



## Production Planning

### Lesson 7 : Production Order Management

## Lesson Objectives



Objectives -On successful completion of this training module, you should have:

Production Order Management

Use of Production Order management

Production Order in the PP process flow

## Training Agenda



What is production Order Management

What is Use of Production Order management

Position of production Order in the PP process flow

Production Order Cycle

Production Order Creation

Goods Movements with respect to Production Order

## Training Agenda



Goods issue to Production Order

Goods Receipts for Production Orders

Master Data/Material Master/Bill of material/Routing

MB1A- Withdrawals for the order

CO11N- Production Order Confirmation

COGI-Error Handling

KKS2- Variance Calculation

## Training Agenda



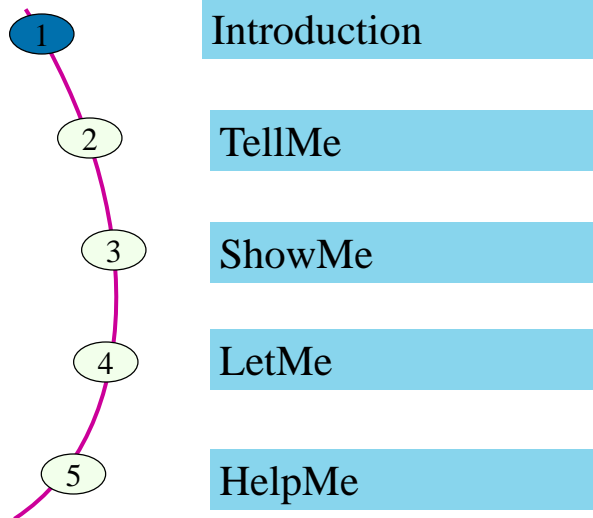
KO88-Cost settlement

Cost Analysis

MD04- Stock/Requirement list

Configuration Tips and Transactional code tables

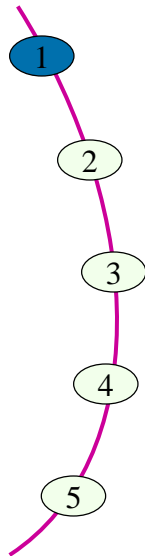
## Production Order Management



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# Production Order Management



Introduction

Process Flow

Particulars

Illustration

References

## Purpose



"A production order specifies which material is to be produced, at what time and how much work is required, where it is to be produced, which operations are required to do this. It also defines how the order costs are to be settled. "



## Use



You can use the production order to specify:

- What is to be produced
- When production is to take place
- Which capacity is to process the order
- How much production costs

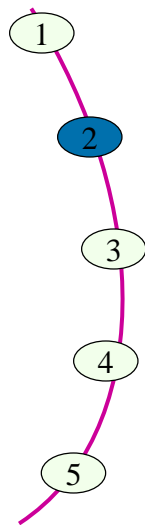
**“Production orders are used to control production within a company and also to control cost accounting”**

## Challenges



- Creating lists for controlling purposes
  - planned data control
    - actual scrap > planned scrap
    - actual start/finish time > planned start/finish time
- Creating lists as a basis for operative decisions
  - critical order control
    - selecting orders in delay
    - selecting orders with missing parts status
- Creating lists to perform business transactions
  - missing parts control
    - check availability

# Production Order Management



Introduction

**Process Flow**

Particulars

Illustration

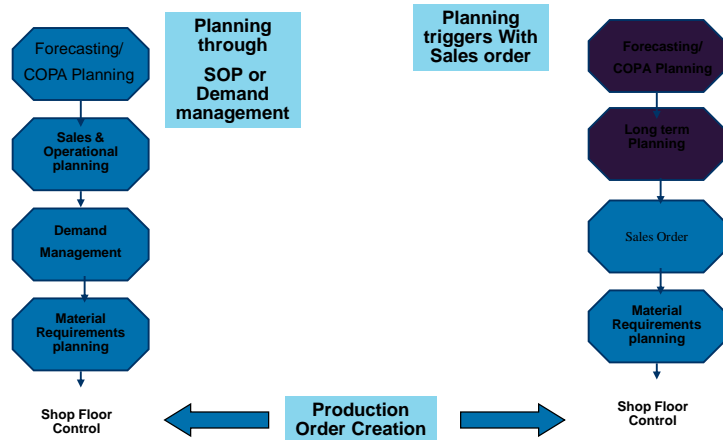
References



## Position of production Order in the PP process flow

Make to stock

Make to order



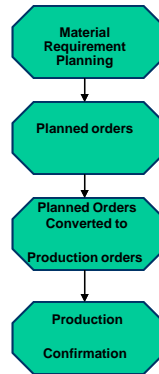
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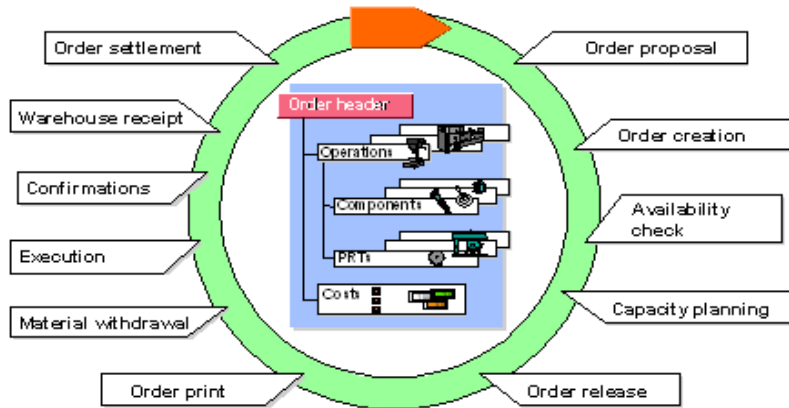
## Position of production Order in the PP process flow

Process Flow:





## Production Order Cycle



## Production Order Creation



- Planned orders generated in the MRP run can be converted individually or collectively to production orders.
- You can convert a planned order to a production order individually, for example, using the stock / requirements list or the MRP list.
- You can convert planned orders to production orders collectively, for example, based on MRP controller, MRP list or sales order
- The entire planned data like planned target times, activities database, master data, planned costs are available in production order

## Production Order Creation



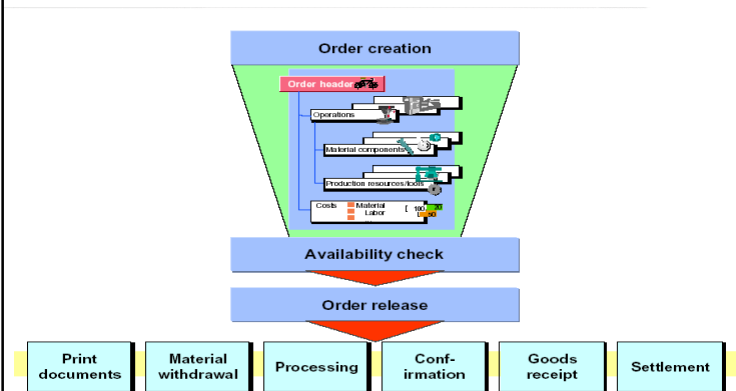
- The production order copies the following data from the routing:
  - Operations
  - Data on external processing
  - Work centers
  - Standard Values
  - Activity types
  - Bill of material assignments
  - Assignments of production resources/tools
- Availability for the components and capacity is checked
- When a planned order is converted to a production order, the dependent requirements of the components are converted to reservations



## Production Order Release



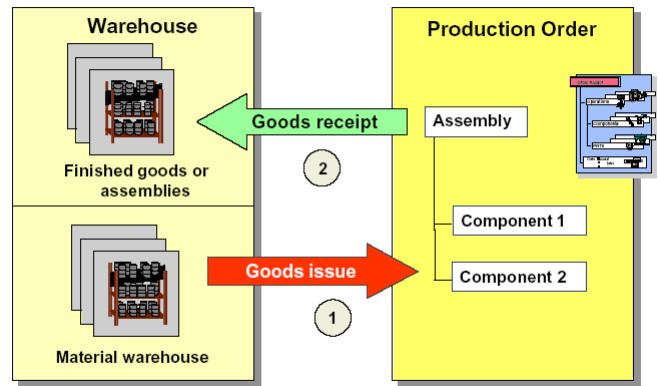
- Order release enables stock movements, printing of shop paperwork, confirmations



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## Goods Movements with respect to Production Order



## Goods Movements with respect to Production Order

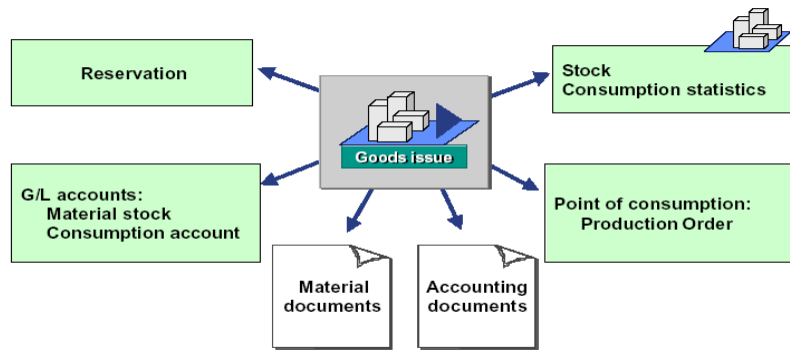


- 261- Back flushing/Component Withdrawal from plant storage location
- 101- Goods Receipt of Finished goods into storage location.

## Goods Movements with respect to Planned Order (Repetitive mfg)

- 261- Back flushing/Component Withdrawal from plant storage location
- 131- Goods Receipt of Finished goods into storage location.

## Goods issue to Production Order



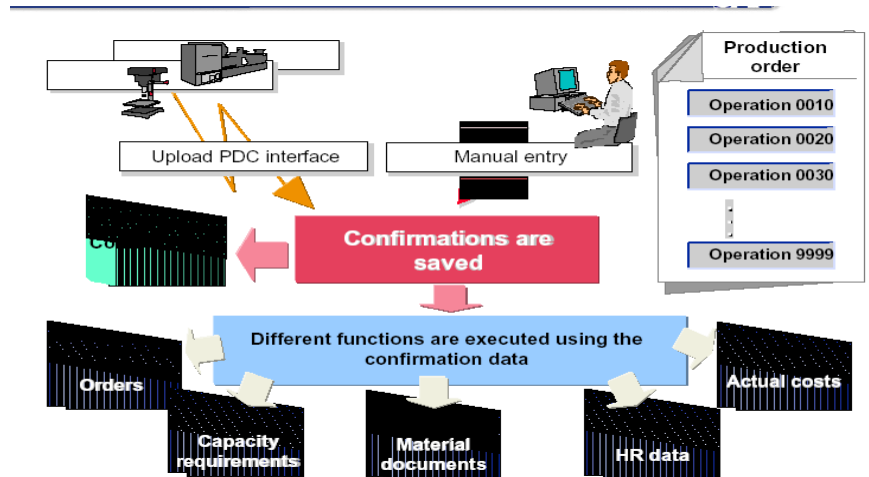
## Goods issue to Production Order



With respect to reservation and production order

After the goods issue the reservation is closed

# Production Order Confirmation



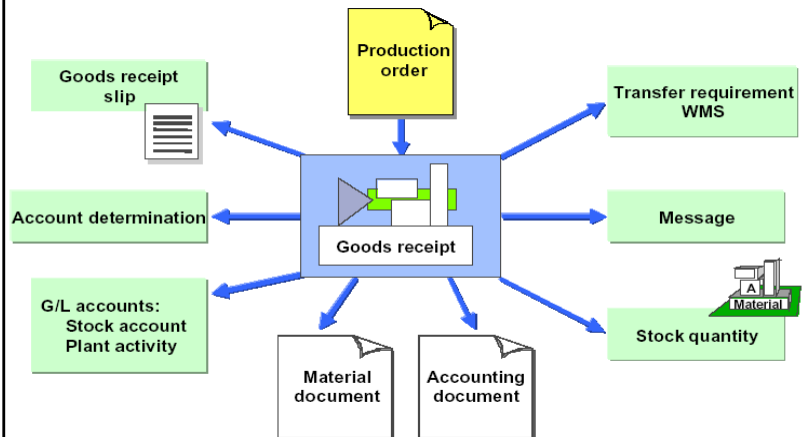
## Production Order Confirmation



- Report Quantity that was produced as yield, scrap and the quantity to be Reworked
- Actual work done or activity performed
- Which work center was used for the operation
- Who carried out the operation
- If back flushing and auto goods receipts are allowed the goods issue and goods receipts are performed automatically on confirmation
- Due to all the above inputs the system calculates the actual costs incurred for the production order



## Goods Receipts for Production Orders



## Goods Receipts for Production Orders



Process of taking Finished material into company's own stock

Control key of an operation decides whether or not automatic goods receipts of finished material is allowed on confirmation

Automatic goods receipt can only be posted for the final operation of the order

## Production Order Settlement



- Settlement of an order means ending a production order from a logistical viewpoint.
- The actual costs incurred for the order are settled to one or more accounts
- If the costs for the production order are settled to a material account, the order is credited each time material is delivered to stock. The material stock account is debited accordingly.
- If the costs for the production order are settled to another receiver (for example to a sales order), the order is credited automatically at the time of settlement. The cost-objects are debited accordingly

## Production Order Settlement



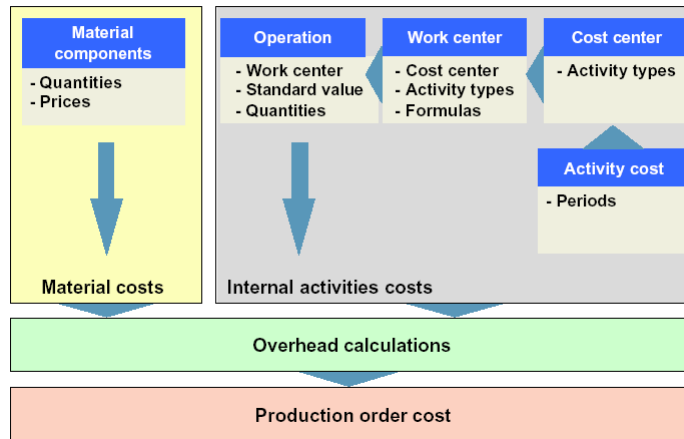
### Configuration for Settlement

- Settlement Profile.
- Settlement Structure
- Settlement Rule

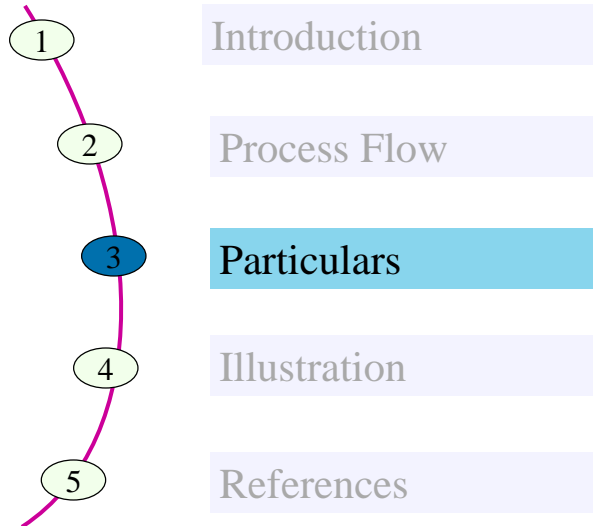
System automatically assigns a default settlement rule to the production order when the order is created.

The distribution rule consists of a cost receiver, a settlement share and a settlement type

## Production Orders: Costs



# Production Order Management



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## Environment

The module in which production order runs is  
SAP R3  
under Production Planning Module.

## Configuration



- Production order type
- Order type dependent parameters
- BOM and Routing Selection
- Confirmation parameters
- Settlement profile and rule
- Availability check



## Master Data



- Material Master (MRP Views, Work Scheduling View)
- Bill of Material (Components)
- Routing (Operations)

## Material Master



- Material master contains all the basic data, Sales data, Purchasing data, Planning data and Finance & Accounting related data.
- MRP 1, MRP 2, MRP 3, MRP 4 & Work Scheduling views are very important since these decide the behavior of the material in planning

## Bill of Material



- A bill of material decides what are the raw materials or semi-finished components are required to manufacture a finish product

### Display material BOM: General Item Overview

Sub-items | New entries | Header | Effectivity

Material: 135 test  
Plant: T280 TTE Polska Sp. z o.o.  
Alternative BOM: 1

Material | Document | General

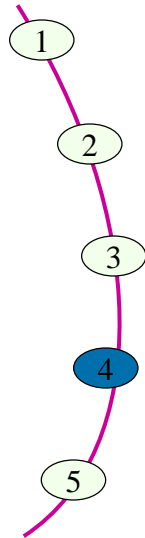
Item	ICt	Component	Component description	Quantity	Un	A...	Sls	Valid From	Valid To
0010	L	10276500	SWITCH-MAIN PUSH 25...	2.000	PC			10.01.2006	31.12.9999

## Routing



- Routing contains information about the operations being performed on the work centers / resources to produce a material
- Time required to manufacture the Finished Product
- Components to be consumed during operation
- Which work center will be used

# Production Order Management



Introduction

Process Flow

Particulars

**Illustration**

References

## MD04 – Stock / Requirement list



Stock/Requirements List as of 05:14 Hrs

Show Overview Tree

Material: T-F100 Pump PRECISION 100  
 MRP area: 1000 Hamburg  
 Plant: 1000 MRP type: PB Material type: FERT Unit: PCE

A	Date	MRP	MRP element data	Reschedul.	E	Rec./reqd qty	Available qty	Sto
06.03.2006	Stock						0	
18.07.2005	IndReq	VSF				10-	10-	
01.08.2005	IndReq	VSF				108-	110-	
01.09.2005	IndReq	VSF				111-	221-	
05.12.2005	IndReq	VSF				222-	443-	
28.12.2005	PrdOrd	800060003225/PP01/RE	18.07.2005	10		5	438-0002	
06.03.2006	PlOrd	0000037641/STCK	18.07.2005	30		5	433-0002	
27.03.2006	PlOrd	0000037642/STCK	01.08.2005	30		100	333-0002	
28.03.2006	PlOrd	0000037643/STCK	01.09.2005	30		111	222-0002	
25.04.2006	PlOrd	0000037644/STCK	06.12.2005	30		222	0 0002	

Additional Data for MRP Element

Plnd order: 0000037641 Make-to-stock Order finish: 06.03.2006 oR pr time: 0  
 Order qty: 5 PCE Order start: 27.02.2006 Proc. type: E  
 Scrap: 0 Planned opening: 13.02.2006 Order type: LA  
 Exception: 30 = Plan process according to schedule (18.07.05)  
 06 = Start date in the past

Convert planned order to production order (Ctrl+F1)

MD04 | ntibomsap12 | INS

# Production Order Creation



Order Functions Edit Goto Header Environment System Help

Production order Create: Header

Release order (CRHF1) 0001 Type PP01  
Material T-F100 Pump PRECISION 100 Pint 1000  
Status CRTD MACM SETC

General Assignment Goods receipt Control data Dates/qrys Master data Long text Administration SAP Event Mgmt

Quantities  
Total Qty 5 PCE Scrap portion 0.00 %  
Delivered 0 Expect/field/Var 0

Dates  
Basic Dates Scheduled Confirmed  
Finish 06.03.2006 13:50 06.03.2006 13:50  
Start 06.03.2006 07:00 06.03.2006 07:00  
Release 27.02.2006 00:00

Scheduling  
Type 4 Current date  
Reduction Reduction level 2  
Note No scheduling note  
Priority

Floats  
Scheduling margin 001  
Float bef. prod 2 Workdays  
Float after pro. 1 Workdays  
Release period 5 Workdays

All checked materials in order are available

CO40 ntbomsap12 INS

# Production Order Release



Order Functions Edit Goto Header Environment System Help

Production order Create: Header

Order: 1000000000001 Type: PP01  
Material: T-F100 Pump PRECISION 100 Pint: 1000  
Status: REL[PRC] CSER MACM SETC  
User Status: RLAL

General Assignment Goods receipt Control data Dates/qty Master data Long text Administration SAP Event Mgmt

Quantities  
Total Qty: 5 PCE Scrap portion: 0.00 %  
Delivered: 0 Expect/field/Var: 0

Dates  
Basic Dates Scheduled Confirmed  
Finish: 06.03.2006 13:50 06.03.2006 13:50  
Start: 06.03.2006 07:00 06.03.2006 07:00 00:00  
Release: 27.02.2006 06.03.2006

Scheduling  
Type: 4 Current date  
Reduction: Reduction level 2  
Note: No scheduling note  
Priority: ☐

Floats  
Scheduling margin: 001  
Float bef. prod: 2 Workdays  
Float after pro.: 1 Workdays  
Release period: 5 Workdays

Release carried out CO40 ntbomsap12 INS



## MB1A- Withdrawals for the order



SAP MB1A - Enter Goods Issue: Selection Screen

Movement Type: 261 (Q for order)  
Business Area: 1000  
Cost Center:   
Order: 69003566  
Recipient:   
Reservation: 26614

Item	Material	Quantity	UnE	S Loc	Batch	Re P	Int	Ita	F Is
<input checked="" type="checkbox"/>	1 T-B100	5	PCE	0001		1000	6		<input type="checkbox"/>
<input checked="" type="checkbox"/>	2 T-B200	5	PCE	0001		1000	7		<input type="checkbox"/>
<input checked="" type="checkbox"/>	3 T-B300	5	PCE	0001		1000	8		<input type="checkbox"/>
<input checked="" type="checkbox"/>	4 T-B400	5	PCE	0001		1000	9		<input type="checkbox"/>
<input checked="" type="checkbox"/>	5 T-T300	40	PCE	0001		1000	10		<input type="checkbox"/>

Entry 1 of 5

MB1A | nbomsap12 | INB

# CO11n- Production Order Confirmation



Confirmation Edit Goto User settings Environment System Help

Save (Ctrl+S)

## Enter time ticket for production order

Goods movements Actual data

Confirmation 86394  
 Order 60003566 Material T-F100 Pump PRECISION 100  
 Oper. activity 0060 Sequence 0 Abillefern an Lager  
 Work center T-P00 Plant 1000 Production Inspection II

Confirm type Partial confirmation ☐ Clear open reservations

lot sizes To confirm Unit  
 Yield 5 PCE  
 Scrap  
 Rework  
 Reason for Var.

activities

Power	To confirm	U	R	Already Confirmed	Planned total	U
Setup		M	<input type="checkbox"/>	0.000	0.000	M
Machine		M	<input type="checkbox"/>	0.000	0.000	M
Labor	0.417	M	<input type="checkbox"/>	0.000	0.417	M

personal data  
 dates  
 quality check  
 comments

CO11N ntbomsap12 IN6

# COGI- Error Handling



Program Edit Goto System Help

Automatic Goods Receipts: Error Handling

Execute (F8)

Plant 1000 to

Storage Location to

Material 1-F100 to

MHP Controller to

Movement Type to

Error Record to

Additional Conditions

VBS Element to

Sales Order

Error Work Area Number /

Error date from 00.00.00 To 00.00.00

Posting date from To

Selection Criteria for Assembly

Order Category to

Order to

Material to

Production Version to

Planning Plant to

Production Scheduler to

VBS Element to

Sales Order

Output Criteria

Maximum Selected Lines

☐ Individual Records

☒ No record was found for selection

COGI infomsap12 INB

## KKS2- Variance Calculation



Variance Calculation: Initial Screen

Order: 60003566 Pump PRECISION 100

Parameters

Period: 2

Fiscal Year: 2006

☐ All target cost vms 000,001,002

☒ Selected Target Cost Vms 000

Processing options

☒ Test Run

☒ Detail list

KKS2 28 nBomsap12 INB

## KO88- Cost settlement



SAP

Settlement Edit Goto Extras Environment System Help

Actual Settlement: Order

Settlement Rule

Order 60003566

Parameters

Settlement period 1 1

Fiscal Year 2000

Processing type 1 Automatic

Posting period

Asset value date

Processing Options

☒ Test Run

☐ Check trans. data

KO88 ntbonsap12 INB

## Cost Analysis - Example



SAP Production Order: 60003566, Material: 1-F168, Status: REL, PCH, User Status: RLAL.

**Costs** menu options: Missing parts, WM pick list, Documented Goods Movements, Graphic, Logs, Capacity planning table, Change management, Original Batch, Back.

**Quantities**

Total Qty	5
Delivered	5

**Dates**

	Basic Dates	Scheduled	Confirmed
Finish	06.03.2006 13:58	06.03.2006 13:58	06.03.2006
Start	06.03.2006 07:00	06.03.2006 07:00	06.03.2006 05:37
Release		27.02.2006	

**Scheduling**

Type: 4 Current date

Reduction: Reduction level 2

Note: No scheduling note

Priority: ☐

**Floats**

Scheduling margin	001
Float bef. prod.	2 Workdays
Float after pro.	1 Workdays
Release period	5 Workdays

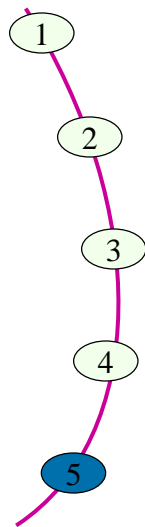
Footer: CO03 | ntbomsap12 | RNS







# Production Order Management



Introduction

Process Flow

Particulars

Illustration

References



## References

## Tips and Tricks

## Additional Info

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CONFIGURATION TIPS

TRANSACTION CODES

Tables

## Configuration Tips



1. The Bills of Materials in relation to the Shop Floor Production Order.
2. Define the Production Order Types
3. How to configure the Production Order User Status?
4. Where-is the Production Order Type used?
5. Define the Production Order Type-dependent Parameters

## Configuration Tips



1. Define Checking Control
2. Define Confirmation Parameters
3. Define Scheduling Parameters for Production Orders
4. Define Number Range
5. Define selection profiles for the Order Information System
6. Where-is the Selection Profile used?
7. Define the Production Operations Control key

## Configuration Tips



1. Where-is the Control key used?
2. Define formula parameters for Work Center
3. Where-is the Work Center Formula Used?
4. Define the Production Scheduling Profile
5. Define Production Scheduler
6. Where-is the Production Scheduling Profile and Production Scheduler Used?

## Configuration Tips



1. Define User Exits Selection
2. Select Routing Automatically
3. Where do you define the Usage and Status?
4. Define Default Values If No Routing Exists
5. Define Priorities for BOM Usages
6. Define Applications for BOM Explode

## Configuration Tips



1. Define Alternative Determination for Production
2. Define Checking Group
3. Define Checking Rule
4. Define Scope of Check
5. Specify Scheduling Type
6. Define Standard Value Keys



## Configuration Tips



1. Where-is the Standard Value Key used?
2. Define Scheduling Margin Key
3. Define Capacity Categories
4. Where-is Capacity Categories used?
5. Define Single Screen Entry for Time Ticket Confirmations

## Configuration Tips



1. Maintain Language-Dependent Texts
2. Define Reasons for Variances for Production Scrap
3. Where-is the Production Reason Code used?
4. Define Print Control for Shop Floor Papers



MD04

Converting the Planned Order into a Production Order .

MB1A

Withdrawing the Material for the Production Order

CO11N

Confirming the Production Order

KO88

Checking the Production Order Settlement



### Production Planning Tables

MAST	Material BOM
STKO	BOM Header
STPO	BOM Positions (detail)
MAPL	Assignment fo Task Lists to Materials
PLKO	Routing Group Header
PLSO	Routing Group Sequence
PLPO	Routing Group Operations
AFKO	Production Order Header
AFPO	Production Order Position (details)

Add instructor notes here.

## Summary



A production order specifies which material is to be produced, at what time and how much work is required, where it is to be produced, which operations are required to do this. It also defines how the order costs are to be settled. The function of Demand Management is to determine requirement quantities and delivery dates for finished products assemblies.

Planned orders generated in the MRP run can be converted individually or collectively to production orders.

You can convert a planned order to a production order individually, for example, using the stock / requirements list or the MRP list.

If back flushing and auto goods receipts are allowed the goods issue and goods receipts are performed automatically on confirmation

Settlement of an order means ending a production order from a logistical viewpoint

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Add the notes here.

Add instructor notes here.

## Review Questions



1. *The actual costs incurred for the order are settled to one or more accounts*

*Check whether the statement is true or false*

- a. True
- b. False

2. A production order specifies which material is to be produced

Check whether the statement is true or false

- a. True
- b. False

3. Mov. Type 261- Back flushing/Component Withdrawal from plant storage location

- a. True
- b. False

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