

SERIAL NUMBERS:

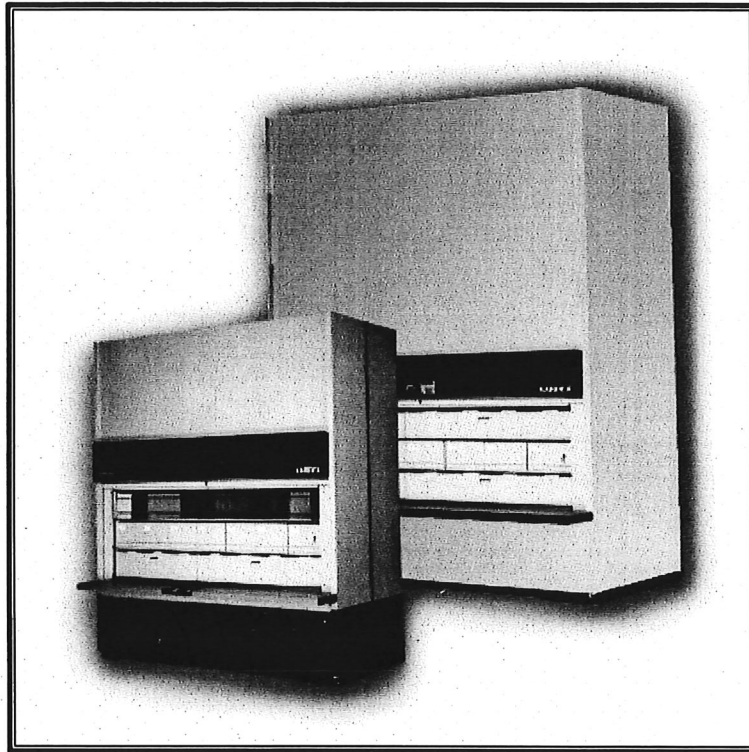
CHARLIE = 0000033165

ALPHA = 0000033163

BRAVO = 0000033164

MODEL # LK-2000

Lektriever 2000 Industriever 6000A



Operator Manual

For firmware version 1.4+

Revised - 8/22/03

KARDEX[®]
Information & Materials Management Systems

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Input Power

Lektriever input power: Make sure the machine is plugged into a power source and the service switch (located under the right side of the overhead light) is ON.

Industrieriever input power: Power is directly connected to an Industrieriever and the branch circuit disconnect switch must be turned on. (There is no service switch on an Industrieriever.)

To turn the machine ON



Press the **ON/OFF** key on the Operator Console.

Press the key again to turn the machine off.

If the machine does not turn on, make sure it connected to power. The Lektriever service switch (located under the right side of the overhead light) must be ON.

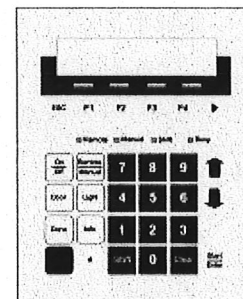


Figure 0

Startup

The first time the machine is operated after power has been turned on, there may be a few seconds delay while the motor control is activated.

A timer automatically removes power to the motor control circuitry if the machine has not been operated for an extended period of time or a safety device has been activated. The motor control re-activated automatically when a new selection is made and will remain active during normal machine activity. This process is fully automatic.

To open the door



With a power (motorized) door, unlock the door and press the **Door** key to open the door.

If the manual power door close feature has been selected, the **Door** key must be pressed and held until the door is fully closed.

If the automatic power door close feature has been selected, press the **Door** key until the door starts closing. The **Door** key may then be released and the door will continue to close automatically.

A manual (non-motorized) door must be unlocked and manually lifted to the full open position. The Door key is not functional on machines with manual doors.

Note that on some machines with moveable posting boards, you must raise the posting board before the door will fully close.

To turn on overhead light



Press the **LIGHT** key on the Operator Console.

Press the key again to turn it off.

The light may be turned ON even when the machine is off and may be used as a night light.

About Modes

☐ Remote ☐ Manual

The Lektriever / Industrier operates in either of two control modes.

The **Manual** mode allows direct control using the Operator Console.

The **Remote** mode allows a remote computer to assist with selecting items in the machine.

The Manual mode is normally selected when power is turned on.

Manual Mode

In Manual mode, items are selected directly from entries made at the operator console.

In Manual mode, the remote computer cannot operate the machine or cause it to move.

To select Manual mode

☐ Remote ☒ Manual



Press the Remote/Manual key until the Manual indicator is ON.

The Remote and Manual indicators on the Operator Console display the operating mode. The Remote/Manual key switches between the two modes.

For dual access machines, press the **START** key to activate the console when the message "Ready" is displayed. The other console cannot be used until the **DONE** key is pressed.

To unlock the console Manual mode

If the 'Console Locked' message is displayed, enter a valid passcode and press the green **START** key. (A supervisor assigns the passcodes.)

The console will remain unlocked until the **Done** key, the **Remote** key, the **ESC** key or the **ON/OFF** key is pressed.

The console may automatically lock if the machine is not used for an extended period of time.

To lock the console Manual mode

Press the **DONE** key to lock the console when finished using the machine.

The Remote key will still select Remote mode but a passcode will be required to enable Manual mode again.

- The console will not lock if this feature has not been activated.

If the machine is equipped with an automatic door, it may close when the console is locked.

To select a level

Enter a level number and press the green **START** key.

The selected level will move to the posting position and stop.

If the levels do not post at the proper position, enter the selection again, press the Shift key and then press the Start key. The machine will rotate at least one full revolution to synchronize the posting levels and then stop at the proper position.

Note that the first time a selection is made after a long period of inactivity, movement may be delayed a few seconds while the motor control is activated.

To stop movement

Press the red **STOP** key.



Press the red Emergency Stop (ESTOP) button to immediately stop the machine.

Pull the ESTOP button out to reset and allow the machine to run again.

Note: Lektrievers may not be equipped with the optional ESTOP button.

To scan levels



Press and hold the green  or  key.

The levels will move until the key is released and then stop at the next closest level.



Press the Shift key before pressing the  or  key and the levels will move slowly and stop immediately when the key is released.

To move to the next level



Momentarily press the  or  key.

The next level will be moved to the posting position.



To clear an entry



Press the **Clear** key and enter a new number.

The Clear key only works before the Start key has been pressed.

To clear a message

 Press the **ESC** key to clear an information or safety message.

When done using machine



Press the **DONE** key when you are finished using the machine.

For dual access machines it allows an operator to use the other console to select levels.

If security options are used, it may close the door and passcode protect the operator console.

Dual Access Machines

If the machine has two operator access openings then the machine may be controlled from either console. **Only one operator may control the machine at a time.**



Press the **START** key to activate the console when the "Ready" message is displayed.

The other console is disabled until the **DONE** key is pressed.



Press the **Done** key when finished using the machine to allow the other operator to use the machine.

To Check Run Time and Service Schedule



Press the **INFO** key and then press the **Srvc** (F2) key.

The total time the machine has actually run is displayed in minutes. The remaining run time until recommended service is displayed in minutes.

Press **ESC** when finished.

To Check Passcodes, Timeout and AutoPark Level



Press the **INFO** key and then press the **Opt** (F3) key.

The number of passcodes assigned the console timeout seconds and the AutoPark level number is displayed.

If the number of passcodes is 0, the security features are not enabled and the console will never lock.

If the time value is 0, the console timeout feature is not enabled and the console will never automatically timeout.

If the Park level number is 0, the AutoPark feature is not enable and the machine will not automatically park a level at the operator access opening.

The Supervisor may set these features as required.

Press **ESC** when finished.

To Quick Check Safety Sensors



Press the **INFO** key and then press the **Test** (F3) key. Press **Safe** (F1) to select the safety sensor test.

One at a time, activate any safety sensor or device and verify that it is displayed

on the console. Restore each device to its normal position when finished.

The upper and lower safety bars, upper and lower sentry photo beams, lower access panel, hand crank panel, posting board latch handle and should all be displayed when pressed, blocked or removed.

Call for service if any safety device fails to display a message when activated.

Press **ESC** when finished.

To Quick Check the Position Indicator Light Bar



For machines equipped with a light bar, press the **INFO** key and then press the **Test** (F3) key. Press **LBar** (F2) to select the light bar test.

The test will step through each indicator light, one at a time, to verify all position lights are operational.

To test a specific light, press **Start** to stop cycling and then enter the light bar number and press **Start** again.

Call for service if any light fails to operate.

Press **ESC** when finished.

To Quick Check the Remoter Computer Interface



The machine should be connected to a remote computer operating at 9600 baud in terminal mode. This test sends messages to the computer to verify interface connections.

DO NOT USE THIS TEST DURING NORMAL REMOTE COMPUTER OPERATION!

Press the **INFO** key and then press the **Test** (F3) key. Press **Rem** (F3) to select the remote interface test.

The Unit ID number for this console is displayed.

Press **send** (F1) and a repeating message will be sent to the host until the **ESC** key is pressed. Any character received from the remote host interface is displayed as it is received.

The interface is connected and operating normally when messages are received at the remote computer.

Press **ESC** when finished.

To Quick Check Photo Beams



Press the **INFO** key and then press the **Test** (F3) key. Press **Beams** (F4) to select the photo beam test.

The test will alternately test the upper and the lower photo beams and verify they are responding correctly to both 'light' and 'dark' conditions.

The 'Beams OK' message indicates the photo beams are functioning normally.

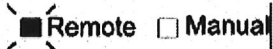
A 'Beam fault' message indicates the photo beams have failed, are blocked, or are out of adjustment. Call for service if the fault cannot be corrected.

Press **ESC** when finished.

Remote Mode

In Remote Mode, the remote computer will automatically select items and respond to entries made at the machines operator console.

To Select Remote Mode



Press the **Remote/Manual** key until the Remote indicator is ON.

For dual access machines, press the **START** key to activate the console when the "Ready" message is displayed, then press the **Remote/Manual** key

The remote computer will automatically select levels. Any numbers you enter in remote mode will be sent directly to the remote computer.

See the operating instructions that are provided with the remote computer control system.

To return to manual mode, press the **Remote/Manual** key until the Manual indicator is ON.

*The **↑** or **↓** keys do not work in remote mode.*

Machine features:

The Lektriever Service Switch

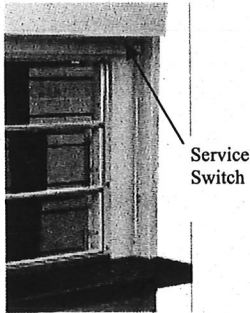


Figure 0

Before operating the machine, make sure the Service switch is in the ON position.

To completely remove power from the machine during extended periods of non-use, weekends, servicing, etc. change the Service switch to OFF.

Note that Industrieres do not have a service switch and power must be removed with the branch input disconnect switch.

Sentry Photo Beams

There is a photobeam across the top of the operator access opening and a beam across the bottom of the opening. The beams prevent protruding shelf items from being damaged or possibly damaging the machine.

If a beam becomes blocked and stops the machine, remove the obstruction and try again.

Machines with movable posting boards have two lower beams, one for the raised and one for the lowered position of the posting board. Moving the posting board automatically selects the proper beam.

Moving the posting board

On machines with movable posting boards, reach under the middle of the posting board and pull the release latch toward you. Firmly raise or lower the posting board and then release the latch until it locks into position automatically at the desired level.

All level selections will be brought to the new posting board position.

Loading the Machine

The machine operates best when the media weight is somewhat evenly distributed throughout the machine. An unevenly loaded machine can create an excessive imbalance that will reduce the overall capacity of the machine.

After loading a carrier with new media, try to plan loading of additional media on a carrier that is approximately half way around the machine. (For a 10-carrier machine, half way would be about 5 carriers in either direction. (The actual level is not important.)

An Imbalance Warning message will indicate when the imbalance load is approaching maximum capacity and weight distribution should be considered when adding large amounts of new media.

To help identify where to add new media, see 'To Check Imbalance'.

To Check Imbalance

Use the Balance information to help when adding large amounts of items at one time and periodically during normal operation to make sure load imbalance conditions do not become excessive.

It is normal to always have some imbalance. Only when the Imbalance Warning message is displayed should there be any concern for weight distribution.

An imbalance means that at some point during rotation, the total weight of the items on one side of the machine are heavier than the on the other side. There is usually no single offending level to change but the overall imbalance condition may be improved by adding or removing items anywhere within a range or group of levels.



To find the range of levels to change, press the **INFO** key and then press the **BAL** (F1) key.

Only if the load imbalance is more than 50% of capacity will the following information is displayed:

Example: Reduce: $3 > 1 < 11$
 or Add: $5 > 7 < 9$

The information displayed indicates what range of levels to either reduce or add weight to bring the machine back to normal balance.

The first line indicates the range of levels to reduce weight (already too heavy) and the second line indicates the levels to add weight (already too light).

The first and last numbers of each line are the beginning and ending level of the heavy or light load area. The center number is the center of each area.

For this example, the next new items you add to the machine should be in the area between levels 5 and 9. Or you may remove some items from the area between 3 and 11 and move them to the area between 5 and 9.

To find the best area to add items, select the center level number displayed on the Add line and then scan between the beginning and ending level numbers, looking for an empty area to add items.

To find items to remove or move, select the center level number displayed on the Remove line and then scan between the beginning and ending level numbers, looking for items that could be removed.

Press **ESC** when finished.

To re-analyze balance after moving or adding a lot of items, press the Shift key before pressing the BAL (F1) key.

Retrieving dropped items

The lower front access panel may be removed to aid in retrieving dropped items.

1. Remove power to the machine.

For Lektrievers, change the Service switch to OFF.

For Industrier, lock the branch circuit disconnect switch OFF.

2. Unlock both key latches on both ends of the panel and tilt the panel forward (or remove the panel) to retrieve dropped items.

The machine will not operate until the panel is returned to its normal position.

3. Restore power to the machine to resume normal operation.

Emergency Operation

If power should fail during an emergency, the machine may be operated by using a hand crank as follows:

To hand crank the machine:

1. Remove power to the machine.

For Lektrievers, change the Service switch to OFF.

For Industrier, lock the branch circuit disconnect switch OFF.

2. Remove the hand crank access cover.

For Lektrievers, lower the posting board to the seated position and remove the hand crank access panel on the right side by lifting upward and then outward from the bottom edge.

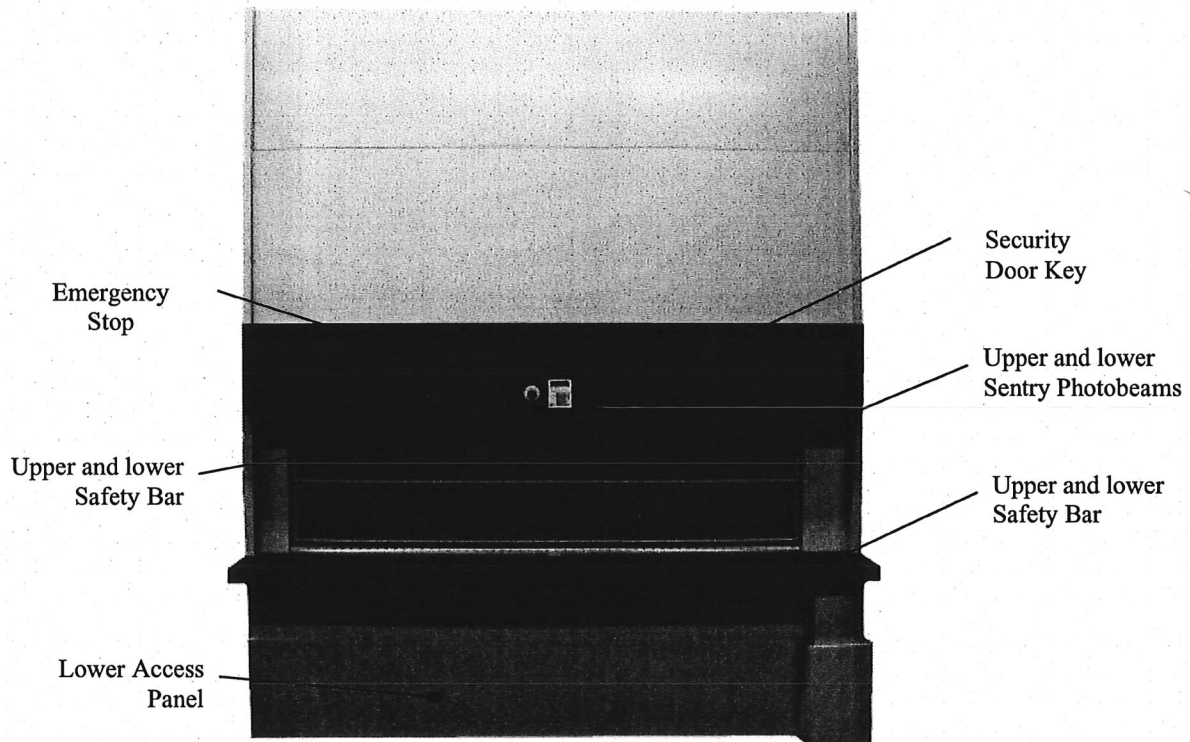
For Industriers, remove the two screws on the posting board access cover located on the right side of the posting board.)

3. Slide the end of the hand crank over the end of the motor shaft until it locks securely and crank the machine until the desired level is accessible.

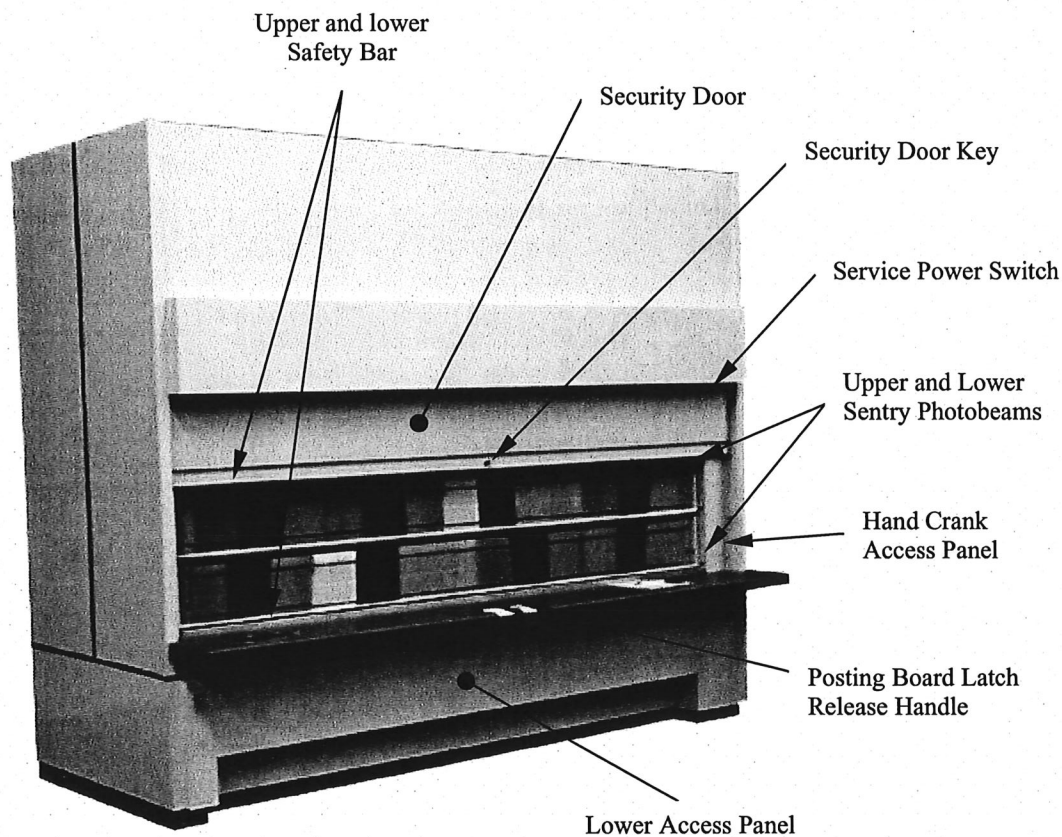
If power is restored, the motor will not operate until the access panel is replaced.

To return to normal operation:

1. Remove the hand crank and replace the access panel.
2. Restore power to the machine to resume normal operation.



Industrier
Figure 3



Lektriever

Figure 4

Console Messages

The following messages indicate conditions that may be easily corrected. The usual action is to correct the problem and try again.

If any other message is displayed that is not understood, call for service and report the exact message.

Not a valid level!	The level selected is not available in this machine. Select another level and try again.
Access Denied	The level selected is locked out for this user passcode and cannot be selected. See the Supervisor for access or select another level.
Console x Ready Press Start	In a dual access machine, both consoles are ready to operate the machine. Press Start to activate the console. The other console will be disabled until the Done key is pressed.
Another console using machine!	In a dual access machine, this console is locked because another operator is using the machine The other operator must press the Done key on their console before this console will operate.
IMBALANCE WARNING or Stopped by Imbalance	The imbalance load is nearing or has exceeded rated capacity and stopped the machine. Press the INFO key, then the BAL (F1) key to analyze the imbalance, then consider moving or adding items to reduce the imbalance condition.
Stopped by Timeout	The machine has run continuously for an unusual amount of time. Try again.
Console Locked	The machine is passcode protected. Enter a valid passcode and press Enter. See Supervisor for valid codes.

Upper Bar_ pressed!	The upper or lower safety bar is pressed. (see figure 2)
Lower Bar_ pressed!	Remove the obstruction pressing the bar and try again.
Lower Panel ajar!	The lower access panel is not closed. (see figure 2) Close the panel securely and try again.
Posting Board ajar!	The posting board is not locked in the full up or down position. (see figure 2) Raise or lower posting board and make sure latch handle is pushed in, then try again.
Upper Door ajar!	The upper security door is not fully up or down. (see figure 2) Raise or lower the door to its fullest position and try again.
Upper Beam blocked!	The upper or lower sentry beam is blocked. (see figure 2)
Lower Beam_ blocked!	Remove the obstruction blocking the beam and try again.
Upper Beam fault	The upper or lower sentry beam is blocked. (see figure 2)
Lower Beam_ fault	Remove the obstruction blocking the beam and try again.
Crank Panel ajar!	The emergency hand crank panel is not secured. (see figure 2) Close or reposition the panel and try again.
Door Obstructed	The motorized door was obstructed while trying to close. Remove the obstruction and try again.
Door Locked	The motorized door is key locked and cannot open. Unlock the door and try again.

Door not closed	The motorized door has not closed in a reasonable amount of time. Try again or call for service.
Disabled by UP/DN SW	The supervisory UP/DN control is overriding the console. Disable supervisory mode and try again.
Reset ESTOP switch!	The ESTOP safety switch is activated. Reset the ESTOP switch by pulling (or rotating) to release and try again.
Press Safety Reset!	The safety system must be reset. Press the green Reset button and try again.

Power Requirements

Lektriever 2000:

Power rating: 120VAC, Single Phase, 60Hz, 20A max.

Approvals: UL/cUL listed.

See installation manual for details.

Industrier 6000A/6250A/3500A

440V Power rating: 380 to 480 VAC, 3 Phase, 60 Hz, 10 A max.

or

220V Power rating: 200 to 240 VAC, 3 Phase, 60Hz, 20A max.

See installation manual for details.

Lektriever Console Label Template:

To replace the label on the console, copy this page and cutout the label on the dotted line. Remove the protective label window and replace the label.

1		23	
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Warranty Statement

Kardex warrants that each unit of Equipment, under normal use, shall conform in all material respects to any published specification and shall be free from defects in material or workmanship for a period of one year from the date of its delivery by Kardex, provided that the Equipment has not been tampered with or repaired by any person other than Kardex or its authorized agents, and provided further that the customer notifies Kardex in writing of any such defects immediately after discovery thereof. Kardex shall not be liable for any damage to any Equipment resulting from the misuse or negligence or if any alterations have been made to the Equipment which have not been authorized in writing by Kardex. The sole and exclusive obligation of Kardex under this warranty is limited, at the option of Kardex, to the replacement or reworking of the defective Equipment or the return of that portion of the purchase price applicable to the defective Equipment. This warranty does not cover defects, damage, or deterioration due to normal use, wear and tear, or exposure; normal maintenance services; replacement or service items; damage or defect due to misuse, alteration, negligence, or accident; or any Equipment modified or operated contrary to any instructions or specifications provided by Kardex. THE ABOVE WARRANTIES ARE GIVEN IN LIEU OF ANY OTHER REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, AND INCLUDING, BUT LIMITED TO, THE IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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Printed in U.S.A.
Cat No, GEN-239-A

6004556-002