enhanced with extra functionality. For example:

- 1

Stop CNC machine if critical features are out of tolerance.
- 2

Send measurement reports to specified e-mail, cloud drive or other network service.

AUTOMATIC CONTROL REPORT

PART / DRAWING NO.: KT55006	ORDER NO.: 45674	1	Stop after feature fail 3	START	STOP
REVISION NO.: 1	OPERATION NO.: 3	2	E-mail report nctec@gmail.com		
MACHINE NO.: 2174	PROGRAM NO.: PA095			CLEAR	NEW
FILE STATUS: No file	MEASUREMENT NO: 27				
MEASUREMENT STATUS: RUNNING	MEASUREMENT TIME: 11/27/2019 3:15:11 PM				

- 3

Provide machine operator with corrective actions necessary to improve the process.

STATUS	CORRECTIVE ACTIONS
	Update T33 diameter offset
	Repleace tool T44

- 4

Stop manufacturing process if necessary manual measurement results are not filled in.

MANUAL CONTROL REPORT

PART / DRAWING NO.: KT55006	ORDER NO.: 45674			
REVISION NO.: 1	OPERATION NO.: 3			
MACHINE NO.: 2174	EMPLOYEE NO.: DK834			
MEASUREMENT STATUS: MISSING	MEASUREMENT NO: 23			
AUTOMATIC/MANUAL RATIO: 5	MEASUREMENT TIME: 11/27/2019 3:01:56 PM			

FEATURE NAME	NOMINAL	UPPER TOL.	LOWER TOL.	MEASUREMENT RESULT
M4 THREAD DEPTH	8	1	-1	
DIA. 23.2 HOLE DEPTH	38	0.2	-0.2	
DIA. 23 HOLE DEPTH (USE PIN)	124	0.1	-0.1	

Be ahead of competition! Make a difference!

- ❑ Automatic Quality Control software is extremely easy to implement and use – everyone can learn how to use it
- ❑ Automatic Quality Control software runs automatically 24/7, collects, evaluates, reports and can prevent errors in manufacturing process
- ❑ Automatic Quality Control software does not require any extra hardware, although additional TV screen that will present live measurement results from the machine is a nice and helpfull investment.

