

Kanban Made Easy

By Mike Shapiro

W E I *Editor's Note: When Mike Shapiro suggested to this editor the notion of an article on kanbans, her mind swirled with images of... what? Dog food? Something you might order in a sushi bar? A sugar-free diet? Well, if you are as mystified as we were as to just what the heck that term meant, this article should help bring your imagination back to earth. Turns out kanban is both a concept and a very specific technique supported by the World and EnterpriseOne Manufacturing suites. Mike shows us how we can come even closer to that lean, mean, manufacturing machine we strive for!*

Introduction

First of all, just what is a kanban anyway? Here is an excerpt from the American Production and Inventory Control Society (APICS) definition:

kanban : A method of Just-in-Time production that uses standard containers or lot sizes with a single card attached to each. It is a pull system in which work centers signal with a card that they wish to withdraw parts from feeding operations or suppliers. The Japanese word kanban, loosely translated, means card, billboard, or sign. The term is often used synonymously for the specific scheduling system developed and used by the Toyota Corporation in Japan.

As conceived by Toyota, the kanban was a card affixed to the front of a parts container. When the container was emptied the card was removed. The card identified the

item, replenishment quantity, supplier or supply point, and consuming location. It was sent to the supply point (or external supplier) to indicate the need for replenishment. Receipt of the card was sufficient authorization to fill another container and send it to the consuming location. The consuming location had one or more additional containers on hand to satisfy demand until the replenishment arrived. In theory, the consuming location would never run out of parts.

In the intervening years since the Toyota production system became known in the western world, and the APICS definition was formulated, the body of knowledge surrounding this area of production management has evolved. Many people recognized that the term Just-in-Time did a major disservice to a much larger concept for streamlining production and eliminating non-value-added activities. In this conceptual model, anything that doesn't add value is waste. A number of terms have been introduced to replace Just-in-Time, but at their core, Flow, Lean, and Agile manufacturing are just variant approaches to attaining a streamlined production system.

In theory, kanbans sound simple: at their most basic level, they enable a demand pull production execution system. Each kanban signals the need to replenish—at a specific consuming location—a specific quantity of a specific part from a specific supply location. Kanbans promise potentially huge reductions in non-value-added “administrative” activity, and large reductions in inventory carrying costs.

Each kanban signals the need to replenish - at a specific consuming location - a specific quantity of a specific part from a specific supply location.

So why don't we see more of them? Do they really require a lean, stable, flow-type repetitive environment? Can they be used in a discrete environment? How big is the gap between theory and reality for World/EnterpriseOne users?

This article will attempt to demystify the requirements to set up and use kanbans in a World/EnterpriseOne environment. The article will demonstrate the high relevance of kanbans to a discrete production environment through three examples: replenishment from stock, from a vendor, and from a producing work center (also known as a “Make” kanban).

Let us begin with a high level look at the setup required for these examples, and then we'll walk through the kanban process itself.

System Requirements

As described so far, a kanban system can operate independently

of an electronic enterprise management system to ensure the flow of replenishments as materials are consumed. But that mode of operation does nothing to maintain accuracy of a perpetual inventory system. It does nothing to capture the “value added” costs to produce the kanban parts consumed, and it does nothing to recognize the “accounts payable” liabilities associated with the kanban parts purchased from outside vendors. To do all that, we must somehow get the kanban data into the system.

The first step is to populate the Kanban Master File. After it is set up, we can go through the process in the examples that follow. We’ll see that many of the materials management transactions that we would normally record manually can be handled automatically by the kanban software. Users need only tell the system when we need parts, and when they arrive. The system can do all the rest.

Consider the Kanban Master File as an electronic deck of kanban cards. The Kanban ID is just a sequence number for the line, or record. Each line represents a kanban “card”. It contains the basic data described above, as well as some additional data necessary for the system to manage and control what is happening. Look at Figure 1. Each line shows an item (part) number, its consuming location ID, supplying location ID, and replenishment quantity. Other data includes the leadtime in hours until the replenishment appears, a sourcing code that indicates if the replenishment comes from inventory, from a producing work center, or from a vendor, and the address book number of the vendor for purchased parts. Kanbans are set up in PDM on the G3041 menu, program P3016.

Note: In this and subsequent illustrations, the sequence of columns of JDE Demo data have been rearranged, and the columns have been narrowed to display data relevant to the topic under discussion.

Replenishment from Stock

The software differentiates sources of supply by replenishment source type (date field alias is REPT) to invoke the appropriate system functions to maintain data integrity.

The simplest kanban is the replenishment from stock. A stock-to-stock transfer, such as from a central stockroom (primary) location to a consuming (secondary) location in a work center or production cell, is identified by the value “2” in this data field. See Figure 1. (Source

Type is just left of center in the illustration).

When we recognize the need for additional parts at the consuming location (typically, when we use the last item in the container), we pull the kanban card from the container and send it to the supply point. The way we tell the system that we are sending the card out for replenishment is to “Check Out” the kanban record (Kanban Consumption, P3157, Menu G3115. See Figure 2). Check OUT tells the system we are OUT of stock and need more. (The kanban card can be bar coded, and the scanner software can interface to P3157). As mentioned, the electronic kanban record, and the kanban card, contain the item number, item quantity, source location, and

Kanban ID	Item Number	Consuming Location	Supplying Location	Kanban Size	UOM	Replenishment LeadTime	Source Type	Phases	Consuming Br/PI	Supplying Br/PI	Supplier	Receipts	Override	Container Size	Number of Cards
579	9104	1.R.1	S4.343	260	MT	80.00	3	1	M30	M30	4343	1	0	260	1
580	9105	LC.30	1.R.2	260	EA	16.00	2	1	M30	M30		0	0	260	1
588	2037	LA.80	LC.50	60	EA	16.00	1	1	M30	M30		0	0	60	1
592	9104	LA.40	1.R.1	1280	CM	4.00	2	1	M30	M30		0	0	1280	1
595	9102	LA.10	1.R.1	100	MT	4.00	2	1	M30	M30		0	0	100	1
596	9102	LC.10	1.R.1	1050	CM	4.00	2	1	M30	M30		0	0	1050	1

Figure 1 - JDE Kanban Demo Data

Kanban ID	Card Number	Kanban Status	2nd Item Number	Transaction Quantity	UOM	Container Size	Kanban Size	Consuming Location	Supplying Branch	Supplying Location	Source Type
579	1	1	9104	260	MT	260	260	1.R.1	M30	S4.343	3
580	1	1	9105	260	EA	260	260	LC.30	M30	1.R.2	2
588	1	1	2037	60	EA	60	60	LA.80	M30	LC.50	1
589	1	1	2039	50	EA	50	50	LA.80	M30	LC.50	1
590	1	1	2038	50	EA	50	50	LA.80	M30	LC.50	1

Figure 2 - Kanban Checkout

This Article Continues...

Subscribers, log in from our main search page to access the full article:

www.JDEtips.com/MyAccess.html

Not a Subscriber? Gain access to our full library of JDE topics:

www.JDEtips.com/JD-Edwards-Library

Visit www.JDEtips.com for information on the JDEtips University schedule, private training and consulting, and our Knowledge Express Document Library.

License Information: The use of JDE is granted to JDEtips, Inc. by permission from J.D. Edwards World Source Company. The information on this website and in our publications is the copyrighted work of JDEtips, Inc. and is owned by JDEtips, Inc.

NO WARRANTY: This documentation is delivered as is, and JDEtips, Inc. makes no warranty as to its accuracy or use. Any use of this documentation is at the risk of the user. Although we make every good faith effort to ensure accuracy, this document may include technical or other inaccuracies or typographical errors. JDEtips, Inc. reserves the right to make changes without prior notice.

Oracle and J.D. Edwards EnterpriseOne and World are trademarks or registered trademarks of Oracle Corporation. All other trademarks and product names are the property of their respective owners.

Copyright © by JDEtips, Inc.