

2025

Semi-Electric Scissor Lift

US-TSE15



TEXLIFT
2025

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1. Overview

The **US-TSE15 Semi-Electric Scissor Lift** is a **high-stability, versatile lifting device** designed by integrating the best features of similar products both domestically and internationally. It is primarily used for **indoor operations**, offering a **compact size, excellent flexibility, and easy mobility**, making it **ideal for a wide range of applications**.

2. Product Structure

The **US-TSE15 Semi-Electric Scissor Lift** consists of five main components:

1. **Working platform**
2. **Fork arm**
3. **Lifting cylinder**
4. **Hydraulic control system**
5. **Base frame**

(See Figure 1 for reference.)

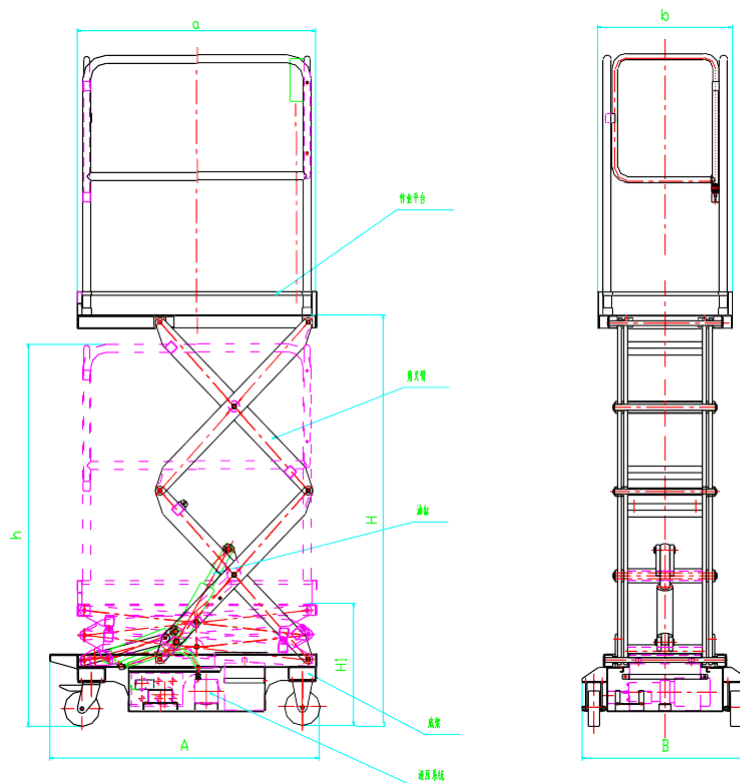


Fig. 1: Semi-Electric Scissor lift structure

3. Technical parameters

No	Item	US-TSE15
1	Max. work height	264 Inches
2	Max. platform height	185 Inches
3	Min. platform height	35 Inches
4	Load capacity	440 LBS
5	Min. turning radius	47 Inches
6	Overall length	50 Inches
7	Overall width	30 Inches
8	Overall height	74 Inches
9	Platform size	45x24 Inches
10	Ground clearance	2.36 Inches
11	Wheel diameter size	5.91 Inches
12	Weight	1060 LBS
13	Motor power	12V/0.8kw
14	Battery Capacity	12V/105Ah
15	Battery charger	12V/15A

Table 1

4. Working principle

The **motor-driven pump** generates **high-pressure oil**, which flows into the **valve block P cavity**. Through a **one-way valve (1)**, oil is directed into the **A cavity** and then into the **lift cylinder**, causing the **operating platform to rise slowly**.

- The **relief valve (2)** is preset to a specific pressure based on the load, preventing **overloading or excessive pressure**.

When **lowering the platform**, the **solenoid valve (4)** opens. Under the **weight of the platform and its load**, hydraulic oil flows from the **lifting cylinder** back into the **A cavity** of the valve chamber.

- Because **one-way valve (1) is closed in reverse flow**, hydraulic oil can only pass through:
 - The **opened solenoid valve (4)**
 - The **adjustable throttle valve (3)**
 - The **O cavity** into the fuel tank

This process ensures the **platform descends slowly and smoothly**.

Since the **valve block features a pressure balance structure**, the **electromagnetic control** of the closed system ensures **stable lifting and lowering speeds, regardless of load fluctuations**.

(See Figure 2 for reference.)

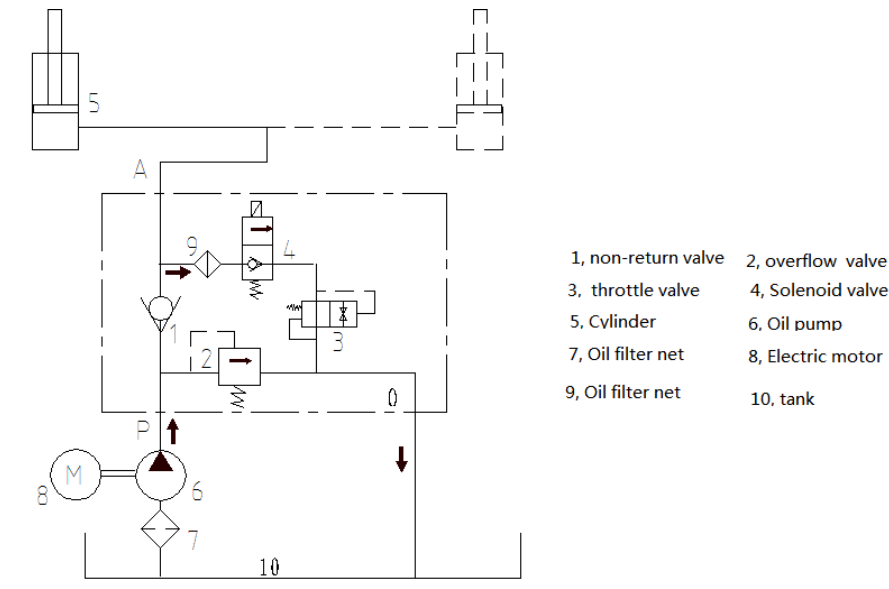


Fig. 2: schematic diagram of working principle of hydraulic system

5. Operation Instructions

1. Operating the Lift Platform

1. Power Input & Activation

- Turn on the **control key switch** on the switch box.
- Press the **green button** on the control box to raise the working platform.
- Press the **red button** to lower the platform.
- When the lift is **not in use for an extended period**, turn off the **key switch** on the control box.
- **Important: Lifting operations are strictly prohibited** when the platform is turned off.

2. Safe Lifting Operations

- **Do not apply horizontal force** on the platform using any objects while lifting or lowering.

3. Emergency Lowering System

- The **oil pump is equipped with an emergency oil drain bolt**.
- In case of lift failure or sudden power loss, **loosening the bolt** will allow the platform to **descend slowly and safely**.

6. Equipment Maintenance & Service

1. Hydraulic Oil Maintenance

- **Hydraulic oil should be replaced every 6 months** or as needed based on usage and contamination levels.
- When replacing the oil, **thoroughly clean the inner walls of the oil tank** to remove debris such as **metal particles, fibers, and other contaminants**.

2. Hydraulic Oil Quality Standards

- Prevent **hydraulic oil contamination**—it must be **free from water, acid, and alkali impurities**.
- **Do not apply anti-rust oil** inside the oil tank.

3. Solenoid Valve Maintenance

- If a **foreign object clogs the solenoid valve**, causing hydraulic system failure:
 - Remove the **M14 × 1.5 screw** (with 10 drilled holes).
 - Unscrew the **copper valve sleeve**, then carefully pull out the **spool**.
 - **Soak the spool in kerosene**, rotating it gently to remove debris.
 - Inspect for **damage to the valve sleeve and spool** before reassembling.
 - Ensure **precise reinstallation** for smooth operation.

4. Checking for Automatic Lowering Issues

- If the platform **descends on its own**, inspect:
 - **Check valve seals** for leaks.
 - **Emergency release valve** for looseness.
 - Hydraulic oil for **soft fibers or debris clogging the one-way valve**.

5. Regular Safety Inspections

- **Check the upper limit switch** periodically to ensure it functions properly.

6. Professional Repairs Only

- **Only qualified professionals** should service or disassemble hydraulic components.
- If uncertain, **contact the manufacturer for repairs**.

7. Lubrication

- **Regularly lubricate the hinge points** of the support arms.
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Safety Operating Procedures

i Important Safety Rules

- a) **No lateral force:** Do not **push, pull, or exert lateral thrust** on the platform while it is raised.
- b) **Do not modify lift speed:** Adjusting **lifting or lowering speeds** is **prohibited**.
- c) **Stay within rated capacity:** Never exceed the **maximum weight limit** of the platform.
- d) **Do not enter the platform during operation:** **Standing under or stepping onto the platform** while it is moving is **strictly prohibited**.
- e) **Maintenance safety:**

- During maintenance, **secure the platform with safety support props** before working **underneath it**.
- **No hydraulic pressure adjustments:**
- It is **forbidden** to **manipulate hydraulic pressure settings** to exceed the lift's weight limit.
- **Do not remove or modify parts:**
- **Unauthorized removal or modification of components** is strictly **prohibited**.

8. Troubleshooting Guide

A **detailed troubleshooting table** makes it easier for users to identify issues and solutions.

Issue	Possible Causes	Recommended Solutions
Hydraulic motor does not work	- Power not on - Switch normally closed contact off - Loose or damaged electrical connection	- Check electrical connections one by one - Consult an electrician if necessary
Oil pump struggles to operate	- Overloading - Misalignment of oil pump and motor shaft - Pump blockage - Valve block issue - Contaminated hydraulic oil	- Ensure the load is within the rated limit - Adjust coaxial alignment - If motor shaft cannot turn by hand, replace oil pump - Clean or replace the valve block - Replace hydraulic oil
Platform does not lift or struggles to lift	- Pressure setting too low - Air entering hydraulic system due to pipe leakage - Low hydraulic oil level	- Adjust relief valve settings - Tighten joints or replace sealing rings - Add hydraulic oil to the proper level
Platform does not descend	- Solenoid valve blockage	- Clean or replace solenoid valve block

9. Daily and Periodic Maintenance Checklist

A **checklist format** makes it easier for operators to ensure regular inspections.

Daily Inspection (Before Operation)

- ✓ Check battery charge level.
- ✓ Inspect hydraulic system for leaks.
- ✓ Ensure emergency stop functions properly.
- ✓ Verify platform and guardrails are secure.
- ✓ Check wheels and tires for wear or damage.
- ✓ Test controls, including lifting, lowering, and movement.

Weekly Inspection

- ✓ Check all bolts and fasteners for looseness.
- ✓ Test tilt sensor and emergency lowering system.

F Monthly Inspection

- ✓ Inspect electrical connections for wear or damage.
 - ✓ Lubricate all moving joints and hinge points.
 - ✓ Check hydraulic oil levels and top off if needed.
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10. Storage and Transportation Guidelines

This section ensures the lift is properly stored and transported.

- **Storage:**
 - Store the lift **in a dry, covered area**, away from extreme temperatures.
 - Lower the platform completely before storage.
 - Disconnect the battery if storing for an extended period.
 - **Transportation:**
 - Secure the platform with **straps and wheel locks** during transport.
 - **Do not transport the lift with the platform raised.**
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11. Operator Responsibilities & Training Requirements

Adding **operator responsibilities** ensures proper usage and safety compliance.

- Only **trained personnel** should operate the lift.
- Operators must **report any malfunctions immediately**.
- Never attempt **repairs without proper training**.
- Always **follow the maintenance schedule** to ensure longevity.