Service Manual

TM200
TM270
TM300

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* **Note:** New engines DO NOT require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores, resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load). Engines of new machines are filled at the factory with JCB 10W/30 Multigrade oil. This oil should be drained after the first 100 hours operation and the engine filled with the appropriate recommended grade as shown in the lubrication chart. JCB 10W/30 Multigrade should also be used for the first 100 hours operation whenever a new or reconditioned engine is fitted to the machine. After the first 100 hours operation, it is essential that the 10W/30 oil is replaced by the lubricant recommended below.

NORTH AMERICA

ITEM	CAPACITY	FLUID/LUBRICANT	SPECIFICATION
Engine Oil	10.7 litres (2.82 US gal)	JCB 15w/40 Engline Oil -10°C to +50°C (14°F to 122°F) JCB Engine Oil 10w -20°C to +10°C (-4°F to +50°F)	CF-4/SG, SAE 15w/40 CF-4/SG, SAE 10w
Gearbox	13 litres (3.34 US gal)	JCB Special Transmission Fluid	Ford ESN-M2C 33G
Transfer box	1.3 litres (0.34 US gal)	JCB HD 90 Gear Oil	API-GL-5, MIL-L-2105C
Axles **(TM200)** **(TM270)**	 16 litres (4.2 US gal) 20 litres (5.28 US gal)	 JCB Special Gear Oil JCB Special Gear Oil	 Ford ESE-M2C 86B Ford ESE-M2C 86B
Hydraulic System **(TM200)** Up to 38° C Above 38°C **(TM270)** Up to 38° C Above 38°C	 63 litres (16.6 US gal) 90 litres (23.78 USgal)	 JCB Special Hydraulic Fluid JCB High Performance Hydraulic Fluid JCB Special Hydraulic Fluid JCB High Performance Hydraulic Fluid	 ISO VG32 ISO VG46 ISO VG32 ISO VG46
Cooling System	15.5 litres (4.1 US gal)	Water/Anti-freeze (see **Coolant mixture**)	ASTM D3306-74
Fuel System	90 litres (23.78 US gal)	Diesel Oil (see **Types of Fuel**)	ASTM D975-66T Nos. 1D, 2D.
Grease Points		JCB Special MPL Grease	Lithium based, No. 2 consistency
Wear Pad Runways		JCB Waxoyl	

* **Note:** The total hydraulic system capacity depends on the equipment being used. Fill the system with all rams closed and watch the level indicator.

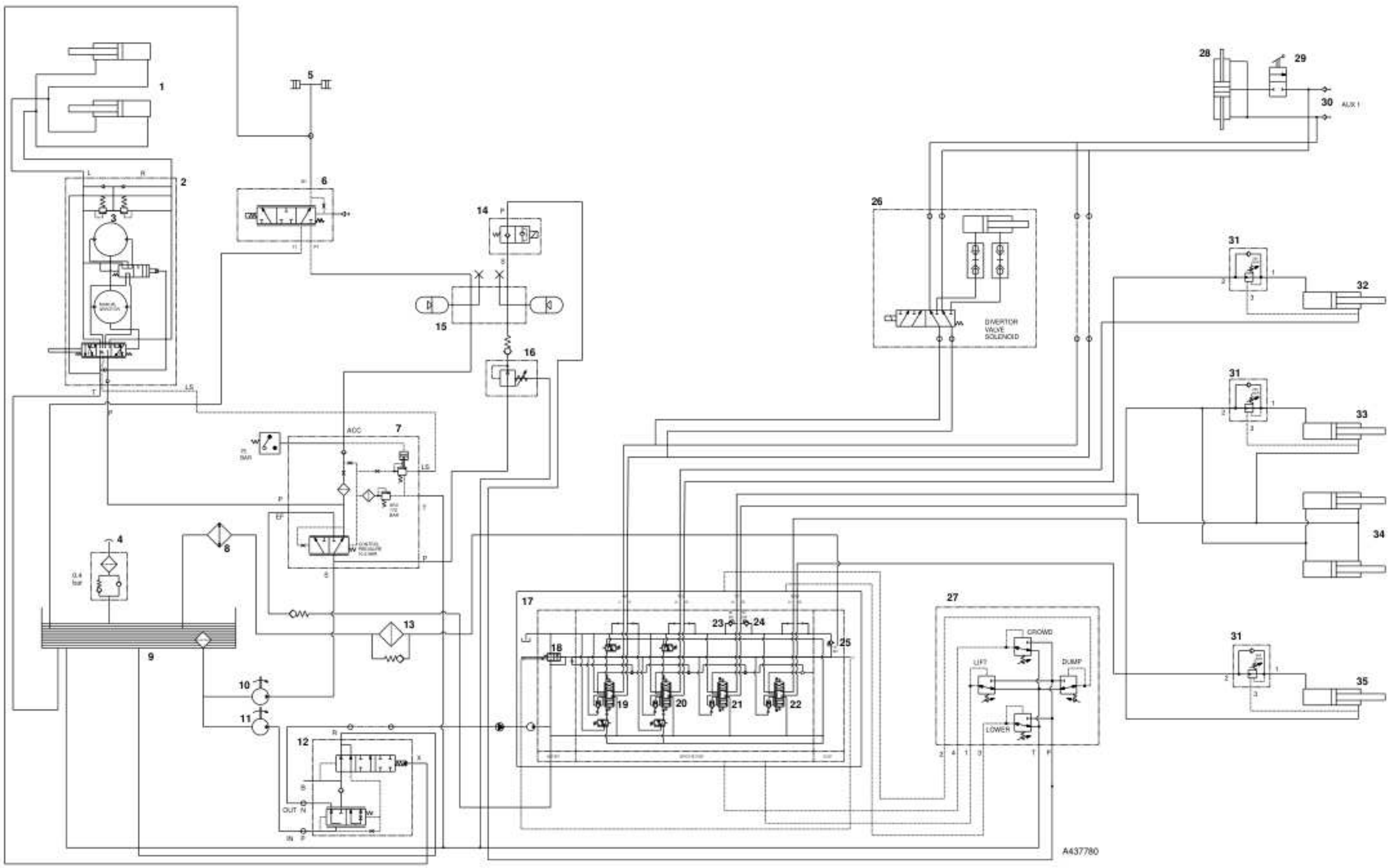
* † The figure quoted is TOTAL system capacity. Use the **'MAX'** and **'MIN'** marks on the dipstick when refilling the system.

* **Note:** Biodegradable Hydraulic Fluid is a factory option ONLY. Replenish with JCB Biodegradable Multigrade Hydraulic Fluid.
For further information, contact Wheeled Loader Technical Service.

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Removal and Replacement

Removal

After securing the machine by blocking the wheels both sides and installing the articulation locks, remove the driveshafts from the transfer gearbox yokes, items **5**.

Mark the yokes and driveshafts before removal to make sure that they are refitted correctly.

Support the transfer gearbox securely on a trolley jack.

Note: approximate weight 67 kg (147 lb).

Unscrew upper mounting setscrew at **X** and the nuts from the two mid-section through-bolts at **Y**. Ensuring the gearbox has adequate lateral security, withdraw through-bolts, lower trolley jack to release unit from rear module.

Replacement

Replacement is the reverse of removal.

Refill gearbox with correct grade of lubricant after installation (refer to **Technical Data - Transfer Gearbox - this section**).

Dismantling and Assembly

When Dismantling

Drain lubricant from drain plug **2** after releasing filler plug **1**.

Using service tool 892/00812, remove the yokes **5**, nuts **3** and washers **4**.

The gearbox may be split by removing screws **6**. Lay gearbox on a flat surface and lift the casing top half, take care to retain dowels **14**.

Remove gear **10** complete with bearings **9** (the outer races must be retained with the bearings if they are to be refitted).

Remove input shaft **13** and gear **7** complete with bearings from casing. Remove input shaft, if required, by driving out with a suitable soft faced hammer.

Repeat procedure for output shaft **12**.

When Assembling

Assembly is the reverse of dismantling, ensuring all components are to a acceptable standard and that shaft seals **11** are renewed.

Dowel protrusion should not exceed 9.5 mm (3/8 in).

JCB Multi-Gasket should be used to seal the casing halves.

Pack between the lips of the seals with grease before fitting.

Idler gear **10** endfloat can be checked by removing plug **19**. The endfloat should be 0.025mm to 0.25mm (0.001in. to 0.010in.).

Note: Make sure that the yokes **5** are aligned with each other.

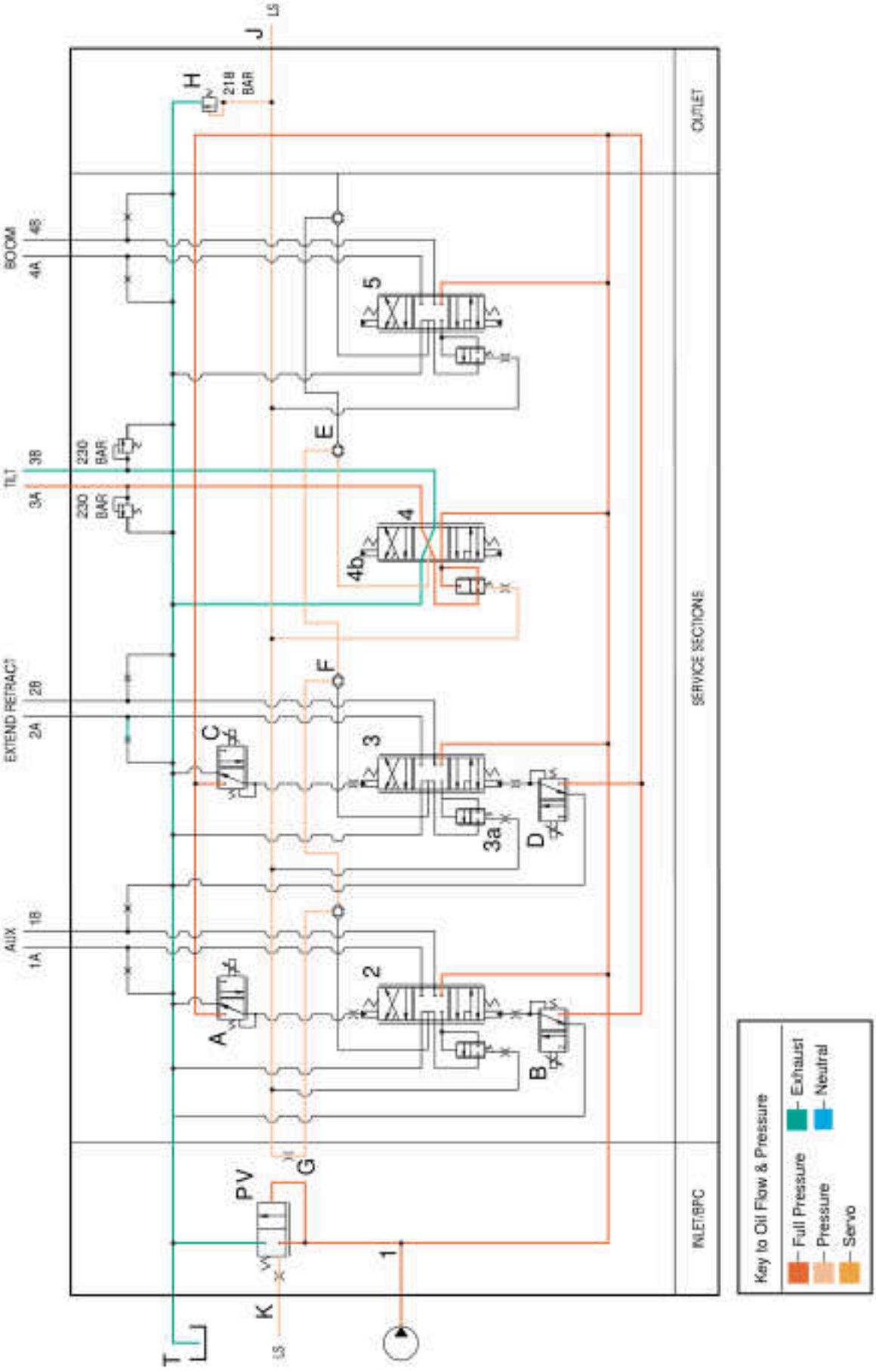
After torque loading, stake nuts **3** using a square ended staking tool.

Torque Settings

Item	Nm	kgf m	lbf ft
1 & 2	102	10.4	75.2
3	300	30.6	221.3
6	56	5.7	41.3
15	10	1.0	7.4
19	35	3.6	25.8

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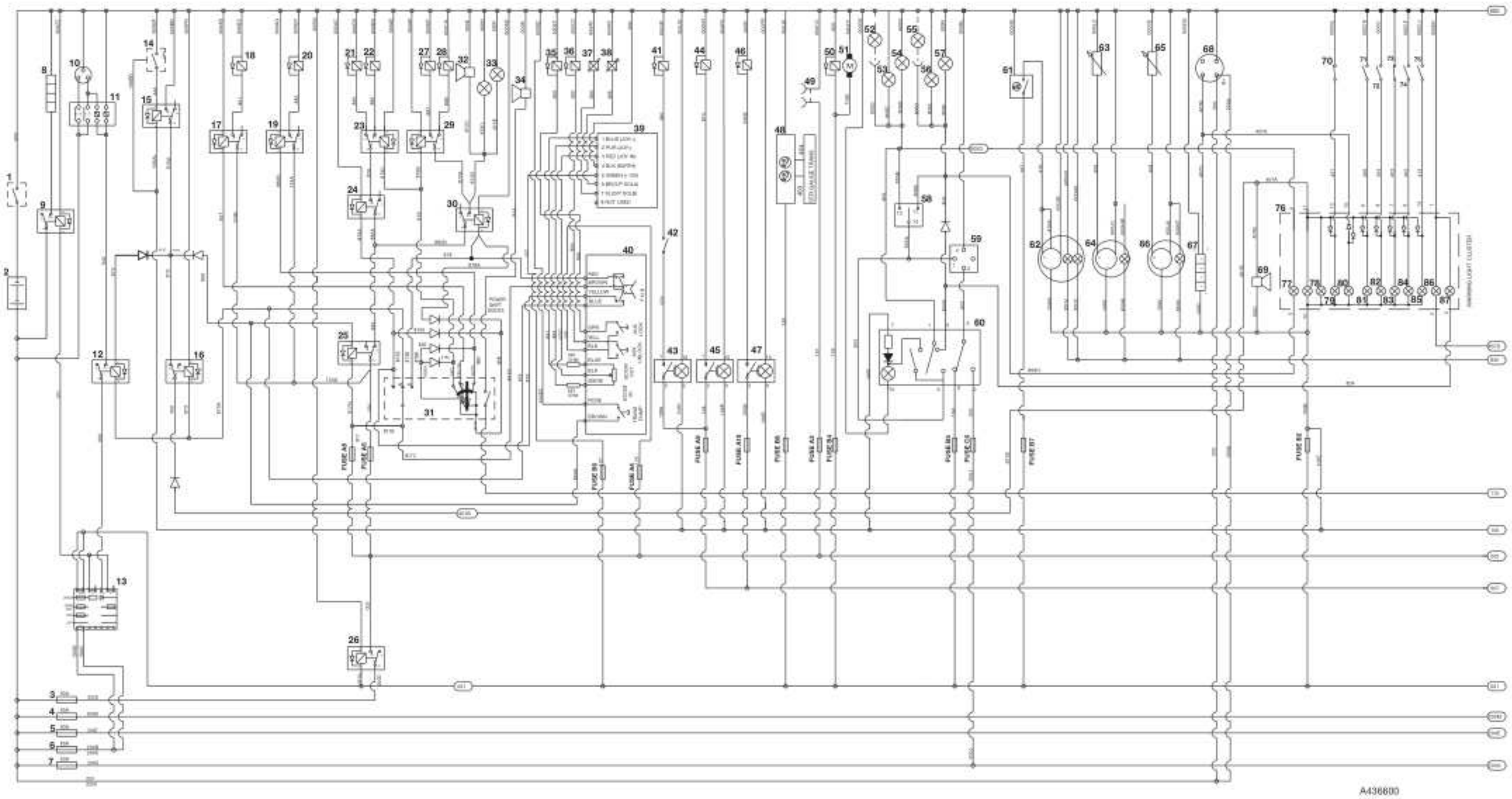
Tilt Circuit



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