Chapter 2: The Organization
Organization

This work is carried out in all suspension system manufacturing plant established in northern capital region. It covers complete supply chain including original equipment manufacturer as customer, suspension system manufacturing units as supplier, suspension system manufacturer supplier termed as sub supplier.

2.1 Suspension system –

Suspension system is defined as a system contains spring, shockers and linkages which connect wheels to vehicles. Its dual function includes its contribution in handling of car & braking and protection to vehicles or luggage damage by avoiding jerk. It also provides luxury riding comfort to passengers. Stability of vehicles during pass on pitch is preserved by shockers and keeps good griping of vehicle during driving. Suspension system preserve proper geometry of steering.

Chassis of all passenger cars mounted on two front shock absorbers (called Modular) and two rear shock absorber (called Rear shocker). Suspension system provides ride comfort in vehicle. Its basic function is to nullify jerk observed when vehicle tyre passage through a pit or uneven road. It also provides feeling of luxury comfort on road which may be added as additional function to delight customer. Vehicle body is suspended on springs to reduce the vertical displacements and accelerations that are transmitted from the road to the occupants. Springs decrease the intensity of the road inputs by storing and releasing the energy over time.

Damper converts this kinetic energy of the vehicle and spring into thermal energy and dissipates it to the atmosphere.

Suspension system as a product ---

Front suspension system contains two shock absorbers called modular assembly as shown in below figure. Front shocker has to bear weight of engines, so made capable to face more load in comparison of rear shocker with the use of heavy duty springs. The components of front shocker called modular assembly contains piston rod, Bearing Front Strut, Bumper - Rebound Spring, Spring Upper Seat, Seat Front Strut Bearing, Strut Mount Seat Comp, Support Comp Front Strut, Front Strut Inner Support, Brake Hose Bracket, Seat Comp Front Spring Upper, Bumper Cup, Spring Seat, Bracket Assy, Bumper Cup, Cylinder Tube, Reservoir tube, Bracket- Stabilizer Bar, Brake Hose Bracket Assy-LH, Brake Hose Bracket Assy-RH, Upper Spring Seat Comp, Mounting Bracket Assy, Seat Front Coil Spring, Bearing, Rebound Bumper, Mount Front Strut, Rebound Stopper, Seat front coil spring, stopper front bump,
Rear Suspension System---

The shocker mounted on rear wheel of vehicle is called as rear suspension system. As load on back side of vehicle is less in comparison of front, it does not include spring as child components. The assembly of rear shocks contains Piston Rod, Plastic Dust Tube, Cover plate, Base cup, Reservoir tube, Cylinder tube, Upper Ring, Ring, Lower Ring, Sleeve, Secured Sleeve Assy, Rebound Bumper, Bumper Cup, Bushing Isolator, Seal assembly, Plate Asm- Jounce, Rebound – Stop, Cover Plate, Base Cup, Retainer, Jounce Retainer, Washer Retainer, Plate cover, Retainer-Valving, Disc-clamp/spacer, Disc –intake , piston, Disc –orifice, Rebound intake spring, cylinder end, Piston coined, Retainer spacer, Rod Guide, Rubber bushing, Stopper front strut rebound, stud, Nylock Nut, Jounce Bumper, Seal Assembly, Sleeve, Intake Spring Retainer (Steel), Washer Retainer.
Function of various assembly parts---

1. Rebound Bumper: To take load during very high bumps

2. Dust tube: it is made of plastic or steel used to cover piston rod so that it can be kept free from dusts.

3. Cylinder Tube: it is made of steel used to hold the oil and guide the piston assy during functioning.

4. Hydraulic fluid: this fluid is used to create pressure which dampen the vibrations

5. Bumper cup plate: To protect the oil seal during very high bumps from the bump stopper

6. Reservoir tube: Aids to get mounted on the vehicle, holds cylinder tube, oil and takes the side load

7. Ring: it is made of steel used to get mounted on to the vehicle

8. Spring seat: it is gets welded on to the reservoir tube, take the vehicle load

9. Piston rod: it Connects the reservoir tube assy and the vehicle, holds the piston assy, rodguide & seal assy

10. Seal assy: Helps to keep the oil from leaking

11. Guide rod: Guides the rod assembly, takes the side load and also holds DU bush
12. Bushing: Guides the rod assy, takes the side load with less friction

13. Rebound stop: Takes the extreme load during pot hole hitting & topping conditions

14. Rebound valve assy: In combination with the discs and piston the damping forces are achieved. Each & every disc is very much important.

15. Compression valve assy: In combination with the discs and cylinder end, the damping forces are achieved. Each & every disc is very much important.

Theory of operation—

The twin tube damper can be divided into four distinct chambers

The chamber above the piston (A)

The chamber below the piston (B)

The reservoir chamber below the fluid level (C)

The air volume in the reservoir above the fluid level (D)

Motion of the piston toward the base valve builds pressure in chamber B

The pressure forces fluid through the piston intake valve into chamber A

Chamber A can’t hold all of the fluid from chamber B due to the piston rod volume
The rod volume is forced through the base valve into chamber C.

The air in chamber D is compressed to compensate for the change in volume.

Therefore, compression damping is obtained through the piston and base valves. Motion of the piston away from the base valve builds pressure in chamber A.

The fluid in chamber A is forced into chamber B through the piston rebound valve.

The base valve intake opens, letting fluid from chamber C to go back into chamber B to compensate for the rod volume.

Rebound control is generated entirely through the piston rebound valve.

Airlift dampers are used to keep trim height and body motion frequencies relatively constant regardless of loading conditions.

Auxiliary spring created by placing a rubber air sleeve around the shock.

Load and rate are adjusted by varying the air pressure in the air sleeve.

Pressure regulated by a simple controller, air compressor and one or two position sensors.

One modular is mounted on right side of chassis called modular RH and one modular mounted on left hand side called modular LH. Right hand modular fitted in right hand side of vehicle whereas left hand modular fitted in left side of vehicle. Front side suspension system does not have feature of interchangeability means left hand side modular cannot be fitted on right hand side and similarly right side modular cannot be fitted on left side of vehicle. Rear suspension system have property of interchangeability, it can used either on left side or right side. Complex design of suspension system consists assembly of 42 to 48 child part components.

Manufacturing process of suspension system happen on production assembly lines and production done in batches based on car model demanded by customer. First process is of closing of cylinder tube done by two methods.

1) In this method closing of cylinder tube is done welding on its one side end and other side kept open.

2) This method has closing of one end of cylinder tube by material flow with induction heater.
Then tube is tested for leakage through bubble test. Such manufacturing facilities have small cells in their layout where sub-assemblies made and then theses sub-assemblies became input for two final assembly lines called shock line for rear suspension system and strut line for front suspension assembly lines. Sub-assemblies include reservoir tube assembly, piston rod assembly and valve assembly. Piston rod assembly manufacturing process contain piston rod, piston which is joined by either welding or through riveting process. Washing is also an important step to make shocker contamination free. Valve assembly made by following a particular sequence as types of disc used is very similar in physical appearance.

A ring is welded on cylinder and another ring on piston rod. These rings used to mounted rear shocker where as in front strut a mounting bracket is welded for mounting purpose on chassis. In addition to bracket, spring seat is also welded on cylinder tube to support spring later on stage. Then this assembly moves to paint process. After painting piston rod assembly along with valve assembly fitted to cylinder tube moving through some value addition. Then this assembly filled by gas or hydraulic oil based on product design. Lastly crimping done to close tube end after putting oil seal to pack fluid. Similarly process is adopted for rear suspension system, oil or gas filled in cylinder tube then piston rod assembly crimped after putting oil seal. Then this assembly sent to paint shop for painting.

For front suspension, strut assembly under a final assembly process in which a spring, bumper cup, fasteners also assembled to make it final modular assembly. Similarly shocks assembly finally made by putting dust tube made of plastic or steel tube to cover piston assembly. Final product dispatched to customer in bins, trolley and corrugated boxes. Rear suspension shocks dispatch in bins whereas front suspension sent to customer in trollies. Suspension system also has scope of aftermarket, where product sold as spares.

Corrugated packing used to cater such customer and this deal happen at dealer site. Car manufacturer them self-provide product to dealers by purchasing directly from supplier who supply product for their car assemblies. Corrugated packing also done on daily basis in plant. Product is first wrapped in polythene or bubble roll, then put in inner box supported by insert. Then these four inner boxes kept in one outer box having weight of 35 Kg approximately. Rear shocks are less in weight, therefore six inner boxes kept in one outer box.

2.2 An overview of suspension system supply chain---

Supply chain of suspension industry can be described through three categories as shown in fig. ---

A) OEM—It is refers to car manufacturer which is customer of suspension supply chain
B) Tier 1--- It is refers to suspension system manufacturer who makes supply directly to OEM.
C) Tier 2—It is refers to components manufacturers, who customer is tier 1 industries.
D) Tier 3—It is refers to small industries who manufacture small components or doing partial operations for tier 2 industries. Their customer is tier 2 industries.

A tier 1 supplier is a manufacturer, who directly supply material to OEM who's dealing directly to Customer. Or we can say it's a middleman company.

Tier company fulfilled the need of manufacture company in their business in terms of cost, development & design with validate products and system incorporated into vehicles. Tier one supplier Industry are associated with auto mobile from last 37 years approximately. The OEM builders use to select and develop their tier 1 supplier for better understanding & supply. While developing the tier one supplier the primary reason for that is because the design, quality & material as per Customer control. Tier one components / Products only made by Tier 1 Supplier. This is important because ISO/TS16949 Quality Standard used to operate to manufacture the product.

The Product made by Tier 1 business Partners will be in same process as control by OEM product manufacturing. The Customer using the Tier 1 component will deliver the very high level of satisfactory as per standard control by OEM Clients with true appreciation. As on same process is done by Tier 1 Supplier to develop their sub vendor. i.e. Tier 2 (Can Say) for chid parts which are fitted in their product or they are not having the capicity or machine to manufacture their parts in-house.

The OEM & Tier 1 Supplier become a critical aspect to select the best vendor within standard which are control as product its a big challenge for Tier 1 company to select best vendor for supplying the material in desired form. Tier one companies are major supplier of OEM.

Tier Two companies are the key partners of tier one company without tier two company it’s very difficult for tier one to manufacture the product because the part supply by tier two partners are assembled by tier one Company to complete the Product as per standard which are control by customer. Same thing is done by tier three where small work is done. i.e job work if required in the process or some other fitments type work to be done in small industries to save time & increase production.

& so on other tier vendor which are doing trading where manufacturing is not done only those parts are consider which are part of operation activity we can say consumable parts, which are used while in manufacturing but at final stage it’s not the part of final product.

The Process flow diagram is given below

OEM < ------- Tier One < ------- Tier Two < ------- Tier Three < ------- & so on
From above flow diagram its directly shows that it’s a cycling process to complete the Product in desired time with help of vendor & sub vendor.

Demand is originated through OEM’s circulated to tier 1 supplier. This demand includes information about, how many cars are planned to be manufactured this month model wise. Based on this information, requirement of front shockers is calculated model wise by considering share of business of particular model. Similarly rear shocker’s requirement calculated based on requirement model wise. Requirement of front and rear are calculated separately due to variation in business share with respect to front and rear. This means that it is not necessary that front supply will be equal to rear supply, business share may give only of front shockers or rear shockers.

Now final figure achieved regarding production of front and rear shocker’s .Then schedule for individual components supplier wise has been prepared based on assumption that how many part in number used to make one front or rear shocker.

The quantity calculated as requirement based on above calculation is then sending to suppliers (tier 1) as monthly schedule. Similar practice is followed by tier 1 supplier to release schedule to their supplier (tier 2). Tier 2 supplier provides demand to their supplier (tier 3). Then follow up for supply starts, components receipt monitoring in number on daily basis is also done.

After receiving it offer to quality for inspection. Quality doing inspection based on their inspection plan, some parts inspected on sampling base, critical parameter and instruments use is also documented for reference of inspection person. Some parts moved directly to store without inspection as pre decided by quality inspection based on track record of suppliers. After inspection it is moved to store at designated location.

Stores issues material to production floor based on production plan model wise, after manufacturing complete assembly of shockers it is moved to FG areas. FG area has space for final products model wise which dispatch as per customer schedules and demand.

This is a complete cycle of supply chain in suspension industries, complexity of supply chain can be anticipated that it has 120x3 numbers of final product assembly, approximately 1725 number of components and semi assembly variants.

A broad over view to understand supply chain configuration is presented in figure as below.
2.3 Supply chain process---

Since our area of research is supply chain automation, therefore in this section detailed study of supply chain procedure and process is more fruitful. Supply chain start point is planning and ordering of material then receiving of material, material flow at production lines, value addition at each step in production, quality inspection at various required stages, after manufacturing movement of material to finished good area and final dispatch to customer. Vehicle tracking system, material loading and unloading system, replenishment system of material are area of consideration as automation.

2.3.1 Material planning and scheduling process----
This procedure defines the tasks and activities needed to support the supply chain Master Planning and Scheduling Process to meet customer ship dates while ensuring manufacturing performance and optimized inventory performance. The ultimate goal is to achieve a lean operating system with high utilization of people and machines at competitive levels of Days Inventory Outstanding performance. Scope of this procedure is plant wide.

Master Planning and Forecasting –

Develop, maintain and communicate a rolling minimum 12 week Manufacturing Build Plan. A forecast of customer demand must be created in the MRP planning system to facilitate the development of a future state Operating Plan. Customer behavior and business climate need to be analyzed, and adjustments for potential risk of shortages and excess must be incorporated into customer demand numbers that are used to create Operating Plans. Customer demand in the next periods must be analyzed against the current Operating Plan to determine if adjustments need to be made to ensure optimal use of resources and material. Plan supports the adjusted Customer Demand and specifies the following in weekly/monthly detail by part family.

Planning of Number of shifts and hours per shift based on customer requirement and revised schedules. Similarly planning of

1. Cells/lines per shift and anticipated actual line rates.

2. Planning of manpower required by supply chain department to support the line rates

3. Finished Goods buffer to level weekly manpower.

The Manufacturing Build Plan must be created based on the Operating plan. The Manufacturing Build plan covers at least the next six weeks of the rolling 12 week periods.

Plan must be developed at a part number level using the correction by adjusting customer demand and Operating Plan assumptions so that finished Goods buffer remain at its level. The Manufacturing Build Plan is the basis for the weekly schedule and the forecast for long lead time suppliers.

Scheduling –

The Master Scheduler will develop weekly and daily schedules in sequence to the cell or line for all shippable parts. Manufacturing Build Plans must be broken down into a weekly schedules inclusive of all part numbers in the customer demand for that period. Manufacturing Build Plan must be broken down to daily build plan for a minimum of two weeks and weekly thereafter. The weekly Build Plan must take into account order lead-time
as well a supplier lead-time. MRP system tools facilitate planning at a part number level. MRP parameters should be reviewed regularly to ensure that planning is being done with accurate parameters to avoid shortages and excess inventory. Mid and long term planning are guided by the MRP parameters to achieve customer order fulfillment and inventory targets. Capacity utilization must be evaluated in the mid and long term to ensure the build plan aligns with the Operating Plan.

Develop Daily Schedules and Monitor Internal Schedule Performance. The Master Scheduler must develop daily schedules to ensure tight linkage to the parts ordering system and finished goods buffers. Freedom of the week is not desirable and should not be used since it increases total system inventory (Raw, WIP and Finish Goods). Schedule attainment should be measured on a daily basis to ensure compliance and determine root cause(s) for noncompliance.

Low Schedule Attainment ---

Low schedule attainment must be addressed quickly to ensure that the accuracy of planning in the MRP system is not degraded. Common causes of Low Schedule Attainment includes low overall efficiency (high hourly fluctuation), incorrect line rate in the Build Plan and Schedule and unplanned changeovers due to part shortages.

2.3.2 Process of receipt of material from supplier ---

The purpose of this procedure is to define the process for the receipt of goods and services from suppliers. The scope of this procedure applies to Plant manufacturing receiving areas who receive productive goods and services from suppliers. This does not apply to engineering centers, model shops, or indirect material.

This procedure includes Company Policy Governing to Receipt of Material. Corporation procedure establishes the Receiving Department as responsible for services received. Accordingly, it is local Plant policy that all materials and services be received through established supply chain Departments.

All material or services received must have a purchase order. Material and service invoices entered at company entrance gate in a register manually or in computer linked as part of enterprise resource planning system. Material designated “No Charge” does not need to be recorded. The purchaser of the material and the receiver cannot be the same person. The supply chain department will maintain an up-to-date list of the names and/or signatures of persons authorized to sign freight bills, packing slips, gate passes, etc. as applicable. Receiving personnel will observe the condition of shipments upon arrival, and begin the claim process in the event of damage and will follow Loss and Damage Claims clause in mutual agreement of Transportation.
The Receiving person, upon unloading the delivery vehicle, will count all bundles, packages, cartons, skids, etc., and compare with the carriers freight bill before signing for receipt of shipment. If a discrepancy is noted or damage is evident, the carrier driver is to sign the freight bill indicating the extent of the discrepancy and/or damage. The copy of discrepancy note sent to supplier through e-mail and he should ensure proper quantity for future supply. Physical receipt of material will be indicated on the freight bill/packing slip by stating the date of physical receipt and the signature of the receiving person, and entered into the receiving database. Then after gate entry material invoices entered at store and an material receipt note (MRN) created. One sticker containing information of material receipt note number, date of receipt and quantity is pasted on bins. Then these bin put on pallets and move with help of fork lifter. Fork lifter driver got instruction from store person for movement.

Store has space created on palletized rack. Each rack has an identification number like rack number 1, rack number 2 and so on. Then total area of material storage having grid identification number based on row and column matrix. Row wise rack has identification like R1, R2, R3 and so on. Similarly every column has identification number C1, C2, C3 and so on. Now space of rack one have identification number R1C1 is space allocated on top corner of palletized rack. In the same fashion all space identified with an number and pallets containing material stored in that space having space identification number in addition to information of part number and part name. Store person give instruction to move palletized material in racks after quality inspection and ensure that fork lifter puts material in designated space. 2nd stage of movement of material goes to some inclination racks which take care of first in and first out concept automatically. These racks do not have flat surfaces. It has some inclination angle in a manner that when material put in racks from one side, it automatically moves to other end of rack which is marked as out. 3rd stage of material movement is to production floor where various manufacturing process takes place. After final inspection material move to finish good store which is 4th stage of material movement.
At first stage of material movement at receiving in plant, no shipments will be accepted from a common carrier without a freight bill. Small package ground service providers, such as courier service provider, and interplant shipments are received without freight bills.

Should a delivery be made to a department or other location outside an established receiving area, it is the responsibility of the employee receiving the material to deliver the packing slip to the applicable receiving area. The packing slip must be signed by the person receiving the material or services. Personnel designated for entering receipts will need verification of material or services received.

Receipt of material at a consigned vendor location should be checked by the consigned vendor, and recorded on a Receiving Report off Site form. The Receiving Report off Site Form and the packing slip should be forwarded to the proper receiving person and entered into the receiving system.
If a packing slip is not provided or is missing, a receiving slip must be filled out with receiving information. No shipments will be accepted from a common carrier without a freight bill/invoice.

Sealed Railway Cars received with seals attached are to be examined by the Receiving person. Should there be any evidence to indicate that the seal may have broken in transit, the receiver will notify their supervisor who will contact the Traffic Manager for instructions prior to opening of the car. Sealed Trucks when reach to plant, Plant Security will check trailers for seals. If sealed, the seal number should be noted on the freight bill. Plant Security will verify that the truck seal number matches the seal number on the freight bill, and if they do not match, will notify the supervisor of the applicable Receiving area.

When either Railway Cars or Trucks are received under seal, the seal number will be written on the supplier’s packing slip by the receiving person or their person or their supervisor.

Procedure of Exit Pass for Delivery Trucks --- When the delivery truck is unloaded and all paperwork completed, the Receiving person will sign and issue an exit vehicle pass for the carrier.

Trucks will be visually checked by the Receiving person before a vehicle pass is issued to be sure that the truck contains no Plant property. Should there be material delivery to other points at Plant; the Receiving person will verify that the driver has the required paperwork for identification to plant protection at the out-bound gate.

In case of domestic supplier (supplier having manufacturing unit within 150 kilometer range) supply their material in bins. These bins returned with every vehicle trip and security person make entry of number of bins returned and a written documented gate pass issue containing details regarding quantity of bins.

Physical Verification procedure for Receipt of Material -- In verifying the receipt of materials, the number of containers received should be counted and verified to the carrier’s freight bill by the Receiving person. Further, the quantities of all materials should be verified to the packing slip.

Once the quantities are verified, the receiving person must sign and date the packing slip with the date of physical receipt. During verification of material if material does not matching with invoice quantity, a discrepancy note raised to supplier and communication given to supplier through mail with an attachment of discrepancy note. If wrong material shipped by supplier, it should not entered in ERP system and should be returned in same vehicle of supplier. If wrong material received in case of imported material, consignment should be entered in ERP and rejection paper to be made to return.
Recording Receipt of Material ---

The supplier’s packing slip is the official report of material or services received when the packing slip has been signed and dated by the receiving person. Each packing slip should have an unique numeric sequence accountability number. Receipts should be entered into the ERP/MRP system on the date the material is physically received if possible, or no later than the end of the next regularly scheduled standard business day. The plant should attempt to have appropriate personnel on non-standard business days whenever the plant is at or near working full, e.g. weekends or holidays with specific consideration given to month end periods. Any deviations from the standard time to enter receipts must be contractually agreed upon by the supplier, global supply management, and plant management. Receipt failures should be logged on a Problem Log in – SAP(Receiving Work Instruction) and elevated to the responsible party for resolution, follow up, and entry into ERP/MRP system. Problem logs must include the following information: physical date of receipt, part number, quantity, supplier name or vendor number, the error message or description of the problem and the date the receipt is finally entered. The log will be used to track outstanding receipts, for problem resolution, and root cause analysis by the plant. Problem Logs with open issues must be forwarded to plant financial manager on the first business day of each month. All completed packing slips should be maintained on file for a six years plus the current year.

Receipt Reconciliation ---

Each site shall have a third party reconcile goods receipt source documents (e.g., packing slip) daily to goods receipts entered into MRP/ERP system to ensure that all receipts have been appropriately entered. The third party must not be the same person who entered the receipt. Duplicate entries or receipts not entered should be corrected immediately.

Receiving Test Checks—

-Every six months or when a significant program change due to addition of new business occurs, the Receiving area at each site shall acquire or review a dollar volume sequenced listing of “A”, “B” and “C” part numbers or suppliers, referencing the supplier’s name. These lists are retained by the Receiving area supervision for audit purposes.

“A” part numbers or suppliers represent 70% of the annual dollar volume.

“B” part numbers or suppliers represent the next 20% of the annual dollar volume.

“C” part numbers or suppliers represent the final 10% of the annual dollar volume.
From this listing, the Receiving area shall complete a Supplier Verification Log Sheet for the “A”, “B”, and “C” part numbers or suppliers which will be used to display the results of the test-check audits.

The frequency requirement for the sample testing is as follows:

“A” part numbers or suppliers must be audited at least once per month.

“B” part numbers or suppliers must be audited at least once per quarter.

“C” part numbers or suppliers > Rs100,000 must be audited at least once per year.

Verification Log Sheet will be used to record information pertaining to the shipment that is being audited. This information is to include: the supplier name/alias, the date material is audited, part number, shipper identification number (SID), unit of measure, method of count, packing list quantity, actual quantity, and percent of variance.

If the actual audit count varies from the supplier’s count, write the actual count on the packing slip, sign and date it so that it may be used to input data into the receiving system and for later reference.

If discrepancies in actual receipts versus packing list quantities are greater than 1%, a minimum of the next three additional shipments must be tested. If one out of the three audits has a variance greater than 1%, further action should be taken.

Supplier Verification Log Sheets will be forwarded monthly to the Receiving Department supervision to review and sign. These logs should be retained two years plus the current calendar year for audit purposes.

2.3.3 Shipping/Dispatch Procedure ----

The objective of shipping procedure is to describe the process of shipping finished products to customer. Scope of this procedure is that it applies to all finished products shipped from Suspension Systems plant. Shipping documents may be manually or electronically numbered forms for control purposes. Since customer working on concept of just in time, therefore every morning truck requirement raised to transporter based on volume of delivery in single consignment. Customer demanded is extracted from intranet with delivery time and quantity. One person taking print out of window requirement and move material from finished good area to dispatch dock. At this stage a final ok tag approval done by quality person by checking some pieces on sample basis. After that kan ban card print out taken from customer
portal and pasted on each bins and trolley. This Kanban card has information of part number, part name, quantity per bin or trolley and identification tracking number. Then loading of truck starts, each bin weighted on weighing scale to avoid losses of over shipping. Trollies itself controls it as it has space as per standard, means when it contain less piece then empty space observed visually and when someone try to put more product it will not accommodate due to standard space.

In order to establishment and implementation of a system to support 100% on-time shipments to meet customer production and service requirements, dispatch vehicle released for delivery after anticipating logistic time and all possible hurdle like traffic jam.
Receive Finished Goods from Production

Is there a Customer

Y

Print Bill of Lading according to shipping plan of the day, Contact Carrier for pick up

Receive order

Fill in batch number and pack number on the packaging list attached to Bill of lading to ensure first-in-first-out

Check Condition of Product Package/Carrier if Safe or Not

Report to SCM Manager, SCM Manager develops corrective actions

N

Check Packing List if Correct or not

Report to SCM Manager, SCM Manager develops corrective actions

N

Sign and date on Bill of Lading

Sign with truck driver on the Dispatch Notes for Domestics Market After truck driver Verified the Shipping list after truck driver Verified the Shipping Quantity

Record container number and truck plate number; file Bill of Lading and one copy of packing list
Tracking & monitoring of delivery performance done through intranet on customer portal. When vehicle reached at customer premises they punch all Kanban card in their system and same report can be seen by supplier in real time. This practice done regularly and communicate the results to management when on-time shipments are not maintained. Sometime additional vehicle or some premium transport mode is used for various reason may be machine breakdown, manpower shortage, quality rejection, sudden increase in demand, natural disaster. To tackle such situation at
last moment stress develops and help taken of premium mode. The records of premium freight will be maintained for one year. Develop and implement the corrective action plans for the late shipments. Ship all materials in conformance with customer requirements, adherence to up-to-date customer-specified transportation mode, routings and containers. Set a computerized system for on-line transmittal of advance shipment notifications (ASNs), transmitted at the time of shipment. In the event that the on-line system fails, use the back-up method.

Fig 2 H Despatch documents procedures---

- Sign with customer on the Dispatch Notes for Domestic Market & Back two Copy (Yellow, red) to Company FS
- Forward Yellow copy of Dispatch Notes to finance
- File red copy of Dispatch Notes/ Bill of Lading/ Packing list
- Develop & execute Corrective actions on Customer Complaints
- Monitor Inventory in warehouse
Procedure of material flow for job work—

Sub Assy of Components

Material Receiving after Quality Checked for Outsourcing Painting

Material Despatch for Outsourcing Painting

Material Receiving from Outsourcing Paint Suppliers

Material Stored in Assy Storage Area As per Layout And FIFO Rule

Quality Performs Pre Dispatch Inspect. And approves for Shipping

Complete Invoicing & Docs. Prepared for Dispatching to Customer

Material Dispatch through Freight Forwarder

ASN Send to Customer and Recording Dispatch Detail

Customer Received and Generate SRV...

SRV TO Check of Every invoice and Keep Recording

Finance To Create Payment Request

Fig 2 I- Material flow for job work