Hill Repex Table

Owner's Manual

Hill Laboratories
COMPANY

Quality and Innovation Since 1945.

Congratulations!

And welcome to the Hill Laboratories family.

Hill Laboratories Company has been making quality a family business since 1945. Your Hill Repex Table is built in a tradition of innovation and value that Hill Laboratories products have become known for. Our good name rests on the confidence that your Hill Table will provide you with solid, reliable service for many years to come.

At Your Service

The Hill Laboratories Guarantee.

Your Hill Laboratories table has been thoroughly tested and inspected before shipment. All parts are guaranteed against defect in materials for one full year from the date of purchase. During this period, any such defect will be remedied by Hill Laboratories or by a factory-authorized repair service at no charge. Tables damaged by mishandling or accident will be repaired at a reasonable charge. All correspondence should be directed to your local dealer, or when this is not possible, to Hill Laboratories directly.

We appreciate your business and your confidence in our products. Our aim is to provide you with excellent service and satisfaction for many years to come.

Howard A. Hill
President, Hill Laboratories

Hill Repex Manual

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Introduction

The McKenzie system of diagnosis and treatment for painful mechanical spinal disorders involves the use of repetitive endrange movements which influence the location and intensity of pain arising from the spinal column[1].

The model developed by McKenzie is based on the concept that intervertebral disc fluid, nucleus or dislocated tissue displaces according to the directional forces applied. Should displacement occur to such a degree that pain is produced, repeated movements to endrange applied in the opposite direction will reduce such displacement (the Derangement Syndrome).

Where back pain is caused by scarring, contracture or nerve root adherence and fibrosis, (the Dysfunction Syndrome) remodeling of tissue is possible using repetitive movement[4]. Treatment by progressive repeated endrange movement is the basis for what have become known as "McKenzie Exercises".

Limitations, however, have been reported using the McKenzie methods. Patient fatigue, for example, has been cited as a limiting factor. Because of fatigue, in one treatment session patients are forced to discontinue exercises at the very time when continuation of them would provide progressive improvement or total relief of symptoms.

A further limiting factor exists where significant loss of movement restricts the patient's ability to exercise appropriately. Elderly patients and those with problems in joints of the upper extremity are unable to repeat therapeutic exercises to the maximum potential. Thus, recovery is retarded or prevented.

The REPEX™ machine was initiated by McKenzie in 1988 to enhance the effectiveness of repeated endrange movement therapy for mechanical disorders of the low back. The concept of using continuous endrange passive movement was introduced to enable the lumbar spinal segments to be moved to the full available endrange of passive physiological movement a greater number of times than is physically possible using patient generated exercises.

REPEX™ can provide approximately 10 cycles per minute of flexion or extension or both.

By applying progressive repeated endrange exercises, patients can frequently experience a rapid centralization, reduction, or abolition of pain. Centralization of pain occurring at the initial evaluation is a reliable predictor of successful outcome[2]. This phenomenon is unique to the McKenzie treatment. With the use of the REPEX™, it is possible to achieve centralization in cases where patient generated exercises carried out over several days have failed to produce change.

A further advantage obtained from the use of REPEX™ is the ability to rapidly reduce derangement even when movement is significantly obstructed, such as occurs in lumbar Derangement Two (Acute kyphosis). Prior to the advent of REPEX™, curve reversal from kyphosis to lordosis in this acute disorder was achieved slowly over a period of time using careful positioning and mid-range movement as behavior of pain allowed. With the correct us of REPEX™, it is now possible to restore full movement within 20 to 30 minutes.

In the treatment of patients with the dysfunction syndrome, the fine control of REPEX™ and the unlimited number of delivery cycles provides a remodeling process unobtainable by patient self-generated exercises.

Important Note:

This manual explains the features and functions of the Hill REPEX table along with certain important safety precautions.

IT IS NOT INTENDED AS A FULL TREATMENT REFERENCE.

For authoritative clinical direction for using the REPEX table and the McKenzie Technique, please consult "The Lumbar Spine, Mechanical Diagnosis and Therapy" by R.A. McKenzie included with this manual (2nd Edition, Spinal Publications, New Zealand, 2003). Other references are also noted below. You may also contact the McKenzie Institute at www.mckenziemdt.org.

References

1. McKenzie, R.A.: The Lumbar Spine, Mechanical Diagnosis and Therapy, Second Edition, Spinal Publications, New Zealand, 2003
2. Donelson, R.; Murphy, K.,; Silva, G.: Centralization Phenomenon: Its usefulness in evaluating and treating referred pain. Spine 15:3, 1990.
3. Evans, P.: The Healing Process at Cellular Level. Physiotherapy 66:8, 1980
4. McIlwaine, W.A.: A Technique for Improving Results of Soft Tissue Repair in Low Back Patients Utilizing the LPM 100.

Product Features

1.1 Basic Table Components and Options

1. Touchscreen Display
2. Thoracic Section
3. Belt
4. Pelvic Section
5. Adjustable Foot Section
6. Protective Base Skirting
7. Power Button
8. Patient Emergency Stop Button
9. Adjustable Armrests
10. Face Cut-Out Section

1.2 Specifications

- Electric requirement 60 Hz, 110 v~, 3.5 A or 220-50 cycle, 3.0 A
- Weight capacity - 400 pounds
- Acrylic thermo-plastic base skirting
- Ultra-Cell® foam for comfort and shape retention
- Height - 24", 26" or 29 1/2"
- Width - 27"
- Shipping weight approximately 250-300 lbs.

1.3 Warning

Hill Laboratories Company requires that health professionals using REPEX™ equipment become familiar with the practice of Mechanical Diagnosis and Therapy as taught by the McKenzie Institute International. The use of REPEX™ equipment by untrained persons may result in injury. Hill Laboratories Company cannot be held responsible for injury caused by the unauthorized use of REPEX™. Qualified health professionals responsible for the supervision of treatment by REPEX™ may be held responsible for injury caused by its unauthorized or improper use.

Table Care

2.1 Cleaning your Table

Hill table upholstery may be cleaned with Hill Laboratories' Vinyl and Leather Cleaner or any household dishwashing liquid mixed with water. Hill also offers Protex™ Disinfectant Spray and wipes to protect against pathogens, such as MRSA, HIV, Staph and the H1N1 Swine Flu Virus. Many stubborn stains can be removed by applying 91% rubbing alcohol (isopropyl alcohol) to the stain and wiping with a dry, soft, lint-free cotton cloth, towel or soft bristle brush. Be sure to rinse thoroughly with water.

Caution: Some solvents are highly flammable; do not use near open flame or intense heat. Wear rubber gloves during all cleaning activities. When cleaning other parts of your table (besides upholstery) use only nonabrasive household detergents and water.

Cleaning the LCD Touchscreen

To clean your LCD Screen, DO NOT use common glass cleaners. Apply a light spray of distilled water or if necessary, a 50/50 mix of white vinegar and distilled water. Use a very soft cloth (cotton or micro-fiber) and apply it to the screen with gentle pressure. Do not press hard as this will damage the screen.

2.2 Caution and Symbol Explanation

Caution: Children should never be left alone in a room with the table but should always be accompanied by an adult.

Caution: Always unplug the table before performing any maintenance.

Caution: Check table once a year to make sure all internal and external bolts are secure.

Caution: The power cord should be located to avoid risk of tripping or having objects rolled over or placed on top of it. Damaged cords should be replaced with another of hospital grade.

Caution: Grounding reliability can only be achieved when connected to an equivalent receptacle marked hospital only or hospital grade.

***Symbols* - Each of the symbols below are used in your table labeling. An explanation of each is below.**

Attention Symbol
consult accompanying documents

Dangerous Voltage Symbol

Type BF Applied Part Symbol

Ground Symbol

Alternating Current Symbol

Don't Touch Symbol

Basic Table Operation

3.1 Positioning your patient

Have the patient lay prone on the table with their face comfortably inside the sliding face cut-out section. Adjust the adjustable foot section to suit the height of the patient by loosening the knob on the bottom side of the cushion (photo 2). Tighten to secure. Next, disengage the cushion lock pin by pulling it toward you and turning (see photo 3). This will allow the bottom section of the table to move freely during treatment. Secure the belt over the sacrum so that it is comfortable (photo 4).

photo 1

photo 2

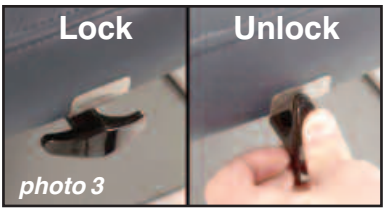


photo 3

photo 4

3.2 Turning the Table On/Display Indicators

Turning the Table ON

To begin using the Repex Table, simply press the Red Power Button located on the side of the base. The button will light when pressed. This will turn on the touchscreen. When the screen first appears, it will show a world map momentarily and then switch to the START Screen.

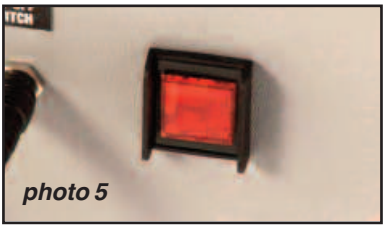


photo 5

Display Indicators

There are three light indicators at the top of the display box (photo 6, A).

photo 6

They are as follows:

PWR - The yellow PWR light indicates that the display has 24VDC power. If it fails to illuminate on power up, check the table's power cord to make sure it is plugged in securely.

CPU - The green CPU light indicates that the processor in the display is functioning. If this indicator fails to light or blinks, the display is in need of repair.

COM - The red COM light indicates that the display is communicating properly with the motor controller. If this light blinks or shows solid red, the screen is operating properly. If the red light does not come on, make sure that the communication cable is connected properly to the bottom of the display.

3.3 Initializing the Screen

With the table turned on, and the start screen showing, press the "Home" button on the display (photo 6, B). The table requires a "homing cycle" to ensure proper positional measurement. The table may move up and down several times to fine tune the home position. When the homing cycle is completed, the table will stop in the home position. Only after the table has completed the homing cycle will the "START" button appear (photo 6, C). The user must press the enter button to load the default parameters and begin using the table.

Entering Treatment Settings

4.1 Initial Settings

Once the START button is pushed, the treatment settings appears, loaded with the default settings.

4.2 Entering Settings

To change any setting, simply press the up or down key associated with that setting. To enter exact settings numerically, press any settings window for a keypad entry (shown right).

4.3 Settings Defined

SPEED - This refers to the speed of the table motor. It ranges from 1-10 in half step increments.
Maximum = 10, Minimum = 1 Default = 4.5

CYCLES - This refers to the number of full up and down cycles in treatment
Maximum = 1000, Minimum = 1, Default = 100

EXTENSION - Controls the treatment motion of each cushion above horizontal
Maximum = 24°, Minimum = 0, Default = 4 (Step = 1°)

HOLD UP - This controls how long the table will “hold” at the top end of the stroke.

FLEXION - Controls the treatment motion of both cushions below horizontal Maximum = 24°, Minimum = 0, Default = 4 (Step = 1°)

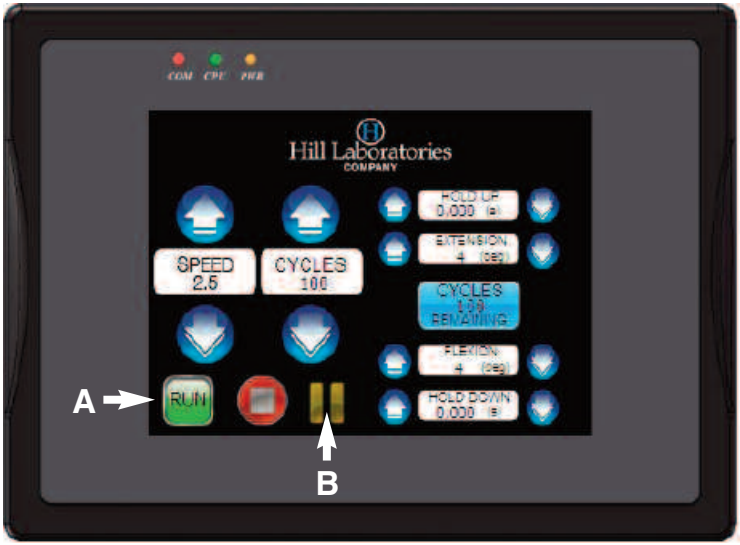
HOLD DOWN - This controls how long the table will “hold” at the bottom end of the stroke.

CYCLES REMAINING - Displays the number of remaining full cycles until the treatment has expired or is cancelled.

Starting a Treatment

5.1 Run Mode

Once all settings are entered, press the “RUN” button in the bottom left corner of the screen (see “A” below). When in Run Mode, the number in the cycles remaining readout will progressively go down with every completed cycle.



5.2 Pause Mode

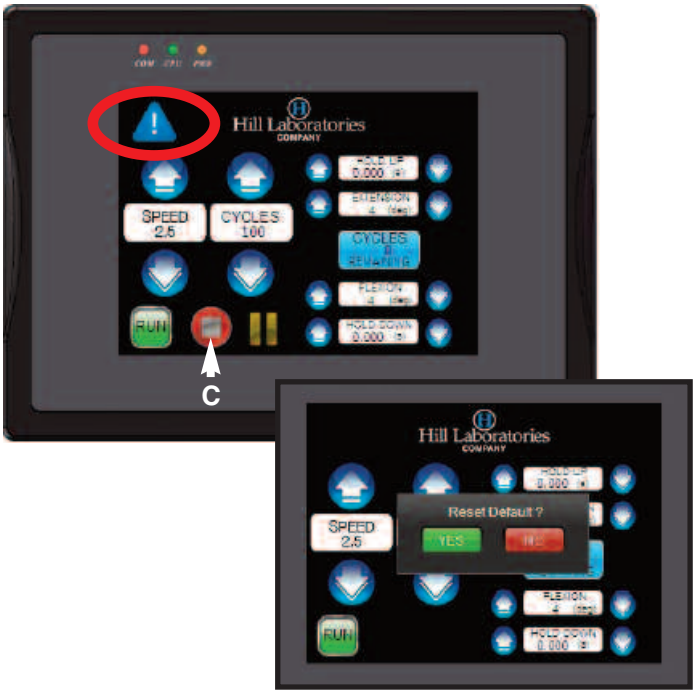
When in Run Mode the treatment can be suspended by hitting the Pause Button (see “B” above). When in Pause Mode, the Pause Button will blink and the table will come to a stop in the home position. The table will remain in Pause Mode until the Pause Button is pressed again, resuming the treatment.

5.3 Stop Mode/Emergency Stop

When in Run Mode the treatment can be cancelled by hitting the Stop Button (“C” below). The Stop Button can be pressed in Run Mode or Pause Mode. When in Stop Mode, A blue triangle with an exclamation point will appear and blink in the top left corner of the screen. The table will also return to the home position. To proceed, press the blue triangle. You will then be asked if you would like to Reset to the Default settings (see below). Press “NO” if you would like to resume treatment with your present settings. Press “YES” if you want to discard your present settings and return to default setting parameters.

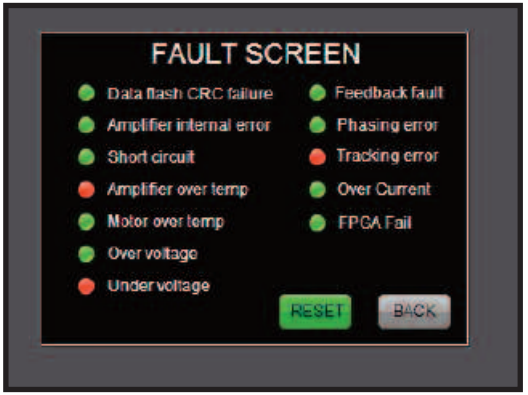
Emergency Stop

Stop Mode can also be activated directly by the patient when pressing the Emergency Stop Button—a hand-held control located on the side of the table base. The patient should hold the Emergency Stop Button at all times during treatment. When pushed, the screen will respond in the same manner as when the screen Stop Button is pressed. The procedure for restarting the treatment is also the same. (refer to Stop Mode above).



5.4 Fault Mode

The Fault Mode appears when the table has a problem. A red triangle with an exclamation point will appear and blink in the top right corner of the screen (see below). Pressing the triangle brings up the Fault Screen (also below). Problems are identified by a red light to the left of each description. Pressing the RESET Button resets the table parameters and turns all lights on the screen back to green. With RESET completed, the user should then hit the BACK Button which returns the display to the START Screen (refer to #2 above, “Initializing the Screen”).



Patient Selection

IMPORTANT NOTE: This manual explains the features and functions of the Hill REPEX table along with certain important safety precautions.

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6.1 Indications

All patients considered for treatment by REPEX™ must be evaluated according to the McKenzie assessment system of mechanical diagnosis and therapy prior to commencing REPEX™ treatment (see 'The Lumbar Spine, Mechanical Diagnosis and Therapy' by R.A. McKenzie, Second Edition, included with this manual).

6.2 Contra-Indications in Use of the Repex™

All patients considered for treatment by REPEX™ must undergo a complete assessment as described in 'The Lumbar Spine, Mechanical Diagnosis and Therapy' (included with this manual).

The following conditions are contra-indicated in treatment by REPEX™:

1. Malignancies, primary and secondary
2. Infections of all sorts.
3. Active inflammatory diseases: rheumatoid arthritis, ankylosing spondylitis.
4. Central nervous system involvement: cauda equina lesions, cord signs and symptoms, neurological diseases such as transverse myelitis.
5. Severe bone weakening diseases: osteoporosis, advanced osteomalacia, Paget's disease.
6. Fractures, dislocations and ligamentous ruptures.
7. Instability.
8. Last two months of pregnancy.
9. Vascular abnormalities: Vertebro Basilar artery involvement, visceral arterial disease, hemophilia.
10. Advanced diabetes- low tissue vitality.
11. Increasing and peripheralization signs and symptoms.
12. Grade three or four spondylolistheis.

Safety Instructions

7.1 General safety

- The REPEX™ treatment table must never be used by untrained persons.
- Keep clear of moving parts below platform level.
- Never reach under the platform when it is in motion.
- Always level the platform before allowing patients to mount or dismount.
- Never mount or dismount the machine while it is in motion.
- Ensure that patient's limbs stay above platform level.
- Never allow clothing to drape below platform level.

The Patient's Role

When applying patient self-treatment exercises, excessive and damaging movements are perceived immediately by the patient who automatically ceases exercise as pain increases. Avoidance of any significant injury is thus assured.

During the application of REPEX™ treatment, immediate deactivation of the equipment will avoid injury. **It is therefore vital that a full explanation regarding the procedures required to stop REPEX™ are conveyed to all patients.**
It is important to carefully monitor the patient's pain and/or neurological status before, during, and after treatment on the REPEX™. Regular questioning of the patient is necessary.

Information regarding pain centralization, peripheralization, or alterations in pain intensity should be obtained from the patient at intervals during the treatment process. The range of movement and number of repetitions must always be determined by frequently monitoring the behavior of pain.

The patient must always be instructed to deactivate the REPEX™ if peripheralization or progressively increasing symptoms develop. The patient should have access to an alarm bell to indicate undesirable reactions and/or termination of treatment.

It is essential to explain to all patients treated by REPEX™ that the self-treatment exercises perpetuate the benefits obtained from the equipment and, if practiced every two hours, will continue their improvement Operators Instructions.

If the pain is increasing

Under certain circumstances, pain may be reduced or abolished at the maximum of the extension cycle when the articulation is at its lowest point. The pain may increase when the patient moves into flexion when the articulation is at its maximum height. This is an indication that the flexion angle should be decreased and the extension angle increased until pain felt

at the height of the articulation ceases. A pillow under the chest may be required in a few cases. This will prevent any flexion occurring at the height of the ram excursion.

- Check to ensure the patient is relaxed. As the range of movement increases, it is important the patient relaxes so the movement is completely passive and is not resisted by patient tension.
- Check to determine if the symptoms are strain or pain.
- Check to determine if the pain is a new pain or is the original symptom.
- Check if range of movement setting is too high. If so, reduce angle.
- Check to determine if pain is in a different location. If centralized - proceed. If peripheralized, adjust hips or discontinue and reassess.
- If pain progressively increases despite a reduction in the range of applied movement setting, it will be necessary to reassess the condition to exclude the possibility that an anterior derangement or significant extension dysfunction is responsible for the increasing pain. Recheck present and previous history and retest using patient generated forces. Reassess the following day.
- If atypical responses are obtained from mechanical assessment and REPEX™, refer for further investigation.

Repex™

Manufactured by Hill Laboratories Company

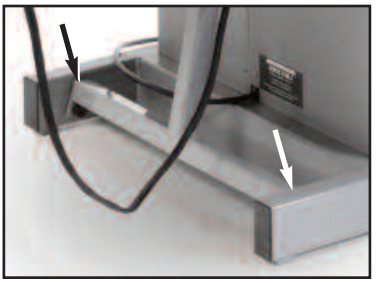
Maintenance

Regular Maintenance

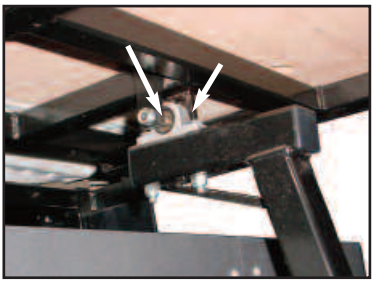
Your Repex table is practically maintenance free. There are, however, a few places where periodic oiling is needed. Please see below.

Oiling your Repex

About every 6 months, lightly spray a few drops of household oil (WD40™-type) on the hinge points of the outside angle support brackets, both top and bottom, as shown by the arrows in the two photos below.



Lifting Arm shown at base
(one at each end of the table)



Lifting Arm shown under table top
(one at each end of the table)

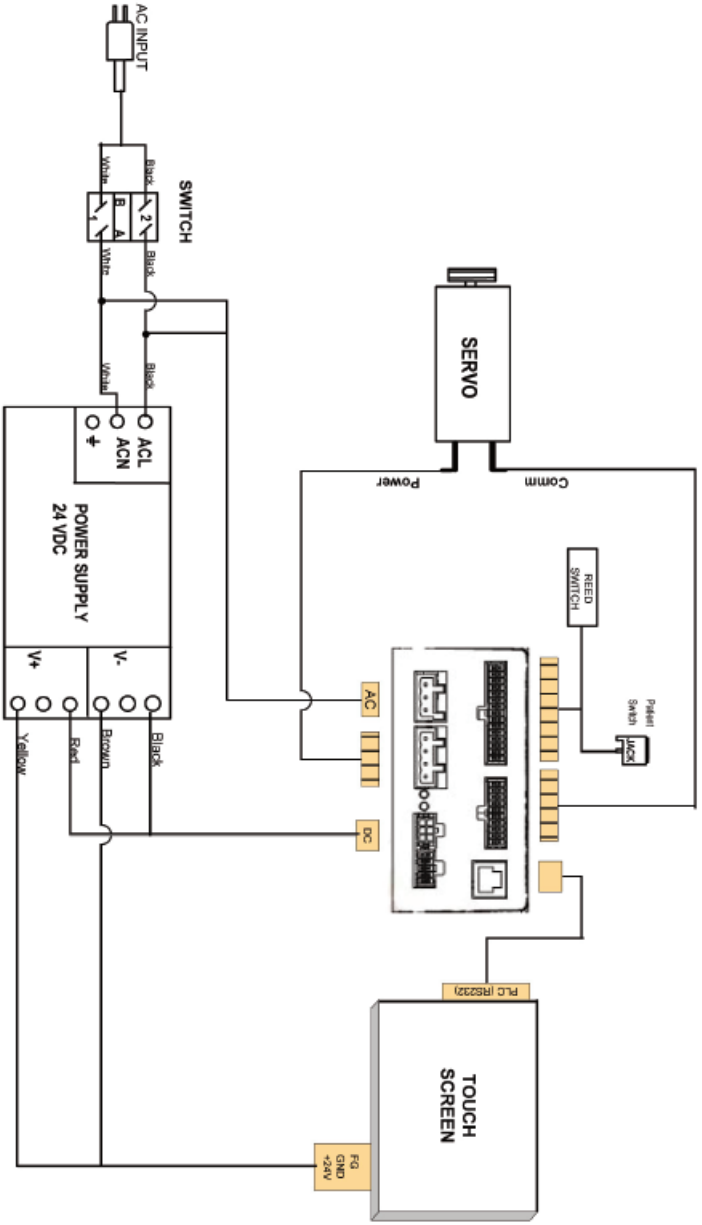
H Support

Additional service needed? Contact your local dealer or reach us directly:

Phone: 1-877-445-5020
Fax: 610-647-6297
Email: Support@HillLabs.com

Technicians are available 9 am - 4 pm E.S.T., Monday - Friday.

Wiring Diagram - Repex



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