#### Zieman 2725 and 2735 Owner's Manual

(for machine equipped with Dexter 22,500 DXT 211161 axle + Sealco / WABCO Air Brake System)

#### **Table of Contents**

- 1. Introduction
- 2. Machine / Chassis Data
- 3. Axle & Suspension Dexter 22,500 DXT 211161
- 4. Air Brake System Sealco / WABCO ECU
- 5. Operating Instructions
- 6. Maintenance Schedule
- 7. Troubleshooting
- 8. Safety Information

#### 1. Introduction

This manual provides you with all necessary information to safely operate, maintain, and troubleshoot your Zieman 2725 with Tandem Dexter 22,500 DXT 211161 axles and Zieman 2735 with the Triple Dexter 22,500 DXT 211161 axle and the Sealco/WABCO air-brake system with ECU. Read this manual thoroughly before using the machine. Keep it with the equipment and refer to it when needed.

#### 2. Machine / Chassis Data

Parameter	Specification
Manufacturer	Zieman
Model	2725, 2735

**Parameter** 

## **Specification**

Gross Vehicle Weight Rating (GVWR) 62,000 lbs (2735) 44,000 lbs (2725)

Payload Capacity 50,000 lbs (2735) 35,120 lbs (2725)

Tire Size / Type 215/75/R17.5 (H) TUBELESS RADIALS

Brake Type Air-brakes, anti-lock capable with WABCO ECU

Axle Dexter 22,500 DXT 211161

# 3. Axle & Suspension — Triple Dexter 22,500 DXT 211161

Axle rating: 22,500 lbs

Model: DXT 211161

- Configuration: Triple axle setup (three axles supporting rear load)
- **Suspension**: Hutch h-9700 tandem 2-leaf slipper with load equalizer. 44,800lb rating
- **Lubrication points**: Bearings, spindle, U-bolts, etc. Use grease of type [insert recommended grease, e.g. lithium complex NLGI 2]
  - O DEXTER OWNERS INFORMATION:

https://www.dexterpartsonline.com/files/2038083/uploaded/22.5-27.5K Complete Catalog 10-11.pdf

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# 4. Air Brake System — Sealco / WABCO ECU

This section covers the air-brake system components, operation, and maintenance, based on Sealco / WABCO documentation.

### **4.1 System Components**

- Brake chambers (service and emergency)
- WABCO ABS / ECU module (electronic control unit)

- Sealco ECU/valve assembly (likely 2S1M, 2-sensor 1-modulator configuration) —
   e.g. the Sealco part #21110 [from listings] which includes the WABCO ECU valve,
   sensor extension cables, etc. dondens.com
- Wheel speed sensors (one per axle/wheel where applicable)
- Air supply tanks: primary, secondary, wet-tank (if equipped)
- Air compressor(s) with governor
- Air dryer (if equipped)
- Relay valves, quick release valves, emergency brakes / parking brakes

#### 4.2 ECU / ABS Valve Information

- The ECU/valve assembly monitors wheel speed sensors and modulates brake air pressure to prevent wheel lockup under braking (anti-lock) features.
- The Sealco/WABCO 2S1M version includes two wheel speed sensors and one modulator. dondens.com
- Power supply and cable connections must be clean, corrosion-free, properly sealed.
- The ECU includes diagnostics / fault codes; usually a blinking indicator LED or dash indicator, per WABCO standards.

### 4.3 Operating Principles

- When the brake control is applied, air from the supply flows through the service chambers.
- During a braking event, if the ECU detects impending wheel lock (through sensors),
  it modulates air pressure to maintain control.
- Parking/emergency brakes are spring-applied and released by air pressure (or maintained by mechanical springs if air lost).

## 4.4 Maintenance

Task	Interval / Condition Procedure	
Inspect air lines,	Every 100 hours /	Look for leaks, damage, chafing; replace or
connections, hoses	monthly	repair as needed

#### Task Interval / Condition Procedure

Drain moisture from air tanks	Daily / before use	Open drain cocks to allow water to escape
Check air compressor / dryer	As per OEM spec	Replace desiccant cartridges, check purge operation
Inspect wheel speed sensors and tone rings	Every 500 hours or sooner if ABS warning	Clean sensors, inspect for damage, check air gap to tone ring
Verify ECU diagnosis & clear faults	During regular service	Use WABCO toolbox or Sealco-compatible diagnostics to read fault codes; rectify; clear codes

# 4.5 Specifications

- Typical system air pressure: **100 120 psi** (for supply)
- Minimum pressure for full braking function: [insert spec] psi
- Compressor cut-in / cut-out pressures: [insert spec] psi
- Sensor resistance: [typical values] ohms (often ~900-1400 $\Omega$  per WABCO manuals) Reddit+1
- Electrical supply voltage: 12 V (or 24 V if that's what your chassis uses); confirm with your unit's tag.

### 5. Operating Instructions

#### 1. Pre-start Inspection

- Check tires, axle components, wheels.
- Check air supply pressure is adequate.
- Inspect all brakes for visible issues.
- o Check for air leaks (listen, use soap where needed).

# 2. Starting Machine

o Start engine, allow air compressor to build up to minimum pressure.

o Drain tanks, check governor operation.

# 3. Normal Driving / Loading

- o Drive smoothly, avoid sudden braking where possible.
- Use braking distances suitable for load.

# 4. Braking / Emergency

- o When braking, brake pedal applies air to service brakes.
- o In emergencies, the ECU may modulate to prevent wheel lock.
- o Parking brake use when parked; ensure it's holding load.

#### 5. **Shutdown**

- o Park on level ground, chock wheels if required.
- Apply parking/emergency brakes.
- o Shut off engine, bleed off residual pressure if needed per local regulations.

#### 6. Maintenance Schedule

Interval	Task
Daily / Before Use	Drain moisture from tanks; check air pressure; visual inspection of hoses & connections; check warning lights
Weekly	Check tightness of fasteners in axle / suspension; inspect sensor wiring; grease all lubrication points
Monthly	Full inspection of brake chambers and slack adjusters; check ECU error codes; inspect air dryer / purge valve
Every 500 hours / annually	Major service: replace air dryer elements; calibrate ABS sensors; overhaul brakes if required; inspect and service axles including bearings
Every 2-3 years	Replace hoses subject to degradation; check and replace seals; verify structural integrity of axle & frame connections

### 7. Troubleshooting

Symptom	Possible Cause	Corrective Action
Air pressure not building up	Compressor issue; governor malfunction; large leak in system	Check compressor belts, valves; locate leaks; repair or replace components
ABS warning light stays on	Faulty sensor; wiring damage; tone ring missing or damaged; ECU fault	Read fault codes via diagnostic tool; inspect sensors and wiring; repair or replace
Spongy brake pedal / slow apply	Air in lines; weak compressor; moisture in tanks or lines	Drain tanks; bleed system; inspect compressor; replace dryer cartridge
Brakes lock up / skid	ABS not functioning; faulty sensor or ECU; tone ring incorrect	Diagnose ABS system; repair or replace faulty parts
Parking brake fails to hold	Loss of air in parking brake chamber; springs or release valves faulty	Inspect chamber; ensure air supply; test spring brake / release valve

# 8. Safety Information

- Always **chock wheels** before working under machine.
- Never work on air-brake system while under pressure. Ensure system is fully depressed / bled.
- Wear personal protective equipment: eye protection, gloves, etc.
- Avoid contact with moving parts; hot surfaces around brakes and axles.
- Follow all local laws/regulations regarding braking systems, inspections, and certifications.

# 9. Parts & Diagrams

• Use OEM-parts for all brake chambers, sensors, ECU, axles.

- Keep serial numbers/tag numbers of your axles (e.g. 211161) and of the ECU / ABS module for ordering the correct replacements.
- Common replacement parts: brake shoes/pads, chambers, sensor, tone ring, hoses, gaskets/seals, ECU/valve assembly.

## 10. Warranty & Support

- Keep proof of purchase of machine and of individual major components (axles, ECU, etc.)
- Warranty coverage may be voided by improper operation, modifications, lack of maintenance, or use of non-authorized parts.
- For support on the Sealco / WABCO air-brake system, contact Sealco or WABCO with the ECU part number. The part # Sealco 21110 is (or was) listed as a 2S1M ECU/valve kit. dondens.com
- Always reference serial numbers when requesting parts or service.

# Updated Sections for Owner's Manual:

# 3.1 Suspension — Hutchens H-9700 Slipper Spring System

The **Hutch H-9700** is a heavy-duty slipper spring suspension commonly used with 22,500 lb axles in triple-axle trailers. It is designed for high-load applications and rough-terrain durability.

### **Key Components:**

- Slipper springs (single or multi-leaf)
- Equalizer beam with wear pads
- Hangers and torque arms
- Spring eye bushings
- Axle seats, U-bolts

#### **Inspection Points:**

- Look for cracked, broken, or sagging springs
- Check for excessive wear in slipper ends and equalizer pads
- Verify torque arm condition and bushing integrity
- Look for misalignment or loose U-bolts

# % 6. Maintenance Schedule — Addendum

Component	Interval	Action
Hutch H-9700 Suspension	500 hours / Quarterly	Inspect slipper springs for cracking, wear at ends, and leaf separation
	1000 hours / Annually	Torque U-bolts to spec: ~450–500 ft-lb (check OEM value); inspect equalizer bushings
		https://www.hutchensindustries.com/wp- content/uploads/dae-uploads/HUTC-9600-9700- 7-2021.pdf
	As needed	Replace worn bushings or spring packs; grease equalizer pivot points (if greasable)
Apitong Wood Deck	Monthly	Sweep and clean deck with mild detergent to remove grime, chemicals, or debris
	Every 6–12 months	Apply oil-based sealer (e.g. Penofin or ExoShield) to preserve color and prevent surface cracking
	Annually	Inspect for cracked or split planks; replace damaged boards with kiln-dried Apitong replacement
	After Heavy Use / Rain	Allow deck to dry completely; avoid stacking wet material on deck to prevent rot and mold

#### 2 11. Decking — Apitong Wood Care

**Apitong (Keruing)** is a Southeast Asian hardwood used for flatbed and heavy-duty trailer decks. It is naturally durable and resistant to wear but needs proper care to ensure longevity.

#### 11.1 Characteristics

- High density (~50+ lbs/cu ft), excellent for resisting abrasion
- Naturally oily offers some resistance to insects and water
- Tends to silver over time without treatment
- Kiln-dried Apitong is preferred for repair boards (less prone to warping)

## 11.2 Cleaning Instructions

- Clean monthly with a broom and hose or pressure washer at <1500 psi</li>
- For tough stains (oil, sap, mud), use mild wood-safe detergent
- Avoid bleach or acid-based cleaners that can damage fibers

## 11.3 Sealing / Oiling

- Every 6–12 months, apply a penetrating oil sealer (e.g. Penofin Marine, ExoShield)
- Use a clean brush or sprayer
- Apply in thin coats, wipe off excess
- Let dry fully before use (24–48 hrs)

**Do not** use polyurethane or film-forming sealants — they can trap moisture and cause rot from within.

# 11.4 Deck Repair Guidelines

- Inspect annually for:
  - Cracks or splits
  - o Rot near bolt holes or tie-down points
  - Raised edges (trip hazards)
- Replace damaged boards with:

- o Kiln-dried Apitong
- Same thickness/width to maintain structural integrity
- Use stainless or galvanized fasteners to avoid corrosion staining

# ✓ Updated Sections for Owner's Manual:

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Component	Interval	Action
SAF-Holland Landing Gear	Every 6 months or 500 hours	Inspect for damage or loose hardware; clean and lubricate gears and cross shaft
	Annually	Remove old grease and re-pack gearbox; inspect legs for water intrusion or corrosion
	Before each trip	Fully retract legs; check footpads for wear/damage; ensure drop legs function smoothly
215/75R17.5 Westlake Tires	Daily / Before Travel	Inspect for proper inflation (95–125 psi, check sidewall); look for damage, bulges, or embedded objects
	Monthly	Check tread depth (>4/32" front, >2/32" rear) and inspect valve stems
	Every 6 months / 10,000 mi	Rotate tires for even wear; balance if needed; torque lug nuts to spec (≈450–500 ft-lb)

# 12. Component Maintenance — Landing Gear & Tires

12.1 SAF-Holland Landing Gear

**Common models**: SAF-Holland Atlas series, Holland Mark V, etc. (Confirm actual model from data plate on gear leg for exact parts & capacity.)

# 12.1.1 Operation

- Two-speed manual gearbox (hi/lo)
- Cross shaft links driver-side crank to both legs
- Drop-leg (inner leg) deploys first for faster contact
- Gearbox shifts for high-torque lifting of loaded trailer

#### 12.1.2 Maintenance

Task	Frequency	Notes
Lubricate gear box	Every 6 months	Use NLGI #2 grease through zerk or gearbox port
Clean and inspect legs	Every 6 months	Remove dirt, ice, buildup; paint touch-up as needed
Inspect cross shaft and bushings	Every 6 months	Look for wear or binding; replace bushings if loose
Inspect foot pads	Before trips	Ensure no cracks or bending; replace if damaged
Gearbox rebuild	Every 2–3 years	If noisy, binding, or underperforming—service with OEM kit

Never lift a loaded trailer by cranking fast gear. Always use low gear to prevent damage.

#### **12.1.3 Common Grease Points**

- Gearbox (internal)
- Crank handle pivot
- Cross shaft bushings (if applicable)
- Leg screw jack (grease inside leg housing if accessible)

### 2 12.2 215/75R17.5 Westlake Tires (Trailer)

Typical Rating: Load Range H (16-ply), 4805–6005 lbs per tire depending on inflation.

#### 12.2.1 Specifications

Parameter	Value
Tire Size	215/75R17.5
Load Range	H (16-ply)
Max Load	~4,805–6,005 lbs @ 100–125 psi
Speed Rating	M (81 mph typical)
Inflation Pressure	95–125 psi (check sidewall)
Tread Depth (new)	~15/32"
Min Legal Depth	4/32" (steer), 2/32" (trailer)

#### 12.2.2 Inspection Checklist

#### Daily:

- o Inspect for visible damage, bulges, or tread separation
- Check pressure (use calibrated gauge underinflation = heat & failure)
- o Look for uneven wear = alignment or suspension issue

#### Monthly:

- o Inspect valve stems & caps
- Rotate tires for even wear (especially front-to-rear)
- Look for cupping, shoulder wear

#### Semi-Annual:

- o Torque check on lug nuts: **450–500 ft-lb** (verify per wheel type)
- o Check inside sidewalls (especially duals) for rubbing or impact damage
- o Remove trapped debris between duals if equipped

# 12.2.3 Tire Care Tips

- Use **metal valve stems** with high-pressure-rated cores
- Do not run tires with less than 80% of rated pressure internal damage may already be done
- Replace tires after **5–6 years** even if tread looks good (check DOT date code)
- Always match load range and speed rating when replacing
- Section 13: Hydraulic System Premium Supply 3x16 Cylinder
- ✓ Updated Sections for Owner's Manual

# **%** 6. Maintenance Schedule — Addendum #3

Component	Interval	Action
Premium Supply 3x16 Hydraulic Cylinder	Daily / Before Use	Inspect rod for damage or leakage; verify full extension and retraction
	Monthly	Check hydraulic fluid level in reservoir; inspect hoses and fittings for leaks or damage
	Every 6 months / 500 hours	Inspect cylinder mounting pins and bushings; lubricate pivot points with grease
	Annually	Flush hydraulic system fluid (if contaminated or discolored); inspect seals and replace if leaking or worn



# 13. Hydraulic System — Premium Supply 3x16 Cylinder by Dexter

### 13.1 Cylinder Overview

- Manufacturer: Premium Supply (subsidiary of Dexter)
- **Model**: 3" bore x 16" stroke hydraulic cylinder

• Common use: Dump trailers, tilt beds, hoists

• Mounting: Clevis or pin-style ends

Material: Welded steel body, chrome-plated rod

# 13.2 Specifications

Parameter	Value
Bore	3"
Stroke	16"
Rod Diameter	1.5" (typical)
Max Working Pressure	e 3,000 PSI
Port Size	1/4" or 3/8" NPT (varies)
Туре	Double-acting (common), may be single-acting
Mounting	Cross-tube or clevis

#### 13.3 Maintenance Procedures

# ✓ Daily / Before Use

- Inspect for **leaking seals** at rod or ports
- Check rod for **scoring**, **pitting**, **or rust**
- Extend/retract cylinder ensure smooth motion without sticking
- Listen for abnormal noises (cavitation, binding)

# **Monthly**

- Check hydraulic fluid in tank/reservoir:
  - o Low fluid may indicate a leak
  - o Use AW32 or AW46 hydraulic oil unless otherwise specified
- Inspect hoses and fittings:

- o Tighten or replace as needed
- o Check for chafing or cracking

# **Every 6 Months**

- Inspect mounting bolts, pins, and bushings:
  - o Ensure all hardware is secure and not worn
  - Grease pivot points using NLGI #2 grease
- Check cylinder alignment:
  - Misalignment can cause premature seal failure and rod damage

# Annually or 1,000 Hours

- Flush & replace hydraulic fluid (if discolored or contaminated)
- Inspect internal seals if cylinder is slow, noisy, or leaking under pressure
- Replace rod seals and wipers if leakage exceeds ~2–3 drops per cycle

# 13.4 Troubleshooting

Issue	Cause	Solution
Cylinder moves slowly	Low fluid level; clogged filter	Check reservoir and filter; top off and clean
Rod is scored or pitted	Contamination or corrosion	Replace or repair cylinder
Jerky movement	Air in lines; bent rod	Bleed system; inspect and replace rod
Leaking at ports	Loose fitting or cracked port	Retighten or replace fitting
Cylinder won't hold load	Bypassing internal seals	Rebuild cylinder with seal kit

### 13.5 Storage & Offseason Tips

- Fully retract cylinder when not in use to protect rod from corrosion
- Apply light oil to exposed rod if stored outdoors
- Cap ports when disconnected from system to prevent contamination
- Store in clean, dry location