

Make to Order (MTO)

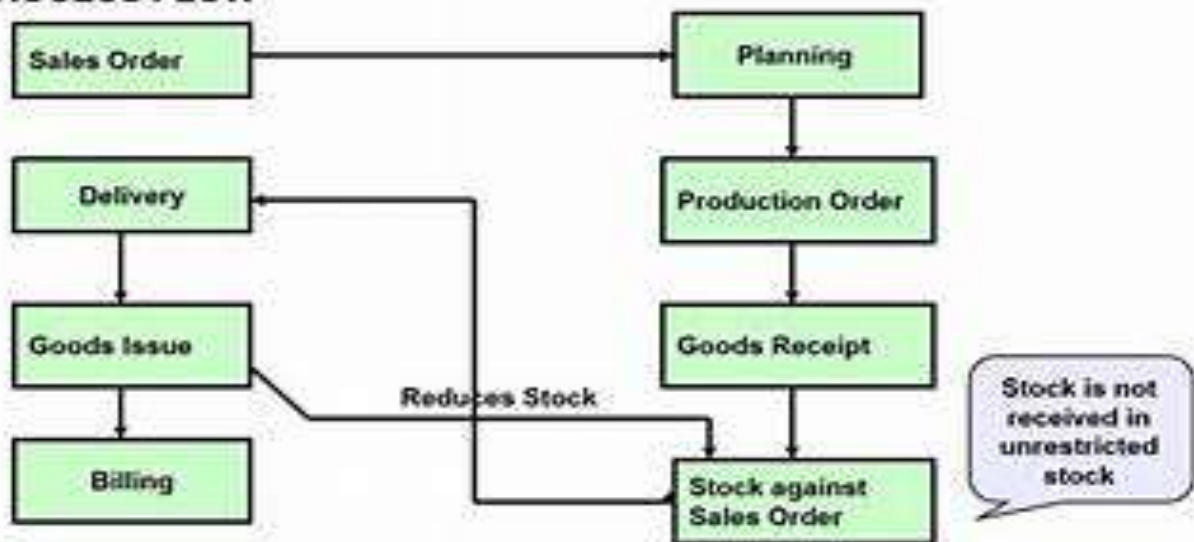
In this scenario without customer or sales order we cannot start the production activities.

The product is not manufactured in advance, but produced once the customer order is received, as with high-end cars - BMW, ODDI, Land rover, motorcycles, textile products etc.

There is no forecasting involved.

Make to order products are specialized products which may be costly or highly customized, such that the manufacturer should not freeze capital by making and storing the goods in advance of the customer's order.

PROCESS FLOW



In the make to order production process, a sales order initiates the demand for production. The production department creates a bill of material to produce the required quantity and runs MRP.

Requirements for components manufactured in-house are sent to the respective department and if any component needs to be purchased, a purchase requisition is raised and sent to the procurement department. Once the make to order production

process is completed, finished good are transferred to a storage location as “special stock”. Finally, the finished goods are delivered and invoicing is carried out.

The produced quantity for individual sales order cannot be changed. Each quantity is maintained for the specific individual customer.

We will walk through the following steps in the below sections:

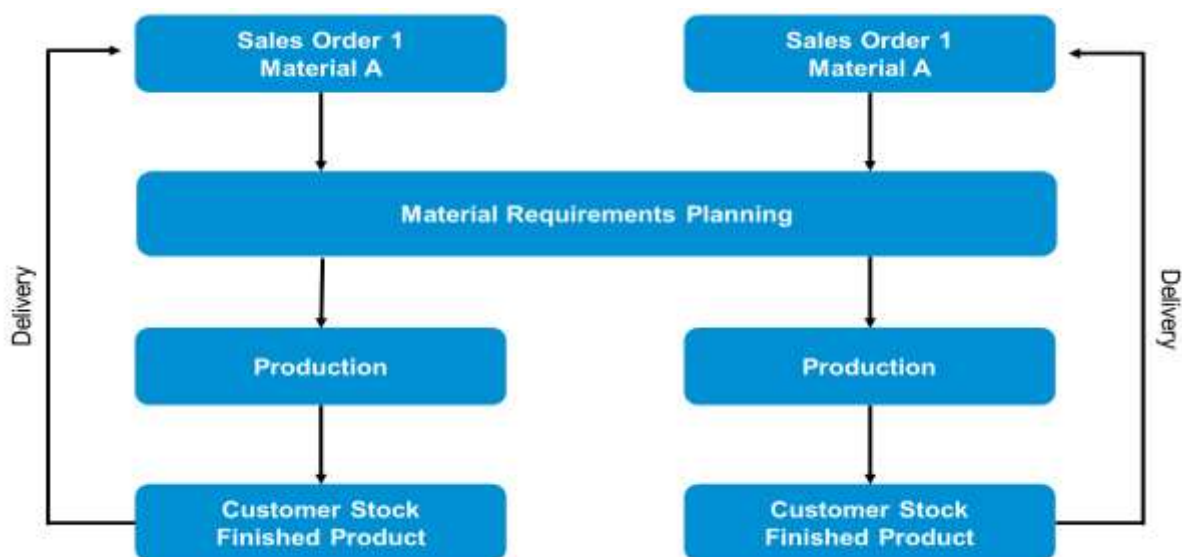
1. Update Material Master
2. Create Sales Order
3. Check Production Order
4. Execute Delivery
5. Generate Billing

For MTO scenario we can use planning strategy 20.

Planning strategy 20:

It is also called as pure make to order strategy.

In this strategy – 20 product is specially manufactured for customer order or sales order there is no forecasting involved.



In this strategy – 20 without sales or customer order we cannot start the manufacturing activities, until and unless we receive the

sales order then we will start the actual production for Header and down-level material.

In this we consider only sales order specific stock in our plant.

Sale order or customer order will be the trigger point for production.

In this strategy – 20 available stocks consider and **PIR** getting consumed **by the sales order**. Suppose company receives 2 sales orders. With planning strategy 20, each sales order is planned separately. The system does not perform a net requirements calculation between individual sales orders or with the make-to-stock warehouse stock.

We can assign strategy group in **MRP – 2** views

In make-to-order production, lot-for-lot order quantity is used as the default lot-sizing procedure, independent from the setting in the material master.

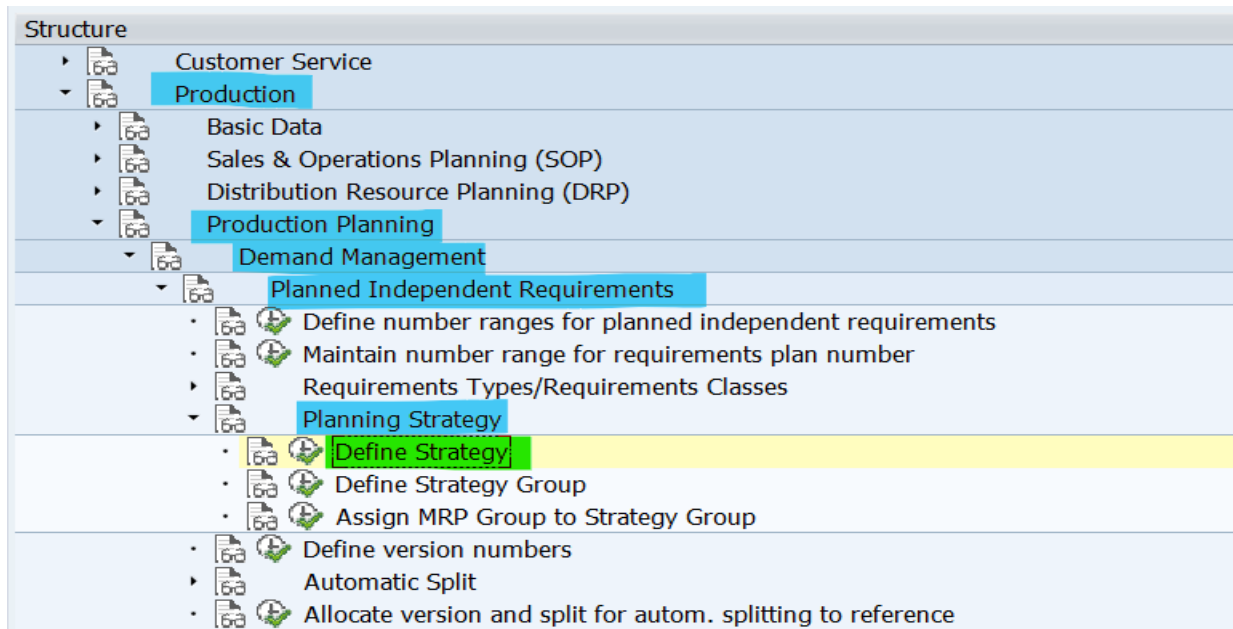
The produced product for one sales order cannot be exchanged or used for another sales order. Each sales order has its own separate stock, which is managed directly within the corresponding sales order.

The sales order stock and the requirement are reduced by a goods issue to the sales order.

Configuration path of planning strategy – 20

SPRO – SAP REF IMG

Production
Production Planning
Demand Management
Planned Independent Requirements
Planning Strategy
Define Strategy
Define Strategy Group
Assign MRP Group to Strategy Group



For practically run the Make to order scenario we need to maintain following views and parameters in material master.

Steps:

1. Create material master

FG – Cylinder 3169 – using Strategy Group – 20

ROH – Pump 5198 – using General scenario

Using Sales 1, 2, 3 Views with all required data.

2. Create Bill of material

3. Create Work center

4. Create Routing

5. Create Sales Order using Customer reference

6. MRP run against Sales Order

7. Check stock requirement list

8. Check ROH stock
9. Convert Planned order to production order
10. Conform production order.

Practically creation process

Basic data 1

The screenshot shows the 'Change Material 3169 (Finished Product)' window in SAP. The 'Basic data 1' tab is active. The material number is 3169 and the description is 'Cylinder'. The 'General Data' section includes the following fields:

Base Unit of Measure	PC	Piece	Material Grp	01
Old material number			Ext. Matl Group	
Division	01		Lab/Office	
Product allocation			Prod. Hierarchy	
X-plant matl status			Valid from	
<input type="checkbox"/> Assign effect. vals			GenItemCatGroup	NORM Standard item

The 'Material authorization group' section shows the 'Authorization Group' field. The 'Dimensions/EANs' section is also visible.

Sales 1 view – Maintain Tax data.

The screenshot shows the 'Change Material 3169 (Finished Product)' window in SAP, with the 'Sales: sales org. 1' tab active. The material number is 3169 and the description is 'Cylinder'. The 'Sales Org' is 0001 and the 'Distr. Chl' is 01. The 'General data' section includes the following fields:

Base Unit of Measure	PC	Piece	Division	01
Sales Unit			<input type="checkbox"/> Sales unit not var.	
Unit of Measure Grp			Valid from	
X-distr.chain status			Valid from	
DChain-spec. status				
Delivering Plant				
Material Grp	01	Material group 1		
<input checked="" type="checkbox"/> Cash discount				

The 'Tax data' section shows the following table:

C...	Country	Ta...	Tax category	T	Tax classification
DE	Germany	MWST	Output Tax	1	Full tax

Maintain Sales 2 view – General and Item category group.

Change Material 3169 (Finished Product)

Additional Data Org. Levels Check Screen Data

Sales: sales org. 1 Sales: sales org. 2 Sales: General/Plant Foreign trade export S..

Material 3169 Cylinder
S.Org 0001 Sales Org 0001
Distr. Chl 01 MTO

Grouping terms

Matl statistics grp	<input type="checkbox"/>	Material pricing grp	<input type="checkbox"/>
Volume rebate group	<input type="checkbox"/>	Acct assignment grp	<input type="checkbox"/>
Gen. item cat. grp	NORM Standard item	Item category group	NORM Standard item
Pricing Ref. Matl			
Product Hierarchy			
Commission group	<input type="checkbox"/>		

Material groups

Material group 1	<input type="checkbox"/>	Material group 2	<input type="checkbox"/>	Material group 3	<input type="checkbox"/>
Material group 4	<input type="checkbox"/>	Material group 5	<input type="checkbox"/>		

Product attributes

<input type="checkbox"/> Product attribute 1	<input type="checkbox"/> Product attribute 2	<input type="checkbox"/> Product attribute 3
<input type="checkbox"/> Product attribute 4	<input type="checkbox"/> Product attribute 5	<input type="checkbox"/> Product attribute 6

Maintain Sales 3 View – Transportation and loading group.

Change Material 3169 (Finished Product)

Additional Data Org. Levels Check Screen Data

Sales: sales org. 2 Sales: General/Plant Foreign trade export Sales text MRP 1

Material 3169 Cylinder
Plant 0001 Werk 0001

General data

Base Unit of Measure	PC Piece	Replacement part	<input type="checkbox"/>
Gross Weight	<input type="text"/> KG	Qual.f.FreeGoodsDis.	<input type="checkbox"/>
Net Weight	<input type="text"/>	Material freight grp	<input type="text"/>
Availability check	01 Daily requirements	<input type="checkbox"/> Appr.batch rec. req.	
<input type="checkbox"/> Batch management			

Shipping data (times in days)

Trans. Grp	0001	On pallets	<input type="checkbox"/>	LoadingGrp	0001	Crane	<input type="checkbox"/>
Setup time	<input type="text"/>	Proc. time	<input type="text"/>	Base qty	<input type="text"/>	PC	

Packaging material data

Matl Grp Pack.Matls	<input type="text"/>
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Accounting 1 view – Maintain MTO valuation class

Change Material 3169 (Finished Product)

Additional Data Org. Levels Check Screen Data

Work scheduling Accounting 1 Accounting 2 Plant stock Stor. loc. stck EIO Data

Material 3169 Plant 0001

Period 004.2024 Period 003.2023

General Valuation Data

Total Stock

Division 01

Valuation Class 7925

VC: Sale Ord. Stk

Project Stock VC

Prices and values

Currency EUR

Company

Valuation Class (1) 5 Entries found

Restrictions

Val	Description
3000	Raw materials 1
7900	Semifinished products
7920	Finished products
7925	Valuation Class for MTO
SUNI	SUNIL GROUP

Create Bill of material

Change material BOM: General Item Overview

Subitems New Entries Header Validity

Material 3149 Drown

Plant 0001 Werk 0001

Alternative BOM 1

Material Document General

Item	ICt	Component	Component description	Function ID	Quant...	Un	A...	SI	Valid From	Valid to
0010	L	5163	Drown camera		1	PC			26.03.2024	31.12.9999
0020										
0030										
0040										
0050										
0060										
0070										
0080										

Create Work center and Create Routing Using general procedure.

Change Routing: Operation Overview

Material 3169 Cylinder Grp.Count1

Sequence 0

Op...	SOp	Work ce...	Plnt	Co...	Stan...	Description	L...	PRT	Cl...	O...	P...	C...	S
0010		ITC04	0001	PP01		Checking and quality control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0020			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0030			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0040			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0050			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0060			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0070			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0080			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0090			0001				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Create Sales Order using (Customer reference)

Create Standard Order: Overview

Standard Order Net value 24,682,222.00 INR

Sold-To Party CUST 1 MTO MTO Test Customer 1

Ship-To Party CUST 1 MTO MTO Test Customer 1

Purch. Order No. 12345678 PO Date

Sales Item overview Item detail Ordering party Procurement Shipping Reason for rejection

Req. deliv.date D 08.04.2024 Deliver.Plant

☐ Complete dlv. Total Weight 10 KG

Delivery block Volume 0.000

Billing block Pricing Date 08.04.2024

Payment card Exp.date

Card Verif.Code

Payment terms 0001 Pay Immediately w/o deduction

Incoterms CIF cfr

All items

Item	Material	Order Quantity	Un	S	Description	Cust
20	3169		10 PC	<input checked="" type="checkbox"/>	Cylinder	

Check stock requirement list for FG material and see order 307 is generated with planning strategy 20.

Stock/Requirements List as of 16:32 hrs

Show Overview Tree

Material Cylinder
 Plant MRP Type Material Type Unit

A..	Date	MRP e...	MRP element data	R...	E..	Receipt/Req...	Available Qty
	08.04.2024	Stock					0
	08.04.2024	CustSt	0000000306/000020				0
	08.04.2024	CusOrd	0000000306/000020/0001			5-	5-
	08.04.2024	CustSt	0000000307/000020				0
	08.04.2024	CusOrd	0000000307/000020/0001			10-	10-

MRP Run against the sales order using T Code MD50
 Here system automatically capture Material and plant key.

Make-To-Order Planning - Multi-Level

Sales Order
 Sales ord. item

Material Data

Material Cylinder
 Plant Werk 0001

MRP Control Parameters

Create Purchase Req.	<input type="text" value="1"/>	Purchase requisitions
SA Deliv. Sched. Lines	<input type="text" value="3"/>	Schedule lines
Planning mode	<input type="text" value="3"/>	Delete and recreate planning data
Scheduling	<input type="text" value="1"/>	Determination of Basic Dates for Planned

Process Control Parameters

☐ Also Plan Unchanged Components
☐ Display Results Prior to Saving
☐ Display material list

Again, check stock requirement list for FG material and see planned order is generated against sales order 307.

Stock/Requirements List as of 16:32 hrs

Show Overview Tree

Material 3169 Cylinder
 Plant 0001 MRP Type PD Material Type FERS Unit PC

A..	Date	MRP e...	MRP element data	R...	E..	Receipt/Req...	Available Qty
	08.04.2024	Stock					0
	08.04.2024	CustSt	0000000306/000020				0
	08.04.2024	CusOrd	0000000306/000020/0001			5-	5-
	08.04.2024	CustSt	0000000307/000020				0
	08.04.2024	CusOrd	0000000307/000020/0001			10-	10-

Check stock requirement list for ROH material and convert PR to PO and increase the ROH stock.

Stock/Requirements List as of 16:56 hrs

Show Overview Tree

Material 5198 Pump
 Plant 0001 MRP Type PD Material Type ROHS Unit PC

A..	Date	MRP e...	MRP element data	R...	E..	Receipt/Req...	Available Qty	Sto...
	08.04.2024	Stock					0	
	08.04.2024	CustSt	0000000306/000020				0	
	08.04.2024	DepReq	3169			5-	5-	FG01
	09.04.2024	PurRqs	0010000095/00010			5	0	RM01
	08.04.2024	CustSt	0000000307/000020				0	
	08.04.2024	DepReq	3169			10-	10-	FG01
	09.04.2024	PurRqs	0010000094/00010			10	0	RM01

Again, check stock requirement list for ROH material and see **PO** is generated.

Stock/Requirements List as of 17:15 hrs								
Show Overview Tree								
	Material	5198		Pump				
	Plant	0001	MRP Type	PD	Material Type	ROHS	Unit	PC
	A..	Date	MRP e...	MRP element data	Re...	E..	Receipt/Reqmt	Available Qty
		08.04.2024	Stock					0
		08.04.2024	CustSt	0000000306/000020				0
		08.04.2024	DepReq	3169			5-	5- FG01
		09.04.2024	PurRqs	0010000095/00010			5	0 RM01
		08.04.2024	CustSt	0000000307/000020				0
		08.04.2024	DepReq	3169			10-	10- FG01
		09.04.2024	POItem	4500000395/00010			10	0 RM01

Also check PO document for ROH 5198

<

Then MIGO for GRN of ROH material.

Goods Receipt Purchase Order 4500000395 - AJAY.SN

Hide Overview | Hold | Check | Post | Help

A01 Goods Receipt | R01 Purchase Order

My Documents

- Purchase Orders
 - 4500000395
 - 4500000384
 - 4500000379
 - 4500000378
- Orders
 - 1000100
 - 1000075
 - 1000074
 - 1000073
 - 1000072
 - 1000071
 - 1000070
 - 1000069
 - 1000068
 - 1000065
- Reservations
 - Blank
- Material Documents
 - 5000000364
 - 49000000511
 - 5000000353
 - 49000000455
 - 5000000351
 - 5000000350
 - 5000000349

General | Vendor

Document Date: 08.04.2024 | Delivery Note: | Bill of Lading: |

Posting Date: 08.04.2024 | 1 Individual Slip

Line	Mat. Short Text	OK	Qty in UnE	EUn	SLoc	Profit Center	G/L Account
1	Pump	✓	10	PC	Row Material	SAP-DUMMY	400000

Material | Quantity | Where | Purchase Order Data | Partner | Account Assign

Qty in Unit of Entry: 10 | PC

Qty in SKU: 10 | PC

Then Check stock requirement list for ROH.

Here checks stock is generated against sales order 307, means this stock we can use only against sales order 307, **we cannot use this stock to other sales order** this is also known as **sales order specific stock**.

Stock/Requirements List as of 17:20 hrs

Show Overview Tree | [Icons]

Material: 5198 | Plant: 0001 | MRP Type: PD | Material Type: ROHS | Unit: PC

A..	Date	MRP e...	MRP element data	Re...	E..	Receipt/Reqmt	Available Qty	Storage Loc...
[Icon]	08.04.2024	Stock					0	
[Icon]	08.04.2024	CustSt	0000000306/000020				0	
[Icon]	08.04.2024	DepReq	3169			5-	5-	FG01
[Icon]	09.04.2024	PurRqs	0010000095/00010			5	0	RM01
[Icon]	08.04.2024	CustSt	0000000307/000020				10	
[Icon]	08.04.2024	DepReq	3169			10-	0	FG01

Now for FG - 3169 Material converts planned order to production order from MD04 screen.

Stock/Requirements List as of 17:29 hrs

Show Overview Tree

Material: 3169 Plant: 0001 MRP Type: PD Material Type: FERS Unit: PC

A..	Date	MRP e...	MRP element data	Reschedulin...	E..	Receipt/Reqmt	Available Qty
	08.04.2024	Stock					0
	08.04.2024	CustSt	0000000306/000020				0
	08.04.2024	CusOrd	0000000306/000020/0...			5-	5-
	10.04.2024	PldOrd	0000005234/80			5	0
	08.04.2024	CustSt	0000000307/000020				0
	08.04.2024	CusOrd	0000000307/000020/0...			10-	10-
	10.04.2024	PldOrd	0000005233/80			10	0

Additional Data for MRP Element

Plndd Ord.: 0000005233 Make-to-order Order finish: 10.04.2024 GR pr.time: 0

Order qty: 10 PC Order start: 08.04.2024 Proc. type: E

Scrap: 0 Planned opening: 08.04.2024 Order type: KD

Buttons: > Prod.Ord. > PartConvProdOrder > Proc.Ord. > SubProcOrd > Pur.Req.

Now production order is created.

Production order Create: Header

Material: 3169 Plant: 0001 Type: PP01

Status: CRTD MANC SETC

Order: %000000000001

General Assignment Goods Receipt Control Dates/Qties Master Data Long Text Administration

Quantities

Total Qty: 10 PC Scrap Portion: 0.00 %

Delivered: 0 Short/Exc. Rcpt: 0

Dates/Times

Basic Dates: End: 10.04.2024 06:00 Start: 09.04.2024 06:00 Release: 10.04.2024

Scheduled: 10.04.2024 06:00 10.04.2024 04:07

Confirmed: 00:00

Sales Order

Sales Order: 307 20 0 Req.DDate: 08.04.2024 1st DDate: 10.04.2024

Ordering Pty: CUST_1_MTO MTO Test Customer 1

Scheduling

Type: 2 Backwards Floats: Sched. Margin Key: 000

Also check **individual customer stock** indicator on Production order screen (In component).

Production Order Create: Component Overview

Order: %000000000001 Type: PP01
Material: 3169 Cylinder Plant: 0001

Filter: NO_FIL No Filter Sorting: ST_STA Standard Sort

Component Overview

Item	Compon...	Description	Reqmt Qty	U...	I...	Op...	Se...	Plant	Sto...	B...	A...	B...	B...	Special Stock	D...
0010	5198	Pump	10	PC	L	0010	0	0001	FG01					1	

Special stock indicator for dialog display (...)

Special stock indic.	Short Descript.
1	Individual customer stock
2	Project Stock
3	Consignment Stock
4	Pipeline stock

Now check MD04 production order is generated.

Stock/Requirements List as of 17:39 hrs

Show Overview Tree

Material: 3169 Cylinder
Plant: 0001 MRP Type: PD Material Type: FERS Unit: PC

A...	Date	MRP e...	MRP element data	Reschedulin...	E...	Receipt/Reqmt	Available Qty
	08.04.2024	Stock					0
	08.04.2024	CustSt	0000000306/000020				0
	08.04.2024	CusOrd	0000000306/000020/0...			5-	5-
	10.04.2024	PldOrd	0000005234/so			5	0
	08.04.2024	CustSt	0000000307/000020				0
	08.04.2024	CusOrd	0000000307/000020/0...			10-	10-
	10.04.2024	PrdOrd	000001000102/PP01/Re			10	0

Then conform the production order 1000102. And also check E – sales order specific stock indicator and Customer name.

Confirmation of Production Order Enter : Goods Movements

Order	1000102	Status:	REL	PRC	MANC	SETC
Material Number	3169	Cylinder				

[illegible]

Then MIGO for GRN of FG - 3169 Material.

Goods Receipt Order 1000102 - AJAY.SN

Hide Overview
Hold
Check
Post
Help

My Documents

- Purchase Orders
 - 4500000395
 - 4500000384
 - 4500000379
 - 4500000378
- Orders
 - 1000102**
 - 1000100
 - 1000075
 - 1000074
 - 1000073
 - 1000072
 - 1000071
 - 1000070
 - 1000069
 - 1000068
- Reservations
 - Blank
- Material Documents
 - 5000000365
 - 5000000364
 - 4900000511
 - 5000000353
 - 4900000455
 - 5000000351
 - 5000000350
 - 5000000349
 - 5000000348
 - 4900000451

A01 Goods Receipt
R08 Order

General

Document Date: 08.04.2024

Posting Date: 08.04.2024

☐ 1 Individual Slip

Delivery Note

Doc.Header Text

Line	Sta...	Mat. Short Text	OK	Qty in UnE	EUn	SLoc	B V	M...	D...
1		Cylinder	<input checked="" type="checkbox"/>	10	PC	Finls..		101 +	

Delete

Material
Quantity
Where
Order Data
Nomination Details

Movement type: 101 E + GR for sales ord.st.

Sales Order: 307 20

WERK: Werk 0001

Storage Location: FinishMaterial

Goods recipient:

Then lastly check the Finished material stock against the Sales order – **307** and quantity - **10** using MD04 T code.

Stock/Requirements List as of 17:55 hrs

Show Overview Tree

Material Cylinder

Plant MRP Type Material Type Unit

A..	Date	MRP e...	MRP element data	R...	E..	Receipt/Reqmt	Available Qty
	08.04.2024	Stock					0
	08.04.2024	CustSt	0000000306/000020				0
	08.04.2024	CusOrd	0000000306/000020/0...			5-	5-
	10.04.2024	PldOrd	0000005234/SO			5	0
	08.04.2024	CustSt	0000000307/000020				10
	08.04.2024	CusOrd	0000000307/000020/0...			10-	0

Please check here our stock is generated against the sales order - **307** for FG Material this is nothing but customer order specific stock this is also called as **MTO** process.

And due to this reason, our stock is not generated against the Available Qty.

Note:

When this stock is dispatched using the outbound delivery by dispatch team against the sales order to a customer then this stock will be consumed.

In this MTO scenario planning has been done according to the sales order. Now our **MTO** process is Done.

Thank You....