SQPS-933

Veoneer Supplier Manual (VSM) - Production Trial Run Capacity Report Training

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Production Trial Run Capacity Report

Purpose

1. The primary purpose of the Production Trial Run Capacity report is to confirm the installed **capacity** during the different production trial runs.

2. The secondary purpose is to measure the **efficiency** of the Supplier process considering the following factors:

   - Equipment availability
   - Performance efficiency
   - Quality Rate

   and confirm the agreed installed capacity during both RFQ phase and Contract Review

3. This template will also allow to **track all issues identified** and the **progress** done during the different production trial runs. Issues will be tracked in the sheet "*Problem follow-up sheet*" and should be closed at Run @ Rate at the latest.

Production Trial Run Capacity Report

Overall view- Sections in the template

Calculated field

PRODUCTION TRIAL CAPACITY REPORT

Supplier Name / Supplier Numbe	Molding Company	123456	Supplie	Participants	Simon Smith
Part name / Part Number	RSU Housing	6xxxx2300E		function	Quality Engineer
achine time / # runs/week / Set-up minu	50.0%	3.00	20		
Bottleneck operation name =	Assembly	equipment availability %	Performance efficiency %	Quality rate %	OEE %
Quoted (expected) bottleneck OEE (%) breakdown	91.0%	90.4%	99.0%	81.5%	
g week demand / Max week demand (w/safet	15,000	18,000			
ctive hours/shift (minus breaks) / Shifts per	7.0	2			
orkdays per week reg / Workdays per week ma	5	6			
ilable regular hours/week / Target 'OK'	34.0	529	Veoneer	Participants	Jully Brown
				function	Project SQ

SECTION 1

PROCESS					TRIAL set up	CAPACITY						EFFICIENCY						
						TRIAL RUN				JUDGEMENT CAPACITY	identified Counter measures	QUALITY		CYCLE TIME PER PART		EQUIPMENT DOWNTIME		JUDGEMENT TRG OEE
OP. No.	PRODUCTION RUN	DATE	OPERATION NAME	BOTTLE-NECK?	SET-UP TIME (Minutes)	TIME (Minutes)	Nb. PARTS PRODUCED	Nb. GOOD PARTS	ACTUAL 'OK' PPH			QUOTED PROCESS SCRAP (%)	ACTUAL SCRAP (%)	IDEAL OR QUOTED CYCLE TIME (Sec)	ACTUAL CYCLE TIME (Seconds)	ACTUAL (Minutes)	Nb. STOPPAGES	
1	First Production	18-Jun-12	Molding	No	25	240	2050	2000	500	93.8%	No	1.0%	2.4%	3	6.9	5	2	41.7%
2	First Production	18-Jun-12	Assembly	Yes	20	240	2050	2000	500	94.4%	Yes	1.0%	2.4%	4	6.7	10	2	55.6%
1	Run @ Rate	18-Nov-12	Molding	No	23	240	2510	2500	625	117.5%	N/A	1.0%	0.4%	4	5.6	5	2	69.4%
2	Run @ Rate	18-Nov-12	Assembly	Yes	19	240	3000	3000	750	138.5%	N/A	1.0%	0.0%	4	4.8	2	2	83.3%

SECTION 2

Note: If your trial results indicate you have not reached your target level, please supply countermeasure action using the enclosed **Problem Follow-up sheet**

CAPACITY JUDGEMENT = TARGET 1 VERSUS ACTUAL 'OK' PPH

- ACTUAL 'OK' PPH >= 100% OF TARGET
- ACTUAL 'OK' PPH IS < 100% OF TARGET. COUNTERMEASURES IDENTIFIED
- ACTUAL 'OK' PPH IS < 100% OF TARGET. COUNTERMEASURES NOT IDENTIFIED

OEE JUDGEMENT COLOR DEFINITION

- OEE >= 80%
- OEE IS BETWEEN 50 AND 80%
- OEE < 50%
- OEE ERROR - CANNOT EXCEED 100%

SECTION 3 (informative)

Production Trial Run Capacity Report

Section 1

% machine time
Percent of machine/process time dedicated to this part.

 # runs/week
How many times this part will be run per week on average.

Set-up minutes
How many minutes to set-up (changeover) to this part.

Reg week demand
Regular weekly demand

Max week demand (w/safety)
Maximum weekly demand to cover temporary peak demands. This information should match what is agreed in the Cost Breakdown and Contract Review. Regular + 20%.

Bottleneck OEE (%):
See OEE color definition below. Lower OEE indicates higher potential to affect capacity, quality, or cost and should be investigated for potential improvements.

Shifts per day
Regular number of shifts per day.

PRODUCTION TRIAL CAPACITY REPORT

Supplier Name / Supplier Number	Molding Company		123456	Supplier Participants	Simon Smith	
Part name / Part Number	RSU Housing		6xxxx2300E			
% machine time / # runs/week / Set-up minutes	50.0%	3.00	20	function	Quality Engineer	
Bottleneck operation name = Assembly	Equipment availability	Performance efficiency %	Quality rate %	OEE %		
Quoted (expected) bottleneck OEE (%) breakdown	91.0%	90.4%	99.0%	81.5%		
Reg week demand / Max week demand (w/safety)	15,000		18,000			
Effective hours/shift (minus breaks) / Shifts per day	7.0		2			
Workdays per week reg / Workdays per week max	5		6	Veoneer Participants	Jully Brown	
Available regular hours/week / Target 'OK' PPH	340	529		function	Project SQ	

Effective hours/shift (minus breaks)
Example: if during a 8 hours shift, we have three breaks of 20 minutes, effective hours per shift will be: 8 hours - (60 min/60) = 7 hours

Available regular hours/week
Available hours-week= regular shifts per week x effective hours per shift.
(% machine time x effective hours per shift x regular workdays per week x # shifts per day) - (# runs per week x set-up hours per run).
(E4xE8xE9xG8)-(G4xH4/60)
Example (.5x7x5x2)-(3x20/60) = 35-1 = 34

Workdays per week reg
Regular number of workdays per week.

Target 'OK' PPH
Target OK PPH (Part per Hour)=
Maximum weekly capacity / available regular hours per week for this product. G7/E10.
Example 18000/34 = 529.

Workdays per week max
Maximum number of workdays per week to temporarily cover peak demands. This is for information only, is not used in calculations on this sheet.

Production Trial Run Capacity Report

Section 2

Calculated field

PRODUCTION RUN
Please state the type of Production Run:
- First Production Trial
- PPAP Production Trial
- Run @ Rate

BOTTLE-NECK?
Is this the bottleneck (slowest) operation as defined above?

SET-UP TIME (Minutes)
This is the time needed to put the process in conditions to start the production trial, yellow indicates setup for trial took longer than normal (compared to set-up minutes shown above).

ACTUAL 'OK' PPH
calculated field = (Number of good parts/time x 60).
First row example: J16/H16*60 = 2000 Good parts/240 minutes x 60 minutes/hour = 500 PPH.

CAPACITY JUDGEMENT
Compares quoted (expected) OEE to trial run OEE, factors in lowest one for bottleneck operations. Also compares quoted set-up time to trial run set-up time, factors in highest one (see Adjusted target OK PPH in column Y). See bottom of sheet for color definition.

TR OEE JUDGEMENT
The Trial Run Overall Equipment Effectiveness measures how effectively the process was utilized during the trial run, which has an effect on capacity. OEE = Equipment availability x Performance efficiency x Quality rate during the trial run.

PROCESS					TRIAL set up	CAPACITY						EFFICIENCY						
						TRIAL RUN						QUALITY		CYCLE TIME PER PART		EQUIPMENT DOWNTIME		
OP. No.	PRODUCTION RUN	DATE	OPERATION NAME	BOTTLE-NECK?	SET-UP TIME (Minutes)	TIME (Minutes)	Nb. PARTS PRODUCED	Nb. GOOD PARTS	ACTUAL 'OK' PPH	JUDGEMENT CAPACITY	identified measures Counter	QUOTED PROCESS SCRAP (%)	ACTUAL SCRAP (%)	IDEAL OR QUOTED CYCLE TIME (Sec)	ACTUAL CYCLE TIME (Seconds)	ACTUAL (Minutes)	Nb. STOPPAGES	JUDGEMENT TR OEE
1	First Production	18-Jun-12	Molding	No	25	240	2050	2000	500	93.8%	No	1.0%	2.4%	3	6.9	5	2	41.7%
2	First Production	18-Jun-12	Assembly	Yes	20	240	2050	2000	500	94.4%	Yes	1.0%	2.4%	4	6.7	10	2	55.6%
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Counter measures identified
For any judgement less than 100%, countermeasures must be identified on Problem Follow-up Sheet.

QUOTED PROCESS SCRAP (%)
From Supplier Cost Breakdown. To be referred to in the contract review. For information only, not used in calculations.

ACTUAL SCRAP (%)
(Number of parts produced - Number of Good parts) / Number of parts produced.

IDEAL OR QUOTED CYCLE TIME (Sec)
From supplier cost breakdown, to be referred to in the contract review. It refers to the ideal (best possible) cycle time per part. The cell will turn yellow if quoted (ideal) cycle is time longer than the actual cycle time, which should not happen.

ACTUAL CYCLE TIME (Seconds)
Cycle time Actual per part (seconds) = Time (min) x 60 / Number Parts Produced..

ACTUAL (Minutes)
Total Equipment downtime during the Trial Run.

Nb. STOPPAGES
Number of stoppages during the Production Run. For information only.

Production Trial Run Capacity Report

Section 3

Note: If your trial results indicate you have not reached your target level, please supply countermeasure action using the enclosed **Problem Follow-up sheet**	**CAPACITY JUDGEMENT = TARGET 1 VERSUS ACTUAL 'OK' PPH** ACTUAL'OK' PPH >= **100%** OF TARGET ACTUAL'OK' PPH IS **< 100%** OF TARGET. COUNTERMEASURES IDENTIFIED ACTUAL'OK' PPH IS < 100% OF TARGET. COUNTERMEASURES NOT IDENTIFIED	**OEE JUDGEMENT COLOR DEFINITION** OEE **> = 80%** OEE IS BETWEEN **50** AND **80%** OEE **< 50%** OEE ERROR - CANNOT EXCEED 100%

CAPACITY JUDGEMENT = TARGET 1 VERSUS ACTUAL 'OK' PPH

ACTUAL'OK' PPH >= **100%** OF TARGET

ACTUAL'OK' PPH IS **< 100%** OF TARGET. COUNTERMEASURES IDENTIFIED

ACTUAL'OK' PPH IS < 100% OF TARGET. COUNTERMEASURES NOT IDENTIFIED

OEE JUDGEMENT COLOR DEFINITION

OEE **> = 80%**

OEE IS BETWEEN **50** AND **80%**

OEE **< 50%**

OEE ERROR - CANNOT EXCEED 100%

Production Trial Run Capacity Report

Formulas (1/2)

- **CAPACITY (TRIAL RUN)**
  - **Target "OK" PPH (Part Per Hour) =**

$$\frac{\text{Regular capacity / available}}{\text{Available Regular Hours per week for this product}}$$

  - **Actual "OK" PPH (Part Per Hour) =**

$$\frac{\text{Number of good parts}}{\text{Time (min)}} \times 60$$

  - **Capacity Judgement (%) =**

$$\frac{\text{Actual "OK" PPT}}{\text{Target "OK" PPT}}$$

- **EFFICIENCY (QUALITY)**
  - **Actual scrap (%) =**

$$\frac{\text{Number of parts produced- Number of good parts}}{\text{Number of parts produced}}$$

- **EFFICIENCY (CYCLE TIME)**
  - **Actual (sec) =**

$$\frac{\text{(Time (min) Equipment downtime (min)} \times 60}{\text{Number of parts produced}}$$

Production Trial Run Capacity Report

Formulas (2/2)

EFFICIENCY

- **Actual TR (Trial Run) OEE = Equipment availability x Performance efficiency x Quality Rate**

- Equipment availability (%) = $\dfrac{\text{Time (min)} - \text{Equipment Downtime Actual (min)}}{\text{Time (min)}}$

- Performance efficiency (%) = $\dfrac{\text{Quoted Cycle time (sec)}}{\text{Cycle time actual (sec)}}$

- Quality rate (%) = $\dfrac{\text{Number of good parts}}{\text{Number of parts produced}}$

Production Trial Run Capacity Report

Problem follow up sheet

Production Trial Run Capacity Report
- Problem follow-up sheet -

Action No.	Production Run	Date	Process Name	Finding / Improvement potential	Root Cause	Corrective action	Responsible	Planned Correction Date (DD-MMM-YYYY)	PDCA	Final Completion Date (DD-MMM-YYYY)	Follow-up / Comments / References
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Thank You!