Information Technology

Tips For Reducing Your Inventory Headache

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Intelligent inventory management plays a key role in a successful maintenance program. A smart inventory solution can significantly reduce costs and equipment downtime, prevent overstocking, cut the time spent searching for parts and improve inventory data.

Though each industry and company's needs and requirements vary, there are some general strategies that can help optimize your inventory investment. Spare parts typically make up 30% to 40% of the typical maintenance budget. The average inventory holding cost, (i.e., the cost to keep parts in the storeroom) ranges from 10% to 20% of the parts value [Ref. 1]. Included in the holding cost are insurance (typically 4%-6% of the parts value) and taxes (5% to 8% of the parts value). (For a small storeroom with $1M in inventory, those figures translate to $40,000 to $60,000 for taxes and $50,000 to $80,000 for insurance.) And these calculations don't even begin to take into consideration the costs of equipment downtime, should it occur!

Keys to keeping inventory expenses in line are management of part checkouts and prevention of over-ordering. . .

The first step is to review inventory procedures. Checking out parts correctly is the place to start. Spare parts must be checked out in the computerized maintenance management system (CMMS) every time they're used—*and checked out according to company procedures*. It's best to link the checked-out part to a work order, which allows the part used for a specific job, along with associated labor charges, to be charged to the specific equipment listed on the work order.

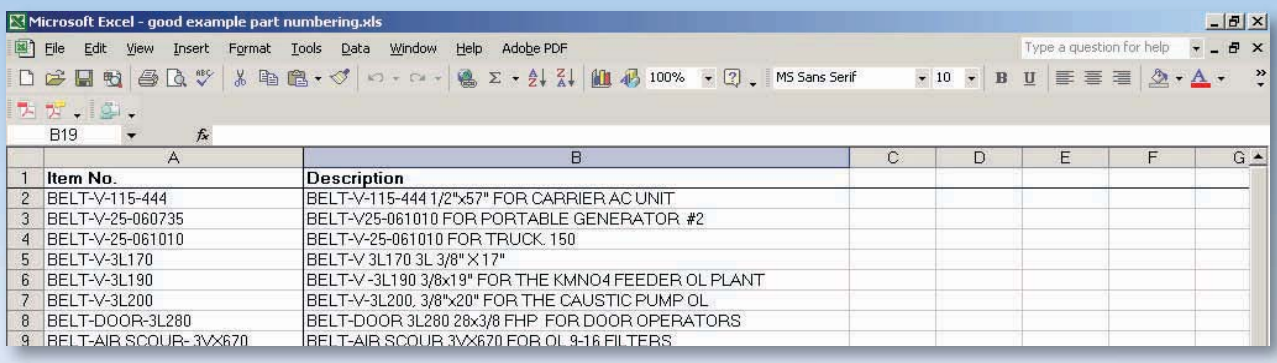
If a work order isn't required, it's best to check out parts directly to the equipment it is used on. Either way, a record of the person who most recently checked the part out is accessible. If a part shortage arises, that person could be contacted.

Checking out parts properly will ensure that the equipment has the correct labor and material charges. This data is available for assessment of overall equipment maintenance cost and whether a replacement of the equipment is justified. Inventory quantities on hand will be more accurate, reducing the need for constant cycle counts.

The second recommended step is to review how stock items with pre-determined re-order point and re-order quantity are handled. A reorder point is the inventory level when additional parts need to be ordered, and reorder quantity is the amount of parts to reorder. A reorder point and quantity should be set for stock items. Lead times should be taken into account when determining re-order point and re-order quantity. If the re-order data has been agreed upon by maintenance, purchasing and stores staff, there is no need to get a written or electronic approval each time stock parts need to be re-ordered. The stores staff can run a re-order query for the stock items and have the system approve it automatically. If possible, purchase orders should be created automatically (from the re-order query) for these stock items needing replenishment. Requiring managers to approve these stock items is unnecessary and can result in delays in ordering, and potentially even equipment downtime. If a manager does not approve the re-order list promptly, typically none of the parts on the list will be ordered until all the signatures are obtained.

Once procedures for checking out and re-ordering stock parts have been solidified, the third step of standardizing part names and cleansing part data can be started. Storerooms often have duplicate parts (the same part with different part numbers and descriptions). This can cause over-ordering, time lost, and frustration due to searching for a part that appears to have zero quantity, only to be found elsewhere, with a different part number and available for use. Data cleansing could be outsourced, but there are some disadvantages. The stores staff will have to spend significant time anyway providing or agreeing to part nomenclature, and once the contracted cleaning company has provided the "clean" data, the stores staff will be tasked with maintaining it. For storerooms with more than 7000 inventory items, this task may seem overwhelming. In this case, an outside company can help streamline the process (i.e., re-naming parts based on new naming conventions).

There are different ways to name parts. One preferred method is to begin with the commodity group or type (for example: belt, bearing, valve, fitting, etc.), followed by information describing the part and a company-created number (not the vendor number). Using the vendor's part number can be a problem if you switch vendors, and most CMMS systems have fields in which you can enter your primary and secondary vendor part numbers. Placing the maximum amount of data in the part description field (such as descriptive information about the part, manufacturer and primary vendor) will enable the maintenance staff to search only in one data field (this will be possible only if the part description field holds at least 40 characters). As shown in the screenshot at the top of page 47, data should also be entered in the field intended for it (i.e. manufacturer data should be listed in the manufacturer field).


Microsoft Excel - good example part numbering.xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

B19

	A	B	C	D	E	F	G
1	Item No.	Description					
2	BELT-V-115-444	BELT-V-115-444 1/2"x57" FOR CARRIER AC UNIT					
3	BELT-V-25-060735	BELT-V25-061010 FOR PORTABLE GENERATOR #2					
4	BELT-V-25-061010	BELT-V-25-061010 FOR TRUCK. 150					
5	BELT-V-3L170	BELT-V 3L170 3L 3/8" X 17"					
6	BELT-V-3L190	BELT-V -3L190 3/8x19" FOR THE KMNO4 FEEDER OL PLANT					
7	BELT-V-3L200	BELT-V-3L200, 3/8"x20" FOR THE CAUSTIC PUMP OL					
8	BELT-DOOR-3L280	BELT-DOOR 3L280 28x3/8 FHP FOR DOOR OPERATORS					
9	BELT-AIR SCOUR- 3VX670	BELT-AIR SCOUR 3VX670 FOR OL 9-16 FILTERS					

The process of standardizing inventory will help eliminate the duplicates that currently exist in the database, and prevent duplicates from occurring in the future. Only one or two people should be assigned the task of entering new parts/modifying existing ones so that there aren't several different methods of naming parts implemented at the same time. An inventory-standards dictionary should be created—*and strictly adhered to.*

Once duplicates have been eliminated and part numbers have been standardized, the maintenance and stores staff still may have difficulty on occasion to find a needed part. Taking a digital photo of the part, and including the part identification number/name in the photo, and then attaching the photo to the part record can help identify the part. Often, maintenance personnel know what an item looks like, but not the exact part number. Maintaining photos of parts that also bear the numbers/names of such items is an effective way to help staff locate what they need.

When new parts are added to the database, it's beneficial to make the following key fields required: description, type,

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A Date	B Item Requested	C Description	D Qty Short
2/12	19735	3/8-16 SS HEXNUT	1
2/21	20245	IGNITION MODULE, DISCONTINUED	3
3/5	20335	SLEEVE, COMPRESSION, 1/4" TUBE	1
4/1	20527	PRESSURE GAUGE, 1-1/2" DF, 160 PSI	7
5/4	20529	BLADE, 44-7/8" X 1/2" X .20 10 TPI STRAIGHT	2
5/31	20530	BLADE, 44-7/8" X 1/2" X.20 18 TPI WAVY	9
6/2	20532	DBL ACTING NOSE MINT AIR CYL 1-1/2" BORE, 5" STROKE	2
6/30	99619	DEFINITE PURPOSE CONTROLLER	1

primary vendor, unit of measure and price. Typically the part number must be entered before any corresponding fields can be entered, so the part-number field will be required by design. Making these key fields required when the new part is entered prevents the stores staff from putting it off until "later" (which often can mean "never"). If the data is required when a new part is created—*and the part can't be checked out or received until that data is entered*—the accuracy of your database will increase.

Sometimes, stock-outs (parts not available upon request) may occur regardless of carefully following procedures. Keeping track of stock-outs, the part requested and the quantity short would help modify the inventory re-order points and quantities to a more optimal value. While newer CMMS programs include stock-out tracking functionality, older programs may not. Stock-outs can be tracked in Microsoft Excel (as shown above) or another database program. Ideally, this type of function should be a feature of your CMMS. Keep in mind that blaming your stores staff when a stock-out occurs isn't constructive. Doing so will result in the hiding of a problem instead of encouraging the stores staff to fix it. **MT**

Reference

[1] Slater, P., *Smart Inventory Solutions,* 2007, Industrial Press

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VSD Software For Pumping Systems

WEG has released new Pump Genius Software for its CFW-11 variable speed drive. According to the manufacturer, this unique process-control package is capable of managing and monitoring up to six pumps in a coordinated system. It can operate motors from 5-150 hp in the 208 and 230/240 VAC range, and motors from 5 up to 600 HP in the 480 VAC range. Among the product's key features is its ability to monitor the operating hours of all the pumps in a system, adding and subtracting units as demand changes, all without the need for setting a cycle timer, thus ensuring equal pump run times without supervision. Another key feature is the ability to have a floating master and slave rather than the traditional system of fixed master and slave pumps. Pump Genius automatically senses if the master is not responding due to sensor loss or other fault condition and assigns a unit pump to become the master, which allows for operational continuity at all times during the process. The transition between master drives is done in a totally bump-less manner without disturbing the process. The CFW-11 VSD with Pump Genius software also monitors and alarms system, motor and drive faults, which will alert the operator to a potential problem. Available in drives in various sizes from 2 to 600 hp, these drives incorporate a user-friendly graphic keypad HMI with large-character graphics and read-out.

WEG Electric Motors Corp.
Atlanta, GA

For more info, enter 05 at www.MT-freeinfo.com