

I'm not robot!

Loss of accuracy in your machine spare parts inventory will shut down your production machines every bit as fast as not having the production goods you need to produce finished products. That's why a world-class spare parts inventory system for your maintenance organization is every bit as important as inventory control for your manufacturing goods and materials. It's not an easy endeavor. But it will make life easier, more efficient and accurate for everyone that works with or purchases the spare parts that keep production online. In Part 1 of this article, I discussed first steps to control and manage your maintenance spare parts inventory. This segment expands on inventory accuracy. I'll also outline storage protocols, processes, job roles, procedures and training; and operations and management responsibilities and standards. Process compliance and secure storeroom protocols There's nothing more frustrating to maintenance professionals than not finding the spare part they need in inventory to repair a critical machine. As discussed in Part 1, a proper computer transaction must take place whenever an item is added to inventory, the quantity is increased or decreased and when an item is moved from one location to another. The key to controlling inventory accuracy? Nothing gets moved into or out of a storage location or moved to a different location without an accurate computer transaction. If this is accomplished 100% of the time, parts will be in the right location in the quantities needed and everyone will be able to find them. Clerks are key The only way to maintain inventory accuracy? Lock the storerooms. Assign clerks with the sole responsibility to bring parts into the storeroom (receiving function). Clerks will place the received items in their proper storage locations. They'll retrieve and disburse parts from the storeroom to the people that need them. Storeroom clerks alone will perform all computer transactions and all cycle counting to ensure inventory accuracy. They alone have the responsibility and accountability to maintain inventory accuracy. If clerks aren't held accountable, there will be no accuracy. If you are a three-shift operation (including maintenance on non-production shifts), you will need at least three storeroom clerks per day. In a world-class storeroom, clerks are responsible for tasks others may have done before. When only storeroom clerks perform these tasks, others are free to focus on production and maintenance responsibilities. Spare part inventory management needs many people working their specific roles to make it consistently successful. Courtesy: Daniel Penn Associates Procedures and training for storeroom clerks Specific, practical and efficient processes and procedures must be written for all functions of the storeroom. Clerks are trained to perform and be held accountable for them. Besides normal storeroom functions, clerks must be trained in parts identification. In addition to "show and tell" training for the clerks, post digital photos of all items to computerized maintenance management system (CMMS) data. Training for clerks must be done by someone with a track record of success in keeping storeroom and inventory mistakes to an absolute minimum. Operations and management of a world class spare parts inventory system Maintaining a world-class inventory system requires that everyone understand the processes and procedures this level of efficiency requires. Defining inventoried items Inventory items are items being stored somewhere in the plant for future use. Information for identification, on-hand balances and replenishment of items is stored in the plant's CMMS system. The information stored will include: item description, location, quantities on-hand, vendor info, Min/Max's and more. Item identification and part numbers are used by the maintenance worker, supervisors, engineering, purchasing and inventory control. Responsibilities for everyone who touches inventory control The person who is developing your spare parts management program must define each person's role in detail. Conduct initial and regular follow up training to ensure clerks, maintenance teams, purchasing and plant engineering managers and teams understand and carry out their responsibilities. Here are 'must have' roles for these categories. Your organization may add others. Storeroom clerks' roles include: Receive incoming shipments, check for damaged items, check the packing slip against the PO to see if we received what we ordered and update the CMMS. Handle all parts safely and ensure no items get damaged. If an item being received is an inventoried item, print a bar code label and attach it to the item. For non-inventoried items, attach a 3" x 5" paper tag to the item that lists the item name, where used, WO and PO number, storage location and name of person who ordered it. Record the serial numbers of all incoming items under warranty. This is very important if we hope to get items replaced under warranties. Most OEM warranty periods start when the item is shipped from an OEM or vendor to us. If there are many similar items under various warranty schedules, the clerk tracks all serial numbers on a serial expiration timeline. Move the incoming parts to their designated storage locations. Create new locations for items that are new inventory items. Retrieve and disburse parts to people who need them. Perform the required CMMS transactions recording the disbursement. Receive items back into the storeroom previously disbursed but not needed in the plant for maintenance WO's. Make the appropriate CMMS inventory quantity adjustments. Receive special order, non-inventory items. Store them in a designated area for these types of parts. Notify the buyer their item(s) have been received. Receive in used parts from trades people that need to be repaired/rebuilt by a vendor and parts that need to be replaced under warranty. These parts need to be stored in a designated area for these types of parts. Notify purchasing of all parts that need to go out for repair or replacement. Clerks never make contact with the vendors - purchasing people do. The separation of this function prevents an information mistakes to the vendors. Manage the length of time the repair, replacement and special-order parts are kept in the storeroom. Clerks constantly monitor this. They may have to contact the appropriate person to get these parts out of the storeroom. Their job: To prevent backup and stagnation of items that take up space. Perform cycle counting of all inventory items. Check the items' accuracy in the CMMS. Assist purchasing in making inventory quantity adjustments. Help perform semi-annual and annual counting of all items in the storeroom Keep the storeroom clean, organized and safe. No items on the floor. No items on top of any storage cabinets. Safety- No items are to be stored in a way they can fall from any location. All inventoried items must be stored in their designated locations. No non-inventoried, temporarily-stored items are to be kept in the storeroom without a 3" x 5" tag attached that describes what the item is and why it is in the storeroom. (Examples: Return to Vendor for replacement, to be sent out for repair, etc.) Specific rack sections must be established for these items. Maintenance trades workers and supervisors' roles and responsibilities include: Only storeroom clerks are allowed in the storeroom. No one is allowed in the storeroom including Maintenance Trades and Supervisors unless they are needed to lift heavy items for removal or assist in identifying items. Make every other day so critical and long lead time items can get ordered ASAP. Update item pricing in the CMMS when prices change. Make sure all items are entered into the computer before purchasing the item. This practice includes non-inventoried items because it gives the buyer instant history information for the item when it needs to be purchased the next time. It ensures all purchased items have a purchasing history in the CMMS plus accurate parts costs applied to WO's. Monitor high and low repetitive parts usages so Min/Max's can be adjusted up or down as needed. Once or twice per year, conduct a complete physical inventory of all items in the storeroom and in remote storage locations. There are several different ways to get this done but whatever methods are used, make sure all items in the storeroom get counted, not just the ones listed in the CMMS as inventory items. Plant engineering and maintenance management's roles and responsibilities include: Use CMMS parts listings to standardize spare parts as much as possible across all plant equipment; pumps, gearboxes, motors, elect controls, etc. Make sure purchasing enters all new items into the CMMS for new spares needed when new equipment is brought into the plant. Work with purchasing and the storeroom clerks to remove items from inventory when they become obsolete. Make sure all items are being charged out to WO's. Assist purchasing and the storeroom clerks with adjusting Min/Max's to ensure minimum quantity (dollars) are being stored on the shelf for all items, especially the items that can be purchased and received daily and within one day, or two days for non-critical items. Organization and identification is everything We should never walk through a parts storage area and find a part not physically identified as either an inventory item or a non-inventory item. Either the item is being stored in an established and labeled inventory location, or the item is tagged with a 3" x 5" tag stating what the item is and why it is there. When items are received, each is identified as an inventory or non-inventory item. Based on their category, place the items in their correct locations. Typically, the majority of received goods are inventory items and when they are being received into the CMMS, a computer-generated 1" x 3" bar code label for each item is printed and attached to the item (if the item is large enough for a label). Then the items are to be taken to their inventory locations and put into place. Non-inventory items are typically for work order (WO) completions and small projects. These items need to be grouped and placed in boxes to keep all the parts together for each WO. WO numbers should be written on the outside of the boxes in large letters and numbers for easy recognition. Choose a specific location to store the WO boxes so everyone knows where to verify if all items have been received for each WO. Usually, these locations are small metal shelving units. Create a specific location established for temporary storage of items that need to be shipped out of the plant. The shipping reasons could be wrong items shipped in for a PO, items damaged in shipments and items being shipped out for repair or warranty replacement. When any item falls into one of these groups, securely with a wire tie or small wire, attach a 3" X 5" paper tag to the item and/or storage box to identify the item. The tag must include the item description, part number, the relative PO # and explain why it's in this location. An example of a typical tag would read: "Part # XYZ123, PO #ABC789 Return to Vendor, Damaged in Shipment". Take appropriate action with the purchaser to get the items shipped out ASAP. No item should sit in this location for longer than (4) days or the location will turn into a large stockpile of mixed-up items that takes up valuable floor and shelf space. You may encounter items in some storage locations that are not inventoried stock items. These items may be "just in-case we need them" items. They are not items to keep in your inventory's on-hand balance in inventory or items for which you need to track usage. These items will not be in the computer system and will not have computer generated labels on them. However, everything in a storeroom should have some form of identification so everyone knows what it is and where it is used. For non-inventoried items, a 3" x 5" tag should be filled out with the item identification information on it and attached to the item (or to the storage location if they are very small parts). These non-inventoried items do not need to be scanned out of the storeroom. Just take them as needed. Very large inventoried items should be stored in the main storeroom and remote storage locations. Each inventory item will be labeled with a peel and stick computer generated bar code identification label, typically 1" x 3". On each label is the description of the item, the item part number, a bar code unique to each item and its storage location. Small items are placed in cabinet drawers or in plastic bins on storage racks with each type of item isolated in individual pockets within the drawers and plastic bins. The barcode label should be placed on the location dividers, behind the parts in that location, in each cabinet drawer or on the plastic bin dividers and not on the part itself. For larger items on rack shelves, the tags can be placed on the item or the box containing the item. These 'tags' can be pieces of 8-1/2" x 11" paper or cardboard with large lettering so they can be read from floor level if the items are stored high on pallet racks. For larger items stored on pallet racks, if it's not practical to place a label on the item or box, a 3" x 5" paper tag should be firmly attached to the item or box and the bar code label placed on the tag. Most items are stored with 'like' items - but not always due to storage space restrictions. Always look for the item first in the computer CMMS first to determine the exact location(s) of the part, which saves time physically looking for it. The worker may discover the item may be in several different storage locations across the plant. This is important because if the quantity of the item is zero in one storeroom location, there may be identical items in a remote storage location. Vendor managed inventory (VMI) can help Vendor managed inventory (VMI) are parts that we may not have in our computer inventory system but are counted, managed and replenished by vendors instead of storeroom clerks and plant purchasing. This cuts down the quantity of items the storeroom clerks have to cycle count. Vendor managed inventory may include relatively inexpensive items such as pipe fittings and nuts and bolts managed by a vendor. The vendor puts their bar code labels on the locations/parts and comes into the plant to perform cycle counts and replenish the stock so the storeroom clerks and purchasing people don't have to worry about keeping these bins full. Other VMI supplied items may include electrical construction type items; filters, hose, drive belts, bulk wire and cable, light bulbs, ballasts and other light components, wire connectors, switches and receptacles. VMI items do not need to be scanned out of the storeroom. Just take them as needed and the vendor will monitor their quantities on-hand and replenish them. To accomplish this, the vendor comes into the plant, counts the remaining items and issues a purchasing request to the appropriate plant purchaser. Some VMI items can be large items such as motors and gearboxes. The reason for VMI of the more expensive items would be pricing discounts if one vendor is given sole supply of them as part of a one-year contract. Storeroom evolution Changes to the storeroom will be an ongoing way of life to keep up with changes with plant machinery. Spare parts for new machines must be added to inventory. New parts will be added and obsolete parts removed for machine changes and upgrades. Parts for existing machines that are not stocked now should be added. Control what parts get stocked Maintenance managers and plant engineers have overall responsibility to keep the plant machines operating. They decide which parts get stocked in inventory and which do not. Everyone needs to work with these individuals to discuss additions, reductions or other changes to any aspect of the storeroom inventory. These managers and engineers will work with the purchasing supervisor to get the changes made. How is this all done? The above advice is a 30,000 foot view of what is needed to be done to set up a world-class maintenance spare parts inventory system. If you are good at reading between the lines, you're likely pondering the thousands of details and questions that must be addressed to make a spare parts inventory control program happen for your facility. What is the time frame for accomplishing all the tasks? How many people do we need to perform them? What special tools and equipment do we need? How do we find needed parts throughout the storeroom upgrade transition period? Who in our plant will spearhead the processes? Can we afford to lose staff for months as we plan and implement a new system? To say that completing a spare parts inventory control system is difficult and time consuming is a gross understatement. Without experienced individuals who are laser focused on the process, it's almost impossible to get a system functioning in any predictable time frame and budget. Do you have an employee or an external expert who has successfully implemented a maintenance spare parts inventory management program? This individual should create a step by step process plan. They must work closely with your maintenance team, purchasing and management. They must be able to immediately answer questions that arise as you structure the new system. Most important, they must keep the process moving. Keep your machines running with the maximum amount of up-time and minimum unplanned downtime by having the parts you need as soon as you need them. - Ken Staller is a senior consultant at Daniel Penn Associates (DPA), a CFE Media content partner. 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