Genie Industries

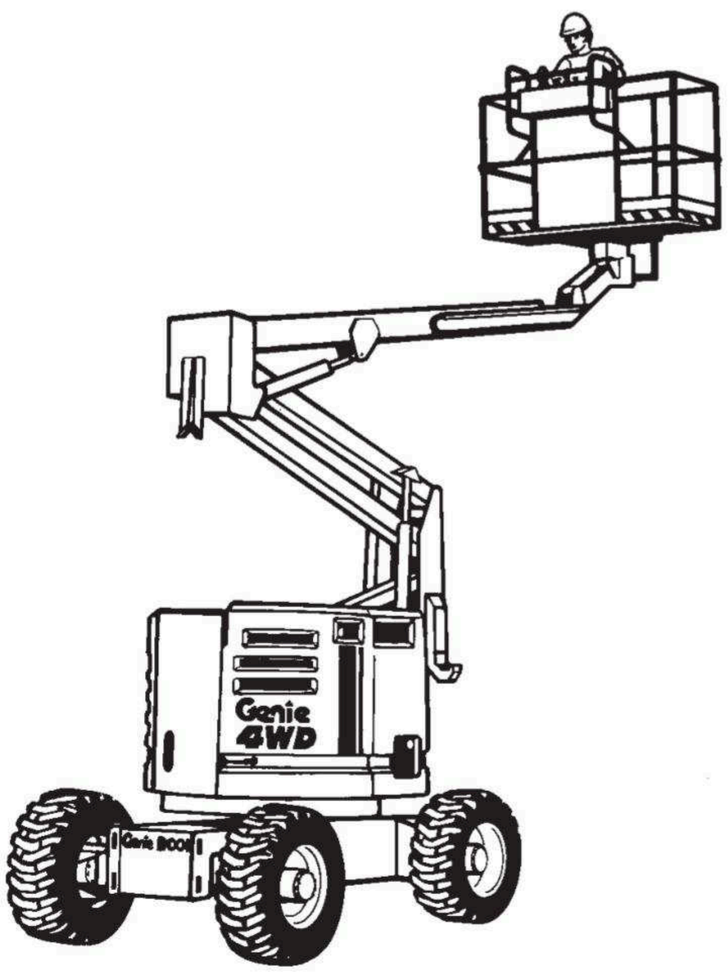
Technical Publications

Genie®

A TEREX COMPANY

Genie® Z-45/22

Service Manual



First Edition
Part No. 29487

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SPECIFICATIONS

Ford Engine LSG-423

Displacement	140 cu in / 2.3 liters
Number of cylinders	4
Bore and stroke	3.780 x 3.126 inches 96 x 79.4mm
Horsepower	63 @4000 rpm
Firing order	1 - 3 - 4 - 2
High engine speed	2150 rpm
Low engine speed	1200 rpm
Governing	Precision electronic
Compression pressure	psi of lowest cylinder must be at least 75% of highest cylinder
Valve clearances	
Intake	0.0010 - 0.0027 inches 0.025 - 0.068mm
Exhaust	0.0015 - 0.0032 inches 0.038 - 0.081mm
Lubrication System	
Oil pressure (operating temp. @ 2150 rpm)	40 - 60 psi 275.8 - 413.7kPa
Oil capacity (including filter)	5 quarts / 4.71 liters
Oil viscosity requirements	
Below 60°F / 15.5°C	5W - 30
-10 to 90°F / -23 to 32°C	10W - 30
above -10°F / -23°C	10W - 40 or 10W - 50
above 25°F / -4°C	20W - 40 or 20W - 50
Use oils meeting API classification SF (labeled SF/CC or SF/CD) as they offer improved wear protection.	

Starter motor	
Normal engine cranking speed	110 rpm
Current draw, normal load	150A
Current draw, maximum load	460A
Current draw, no load	70A
Maximum circuit voltage drop (normal temp)	0.5V DC
Brush length, new	0.50 inches / 12.7mm
Brush length, wear limit	0.25 inches / 6.35mm
Brush spring tension	40 ounces
Bolt torque through brush	55 - 75 inch-pounds 98 - 134gm-cm
Brush mounting bolt torque	15 - 20 foot-pounds 2.1 - 2.7kg-m
Maximum commutator runout	0.005 inches / 0.127mm
Battery	
Type	12V, Group 24
Ampere hour	75A
Cold Cranking Ampere	875A
Reserve capacity @ 25A rate	125 minutes
Fuel Pump	
Static pressure	5.0 - 7.0 psi
Minimum volume flow	1 pint / 473cc in 25 seconds

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Schematics

Observe and Obey:

- ☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions printed in the *Genie Z-45/22 Operating Instruction Manual*.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.

About This Section

There are two groups of schematics in this section. An illustration legend precedes each group of drawings.

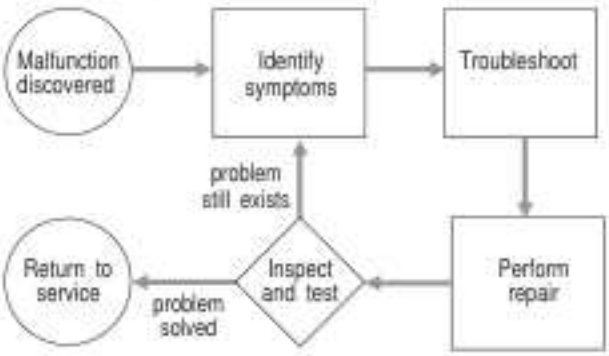
Electrical Schematics

⚠WARNING Electrocution hazard. Contact with hot or live circuits may result in death or serious injury. Remove all rings, watches and other jewelry.

Hydraulic Schematics

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can perforate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

General Repair Process



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RELAY PANEL

9-2
Power Relay

⚠WARNING Electrocution hazard. Contact with hot or live circuits may result in death or serious injury. Remove all rings, watches and other jewelry.

How to Test the Power Relay

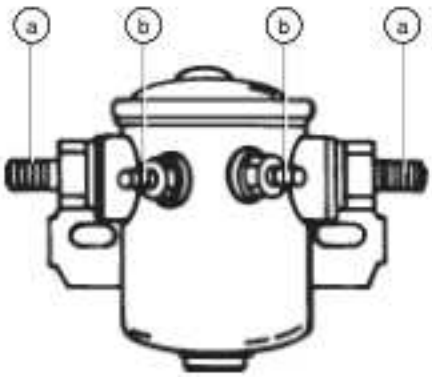
⚠WARNING Electrocution hazard. Disconnect the ground cable from the battery before performing this procedure.

1 Connect the leads from an ohmmeter to each terminal combination and check for continuity.

Test	Desired result
2 small posts	13 to 17Ω
2 large posts	no continuity (infinite Ω)
Any small post to any large post	no continuity (infinite Ω)

2 Connect 12V DC to one of the small posts and ground to the other small post, then test the following terminal combination.

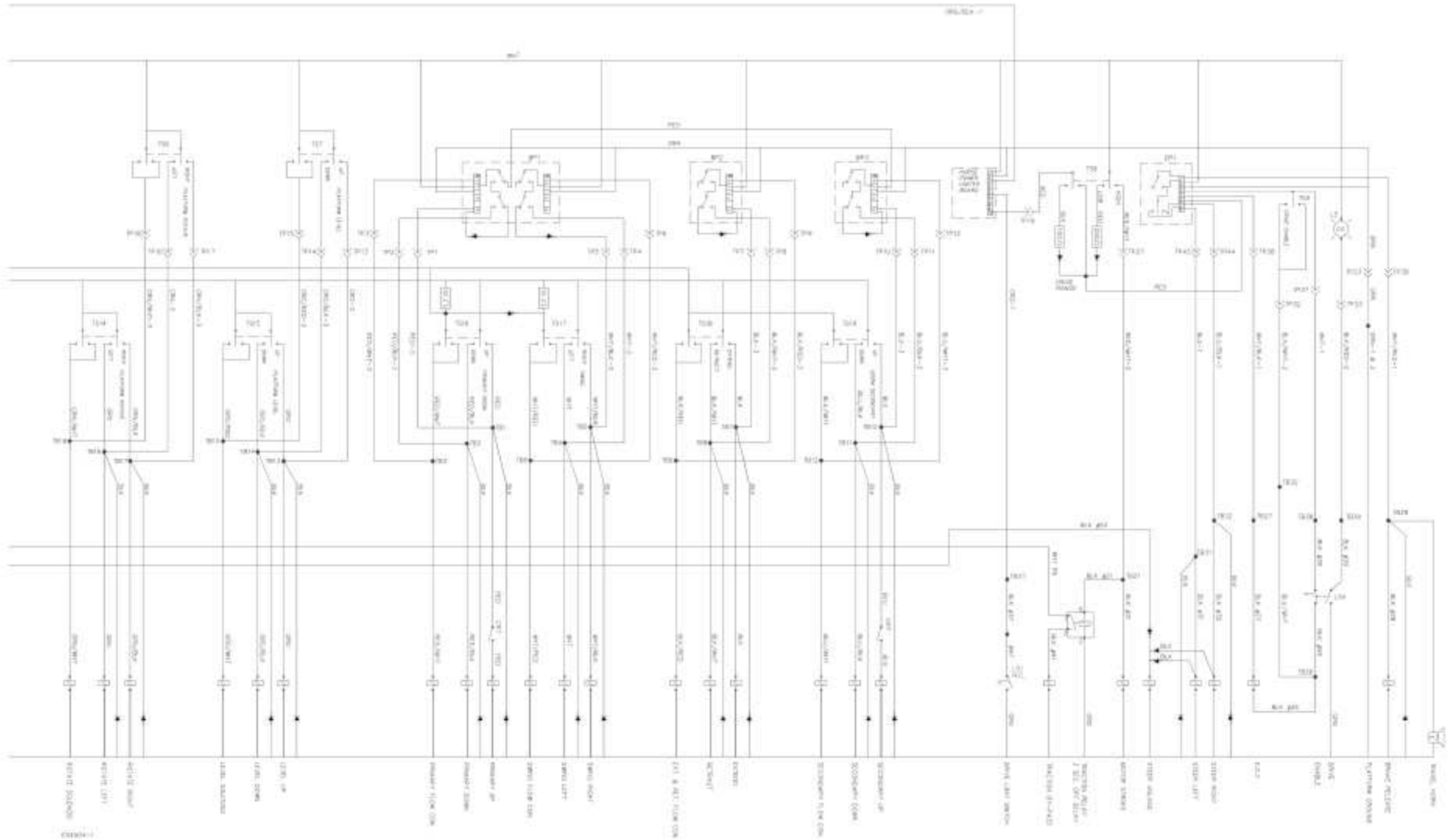
Test	Desired result
2 large posts	continuity (zero Ω)



a high amp power contact terminals (large posts)

b solenoid activate coil terminals (small posts)

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