# Service Manual

Dumper

9001




| | |
|---|---|
| **Machine model** | **9001** |
| **Edition** | **1.0** |
| **Language** | **English** |
| **Item no.** | **1000164081** |


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**Electric system**



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# 2 Specifications

## 2.1 Chassis

Sturdy steel sheet chassis, rubber-mounted engine

## 2.2 Engine

| Engine | Model 9001 |
|---|---|
| Product | Perkins diesel engine |
| Model | 1104 C-44 T |
| Design | Water-cooled 4 stroke diesel engine |
| No. of cylinders | 4 |
| Fuel injection system | Direct injection |
| Aspiration | Turbocharger |
| Cooling system | Water-cooled |
| Lubrication system | Force-feed lubrication with trochoidal pump |
| Displacement | 4400 cm³ |
| Nominal bore and stroke | 105 x 127 mm |
| Output | 74.5 kW +/- 5% @ 2200 rpm |
| Max. torque | 415 Nm @ 1350 rpm |
| Max. engine speed without load | 2330 rpm +/- 25 rpm |
| Idling speed | 1000 rpm +/- 25 rpm |
| Valve tip clearance (intake/outlet) | 0.2/0.45 mm |
| Injection pressure | 290 +8/-0 bar |
| Compression | 21 – 35 kgf/cm² |
| Engine oil pressure[1] | 3.0 kgf/cm² |
| Pressure switch for engine oil pump | 0.6 +/- 0.15 bar |
| Thermostat opening temperature | 79 °C (beginning), 93 °C (fully open) |
| Thermal switch | 110 °C +/- 3 °C |
| Firing order | 1 – 3 – 4 – 2 – 1 (1st cylinder on fan side) |
| Direction of rotation | Counterclockwise (as seen from the flywheel) |
| Starting aid | Glow plugs |
| Max. inclined position (engine still supplied with oil): | 35° in all directions |
| Exhaust values according to | 97/68/EC tier 2 EPA tier 2, ECE R24 |

1. At operating temperature and maximum revs



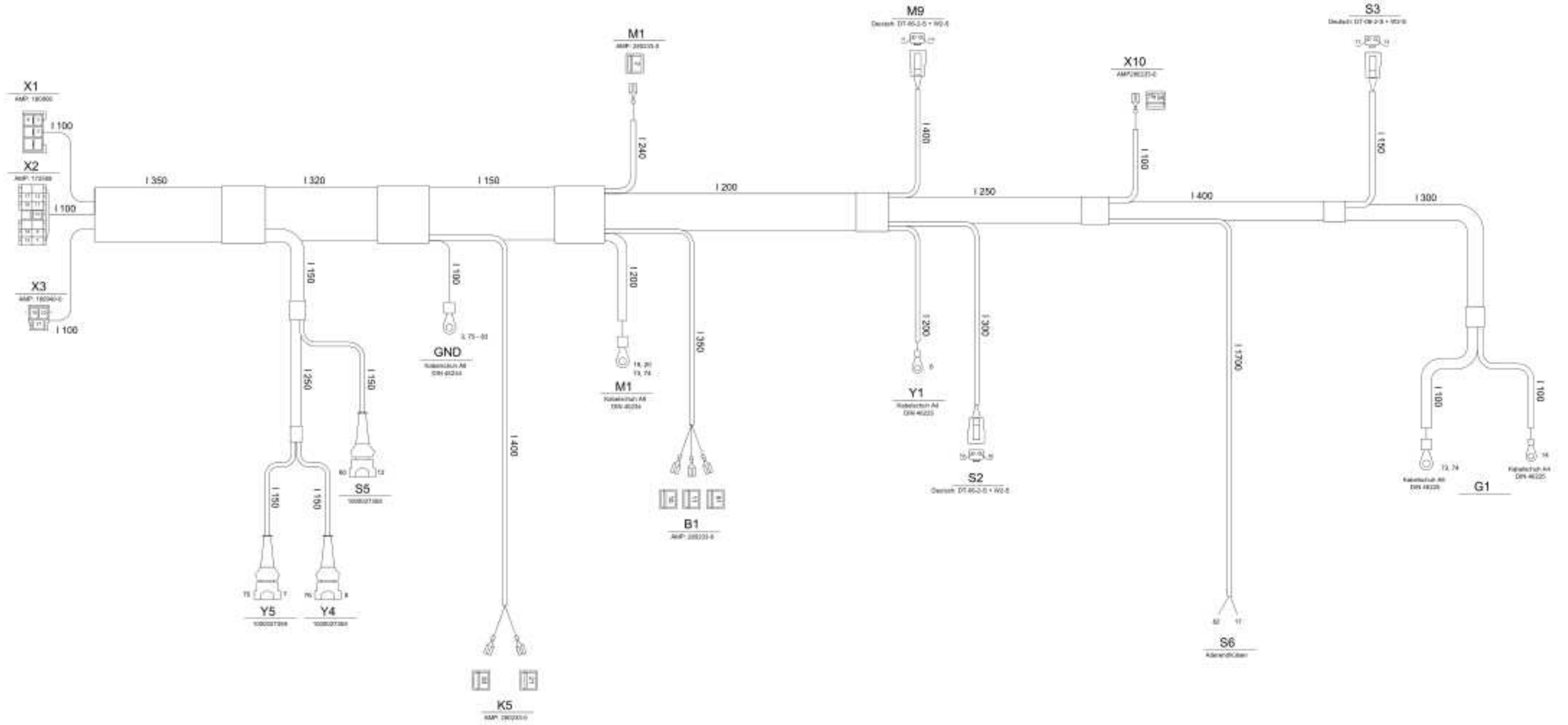
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| Problem | | Possible causes |
|---|---|---|
| Engine does not run on all cylinders | | Injection line leaks |
| | | Defective fuel injector |
| Insufficient or no engine oil pressure | | Oil level too low |
| | | Machine inclination too high (max. 25°) |
| | | Wrong SAE grade of engine lubrication oil |
| Engine oil consumption too high | | Oil level too high |
| | | Machine inclination too high (max. 25°) |
| Engine smoke | Blue | Oil level too high |
| | | Machine inclination too high (max. 20°) |
| | | Engine oil combustion (defective cylinder-head gasket) |
| | White | Engine starting temperature too low |
| | | Fuel grade does not comply with specifications |
| | | Wrong valve tip clearance |
| | | Defective fuel injector |
| | | Coolant combustion (defective cylinder-head gasket) |
| | Black | Fouled air filter |
| | | Defective air filter maintenance switch or gauge |
| | | Wrong valve tip clearance |
| | | Defective fuel injector |



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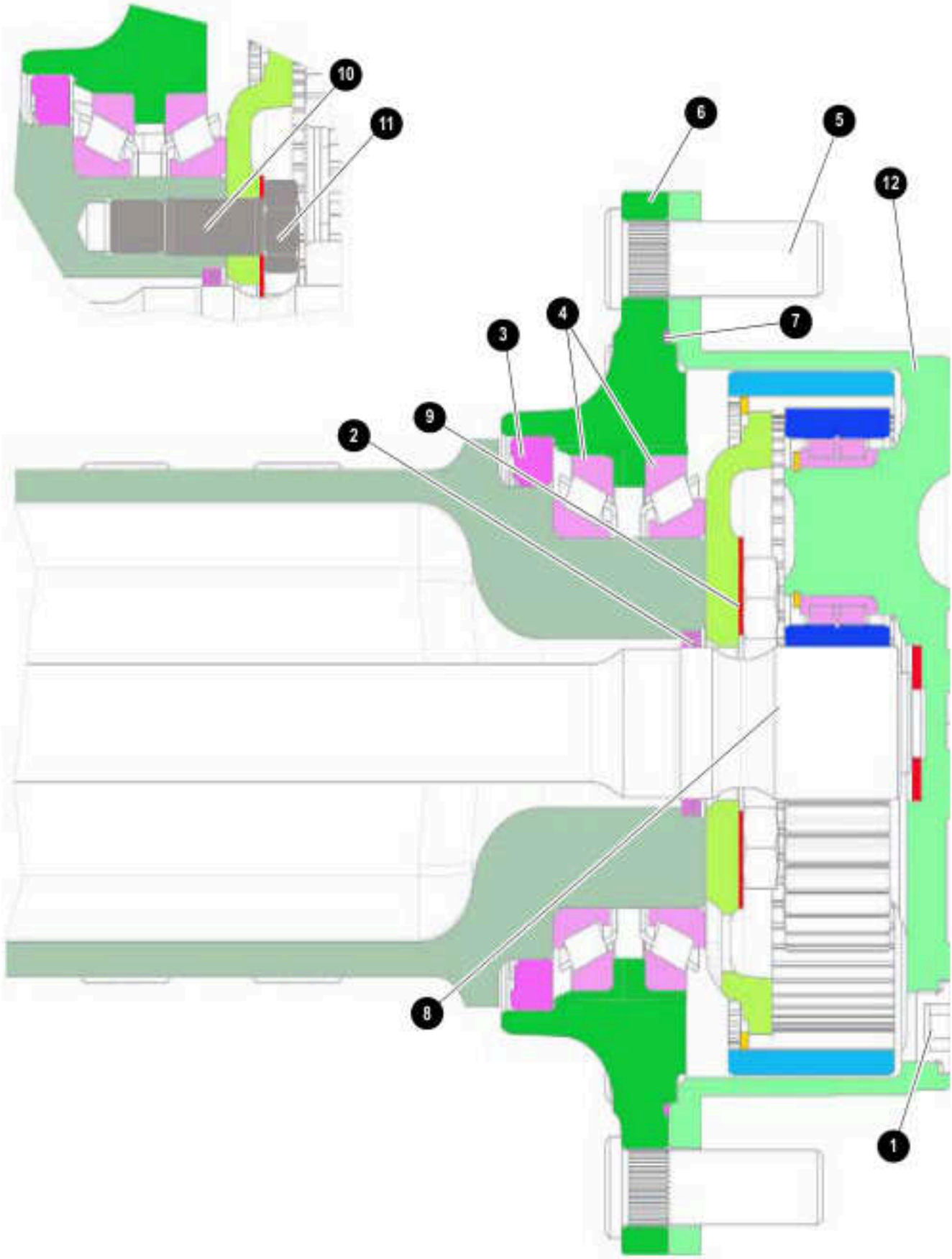
## 10.18 Wiring harness 1000115002: engine wiring harness






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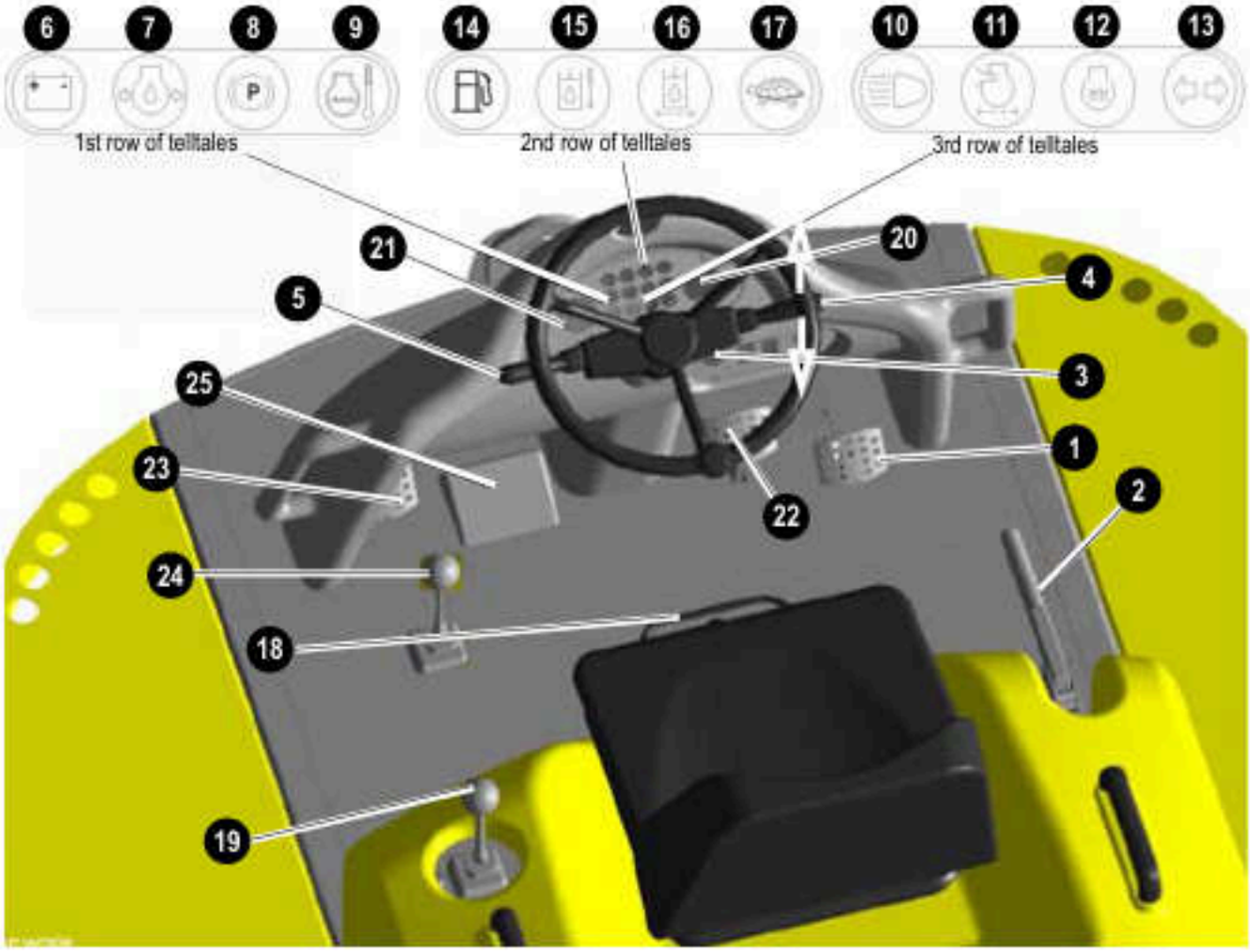
## 6.7 Wheel hub






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## 10.6 Instrument panel: overview



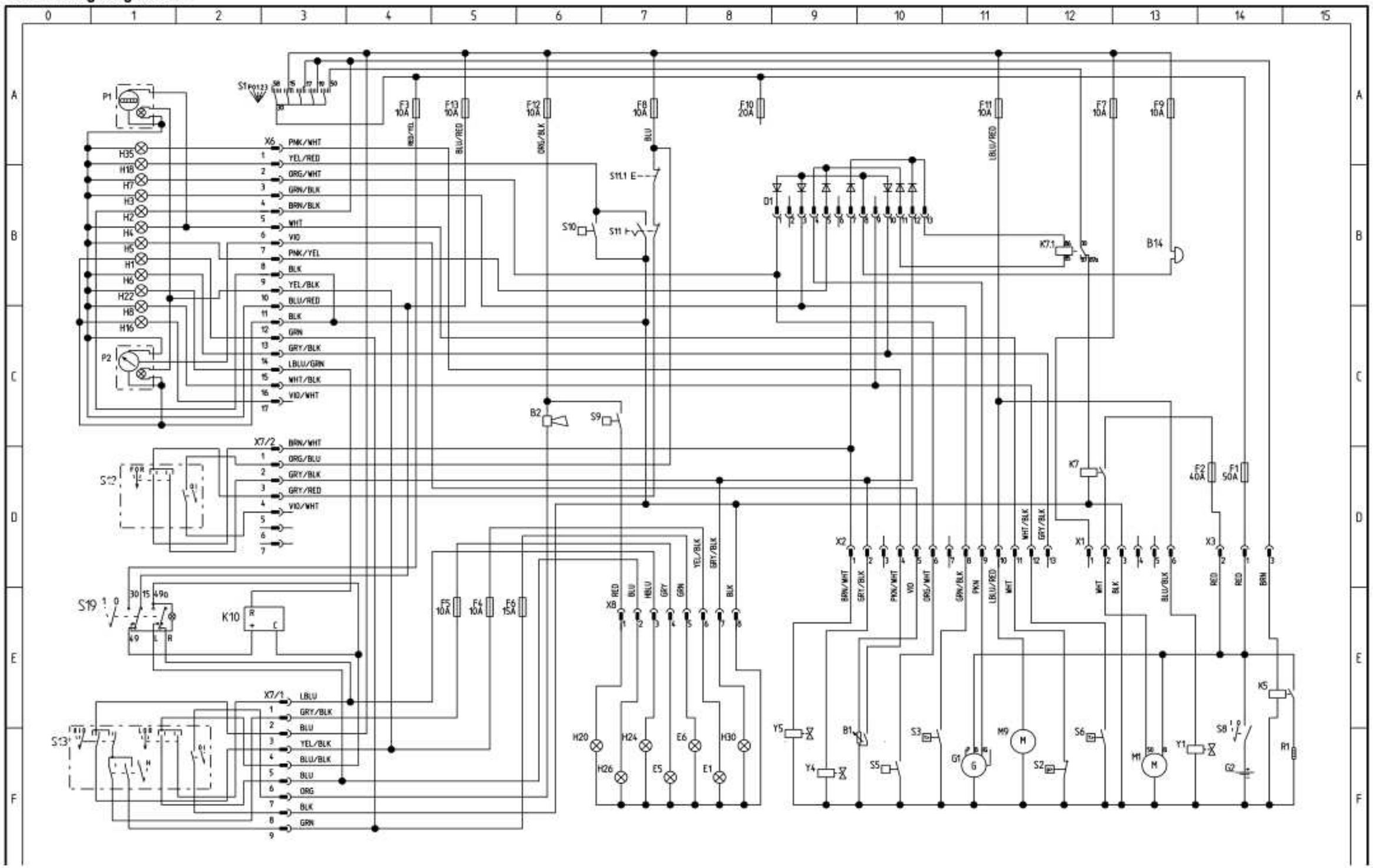

**Operating equipment: legend**

| Pos. | Description | Pos. | Description |
|---|---|---|---|
| 1 | Accelerator pedal | 14 | Spare fuel telltale |
| 2 | Handbrake | 15 | Not assigned |
| 3 | Ignition lock | 16 | Converter oil pressure telltale |
| 4 | Forward-reverse control<br>up/down: fast/slow<br>forwards/backwards: forwards/reverse | 17 | Low-speed telltale |
| 5 | Turn indicator switch – horn – light switch | 18 | Lever for horizontal seat adjustment |
| 6 | Alternator charge telltale | 19 | Skip control lever |
| 7 | Engine oil pressure telltale | 20 | Hour meter |
| 8 | Handbrake telltale | 21 | Fuel level indicator |
| 9 | Engine temperature telltale | 22 | Brake pedal |
| 10 | High beam telltale | 23 | Clutch pedal |
| 11 | Converter oil temperature telltale | 24 | Shift lever |
| 12 | Preheating telltale | 25 | Footrest |
| 13 | Turn indicator telltale | | |



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## 10.12 Wiring diagram A3






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