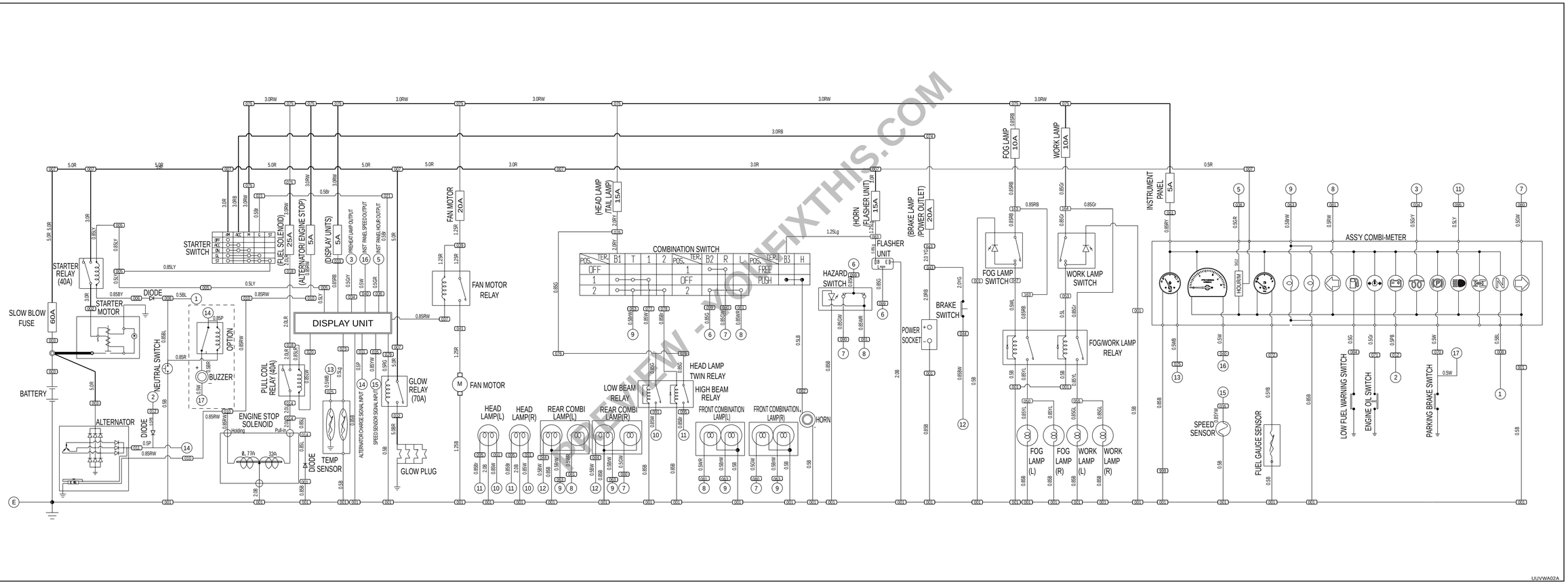
2.4 OVERALL CIRCUIT DIAGRAM

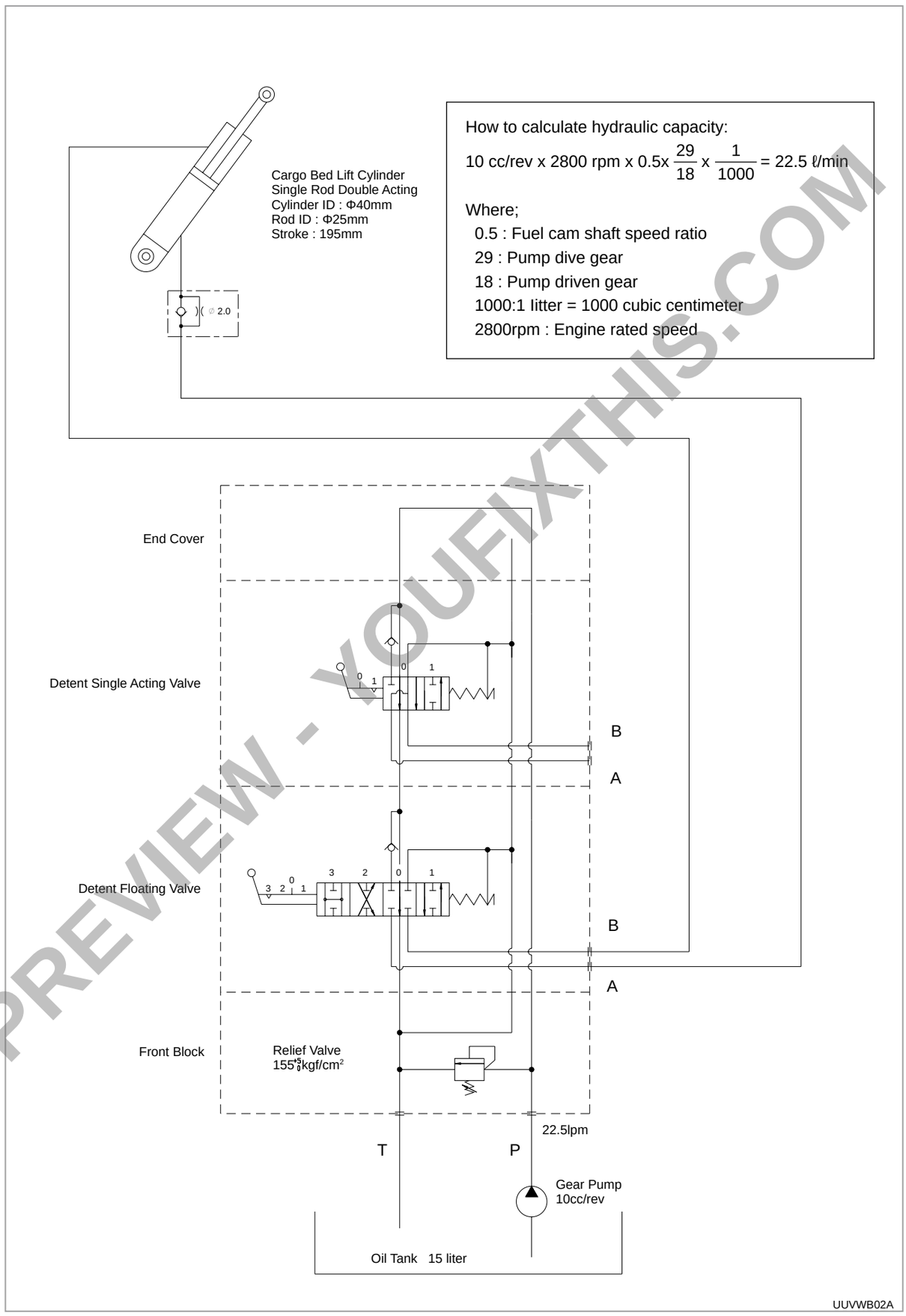


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2.2 HYDRAULIC CIRCUIT



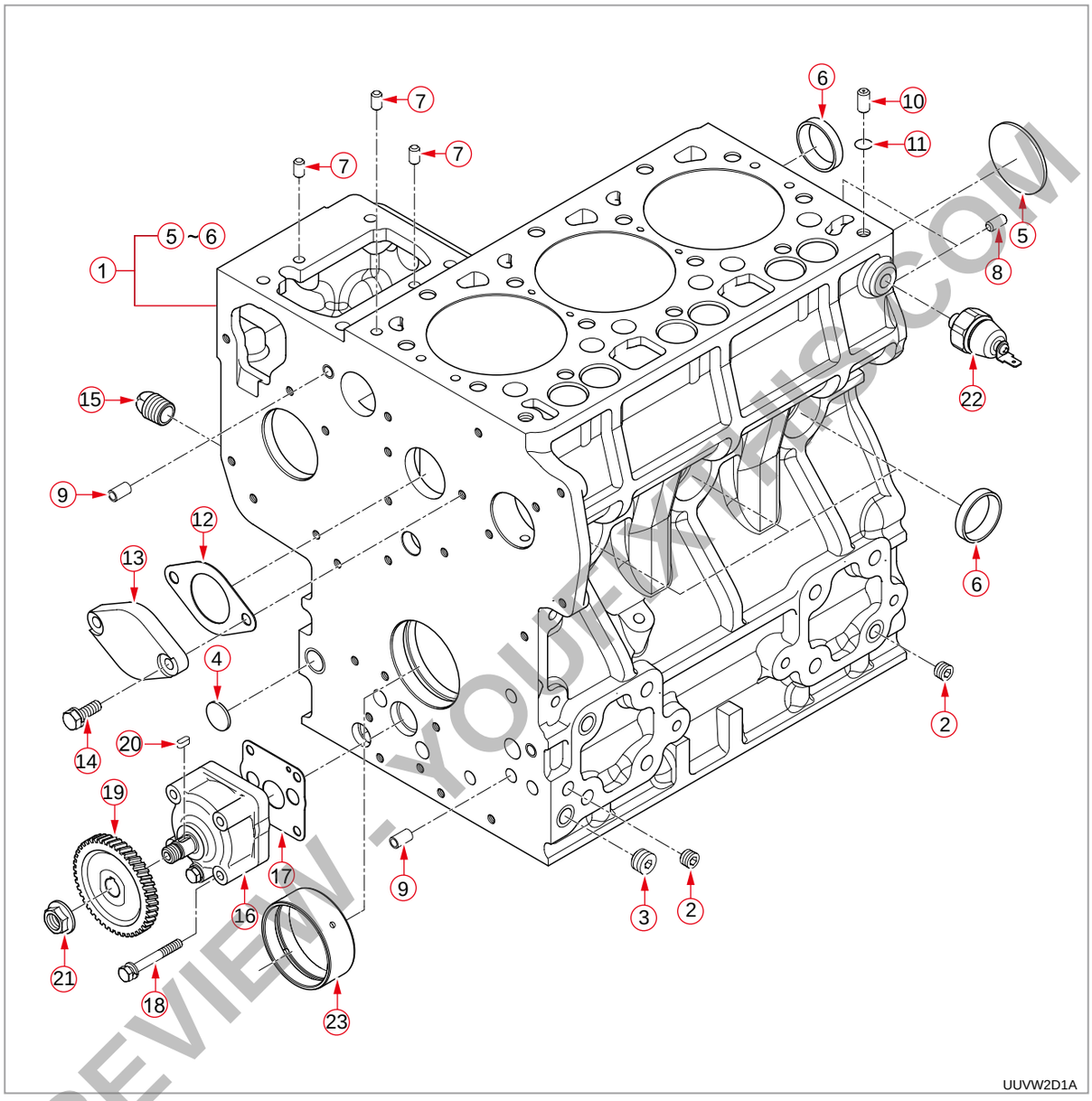
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7. ENGINE EXPLODED VIEW

7.1 E010 CYLINDER BLOCK



UUVW2D1A

COMPONENTS

(1) TOTAL CYLINDER BLOCK ASSY
(2) PLUG
(3) PLUG
(4) PLUG
(5) PLUG
(6) PLUG
(7) STRAIGHT PIN
(8) PIN, STRAIGHT
(9) PIN
(10) PIN, PIPE
(11) O RING
(12) COVER
(13) GASKET
(14) BOLT
(15) PLUG
(16) PUMP OIL ASSY
(17) GASKET, OIL PUMP
(18) BOLT
(19) GEAR, OIL PUMP DRIVE
(20) KEY
(21) FLANGE NUT-O/P DRIVE
(22) OIL SWITCH
(23) METAL, CRANKSHAFT

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9. TIGHTENING TORQUES

9.1 GENERAL USE SCREWS, BOLTS AND NUTS

Screws, bolts and nuts whose tightening torques are not specified in this workshop manual should be tightened according to the table below.

Mark on bolt head	4 No-grade or 4T						7 7T						9 9T		
Material of bolt	SS400, S20C						S43C, S48C						SCr435, SCM435		
Material of steel or gray iron part	Steel or gray iron			Aluminum			Steel or gray iron			Aluminum			Steel or gray iron		
Code \ Unit	Nm	kgf-m	lb-ft	Nm	kgf-m	lb-ft	Nm	kgf-m	lb-ft	Nm	kgf-m	lb-ft	Nm	kgf-m	lb-ft
M6 (6 mm, 0.24 in.)	7.85 ~ 9.31	0.80 ~ 0.95	5.79 ~ 6.87	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	9.81 ~ 11.2	1.00 ~ 1.15	7.24 ~ 8.31	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	12.3 ~ 14.2	1.25 ~ 1.45	9.05 ~ 10.4
M8 (8 mm, 0.31 in.)	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	16.7 ~ 19.6	1.7 ~ 2.0	12.3 ~ 14.4	23.6 ~ 27.4	2.4 ~ 2.8	17.4 ~ 20.2	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	29.5 ~ 34.3	3.0 ~ 3.5	21.7 ~ 25.3
M10 (10 mm, 0.39 in.)	39.3 ~ 45.1	4.0 ~ 4.6	29.0 ~ 33.2	31.4 ~ 34.3	3.2 ~ 3.5	23.2 ~ 25.3	48.1 ~ 55.8	4.9 ~ 5.7	35.5 ~ 41.2	39.3 ~ 44.1	4.0 ~ 4.5	29.0 ~ 32.5	60.9 ~ 70.6	6.2 ~ 7.2	44.9 ~ 52.0
M12 (12 mm, 0.47 in.)	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5				77.5 ~ 90.2	7.9 ~ 9.2	57.2 ~ 66.5	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5	103 ~ 117	10.5 ~ 12.0	76.0 ~ 86.7
M14 (14 mm, 0.55 in.)	108 ~ 125	11.0 ~ 12.8	79.6 ~ 92.5				124 ~ 147	12.6 ~ 15.0	91.2 ~ 108				167 ~ 704	17.0 ~ 20.0	123 ~ 144
M16 (16 mm, 0.63 in.)	167 ~ 191	17.0 ~ 19.5	123 ~ 141				197 ~ 225	20.0 ~ 23.0	145 ~ 166				260 ~ 304	26.5 ~ 31.0	192 ~ 224
M18 (18 mm, 0.71 in.)	246 ~ 284	25.0 ~ 29.0	181 ~ 209				275 ~ 318	28.0 ~ 32.5	203 ~ 235				344 ~ 402	35.0 ~ 41.0	254 ~ 296
M20 (20 mm, 0.79 in.)	334 ~ 392	34.0 ~ 40.0	246 ~ 289				368 ~ 431	37.5 ~ 44.0	272 ~ 318				491 ~ 568	50.0 ~ 58.0	362 ~ 419

9.2 STUD

Material of component part	Steel or gray iron			Aluminum		
Diameter \ Unit	Nm	kgf-m	lb-ft	Nm	kgf-m	lb-ft
M8 (8 mm, 0.31 in.)	11.6 ~ 15.6	1.2 ~ 1.6	8.68 ~ 11.5	8.82 ~ 11.6	0.90 ~ 1.2	6.51 ~ 8.67
M10 (10 mm, 0.39 in.)	24.6 ~ 31.3	2.5 ~ 3.2	18.1 ~ 23.1	19.7 ~ 25.4	2.0 ~ 2.6	14.5 ~ 18.8
M12 (12 mm, 0.47 in.)	29.5 ~ 49.0	3.0 ~ 5.0	21.7 ~ 36.1	31.4	3.2	23.1

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4. TROUBLESHOOTING

Symptom	Cause	Solution
Engine does not start	• No fuel	• Add fuel
	• Air in fuel system	• Bleed air
	• Water in fuel system	• Change fuel and repair or flush fuel system
	• Clogged fuel pipe	• Clean
	• Clogged fuel filter	• Clean or replace
	• Excessively high viscosity of fuel or engine oil at low temperature	• Use the specified fuel or engine oil
	• Fuel with low cetane number	• Use the specified fuel
	• Fuel leak due to loose injection pipe mounting nut	• Tighten nut
	• Incorrect injection timing	• Adjust
	• Clogged injection nozzle	• Clean or replace
	• Defective fuel injection pump	• Repair or replace
	• Defective fuel transfer pump	• Repair or replace
	• Defective piston, cylinder bore or bearing	• Repair or replace
	• Compression leak from cylinder	• Replace head gasket, tighten cylinder head bolts, glow plug and nozzle holder
	• Improper valve seating, damaged valve spring, valve seized	• Repair or replace
	• Improper valve timing	• Correct or replace timing gear
	• Worn piston ring and bore	• Repair or replace
	• Excessive valve clearance	• Adjust
Start motor does not run	• Discharged battery	• Charge
	• Defective start motor	• Repair or replace
	• Defective key switch	• Repair or replace
	• Disconnected wiring	• Connect
Engine running is not smooth	• Clogged or dirty fuel filter	• Clean or replace
	• Clogged air cleaner	• Clean or replace
	• Fuel leak due to loose injection pipe mounting nut	• Tighten nut
	• Defective fuel injection pump	• Repair or replace
	• Incorrect nozzle opening pressure	• Adjust or replace
	• Seized or clogged nozzle	• Repair or replace
	• Clogged fuel overflow pipe	• Clean or replace
	• Defective governor	• Repair or replace
Either white or blue exhaust smoke is produced	• Excessive engine oil	• Reduce to the specified level
	• Worn piston ring and bore or seized piston ring	• Repair or replace
	• Incorrect injection timing	• Adjust
	• Insufficient compression pressure	• Adjust valve clearance

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7.2 LUBRICATION AND REPLENISHMENT

To prevent serious equipment damage, use only genuine DAEDONG oils or equivalents.

No	Item	Capacity	Lubricants
1	Fuel tank	28 ℓ (7.39 U.S.gal.)	Diesel fuel
2	Radiator & water tank	6.3 ℓ (1.66 U.S.gal.)	Fresh clean water with Ethylene glycol (50:50)
3	Engine crankcase	3.2 ℓ (0.85 U.S.gal.)	Engine oil: API Service Classification CC or CD, SAE 15W-40
4	Transmission case	0.9 ℓ (0.24 U.S.gal.)	SAE gear oil No. 90 or DAEDONG: UTF55 Shell: DONAX-TD Exxonmobil: Mobilfluid 423 or 424 BP: Tractran UTH
5	Front axle case	0.5 ℓ (0.13 U.S.gal.)	
6	Rear axle case	0.8 ℓ (0.2 U.S.gal.)	
7	Brake fluid tank	Max level after bleeding	DOT3 or equivalent
8	Front axle knuckle case Rear universal joint	Apply until grease leaks out from a gap other than grease nipple.	SAE multi-purpose grease.
9	Hydraulic oil tank (Option)	15 ℓ (3.97 U.S.gal.)	DAEDONG: UTF55 Shell: DONAX-TD Exxonmobil: Mobilfluid 423 or 424 BP: Tractran UTH

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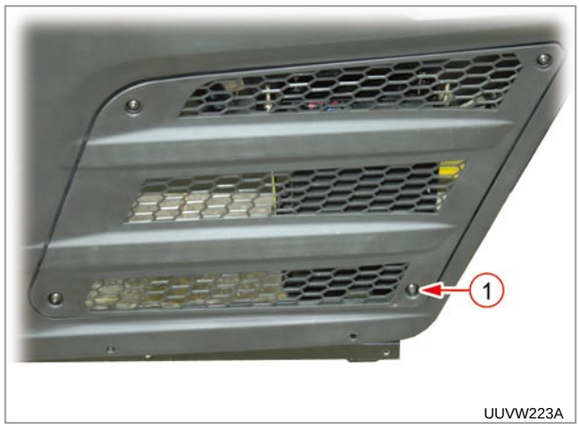
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6. DISASSEMBLY, SERVICE AND ASSEMBLY

6.1 ENGINE REMOVAL

1. Park the vehicle on level ground, stop the engine, and then apply the parking brake.



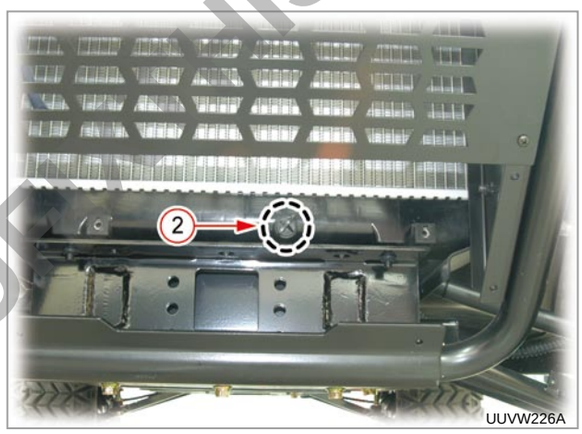
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UUVW224A

2. Unscrew the four battery cover mounting screws (M6, 1), remove the side cover, and disconnect the negative battery cable.



UUVW225A



UUVW226A

3. Unscrew the four lower screen mounting screws (M5, 1) and remove the lower screen. Then, place a container under the rear of the radiator and unscrew the drain cock (2) of the radiator to drain the coolant.



UUVW227A

4. Remove the seat (1) by pulling its rear section upward. Then, unscrew the seven seatback screws (M6) to remove the seatback (2).

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5. SPECIFICATIONS

Model			MECHRON 2200
Engine	Model		3C100LWU
	Type		4Cyl., In-line Vertical, Water-cooled, Indirect injection, diesel
	Max. power	HP (Kw)/rpm	22 (16.2) / 2,800
	Number of cylinders		3
	Bore x stroke	mm (in.)	75 X 76 (2.95 X 2.99)
	Displacement	cc (cu in.)	1,007 (61.45)
	Rated revolution	(rpm)	2,800
	Injection timing		BTDC 18°
	Injection sequence		1 - 2 - 3
	Compression ratio		21.5 : 1
Capacity	Fuel tank	ℓ(U.S.gal)	28 (7.39)
	Engine crankcase	ℓ(U.S.gal)	3.2 (0.85)
	Engine coolant	ℓ(U.S.gal)	6.3 (1.66)
	Transmission case	ℓ(U.S.gal)	0.9 (0.24)
	Front axle case	ℓ (U.S.gal)	0.5 (0.13)
	Rear axle case	ℓ (U.S.gal)	0.8 (0.2)
Drive train	Type		Belt CVT
	Transmission		Forward 2 (High/Low), Reverse 1, Mechanical
	Brake		Front / Rear hyd. dry caliper disc
	4WD system		Manual
	Differential lock	Front	Limit slip
		Rear	Manual
	Tire size	Front	25 x 10 - 12 6PR
		Rear	25 x 11 - 12 6PR
Suspension	Front		Independent, McPherson strut
	Rear		Independent, Double A-arm (Wishbone)
Steering	Type		Rack & Pinion
Cargo bed	Size	mm (in.)	980 x 1,427 x 293 (38.6 x 56.2 x 11.5)
	Capacity	kg (lbs)	500 (1,102)
Driving speed	Forward	Km/h(mile/h)	0 ~ 40 (0 ~ 25.0)
	Reverse	Km/h(mile/h)	0 ~ 25 (0 ~ 15.5)
Turning radius		m (ft.)	4.0 (13.1)
Weight		kg (lbs)	765 (1,687)
Towing capacity		kg (lbs)	590 (1,300)
Payload capacity (include driver)		kg (lbs)	726 (1,600)

NOTE: The specifications are subject to change without notice.

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MECHRON 2200

SAFETY FIRST

CHAPTER 1

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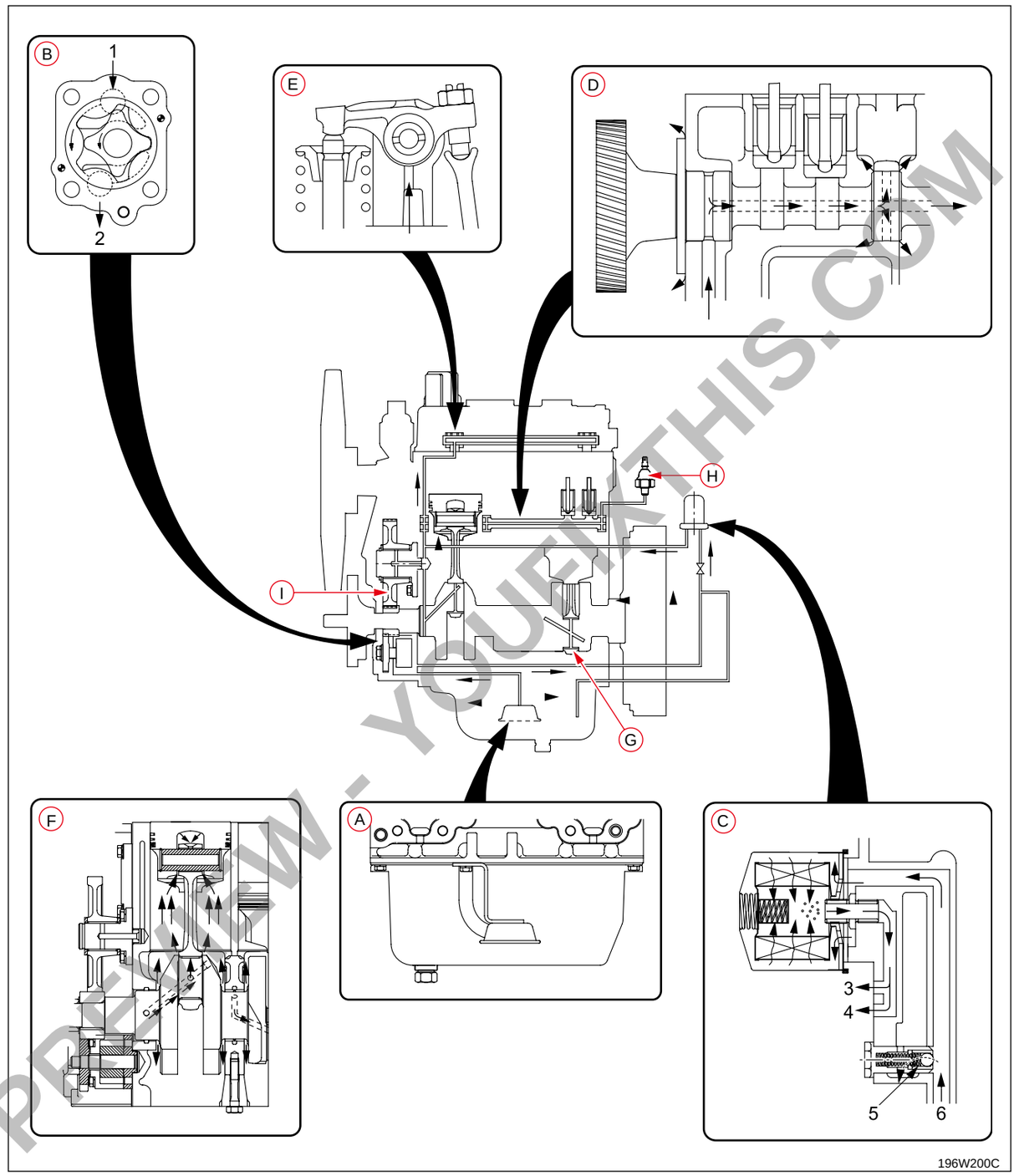
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3.2 LUBRICATION SYSTEM



A. Oil sump screen

B. Oil pump

1. Inlet hole
2. Outlet hole

C. Oil filter cartridge and relief valve

3. To rocker arm shaft and cam-shaft
4. To crankshaft
5. Relief valve
6. From pump

D. Camshaft

E. Rocker arm rocker arm shaft

F. Piston

G. Crankpin bearing

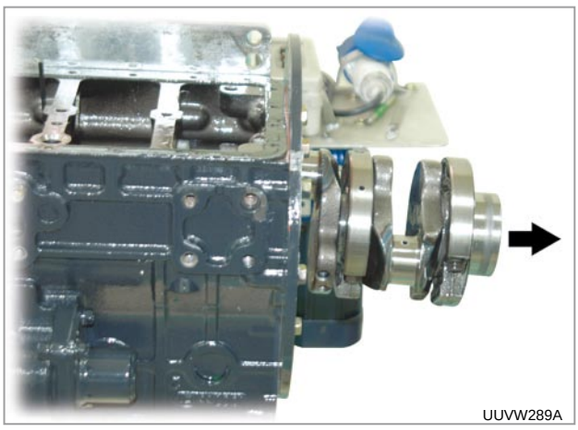
H. Oil switch

I. Idle gear

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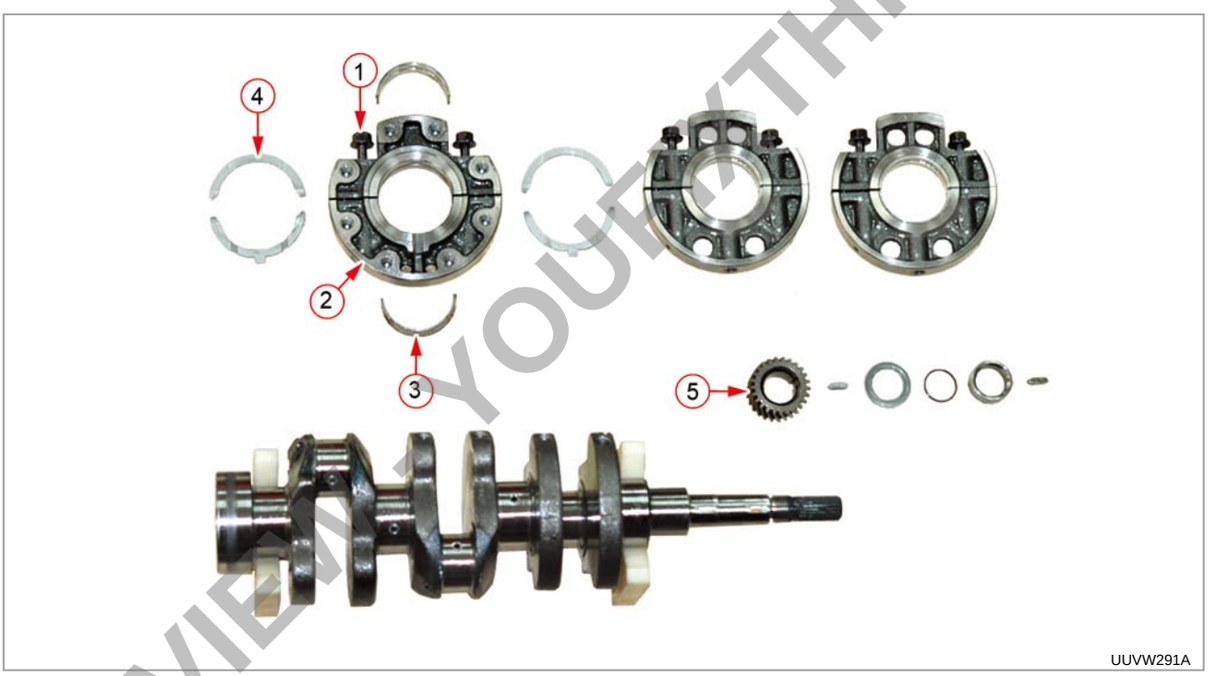
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5. Tap the crankshaft from its gear side with a rubber hammer to push out the crankshaft assembly to the flywheel side.



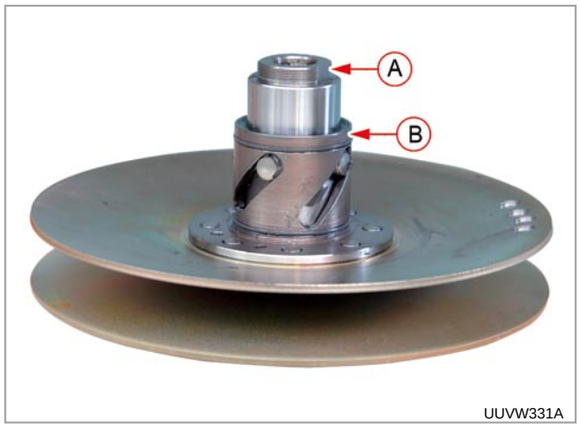
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6. Unscrew the main bearing case bolts 1 (1), and remove the bearing case (2), crankshaft bearing (3) and side bearing (4) in order.
7. Remove the crankshaft gear (5) as necessary. In order to remove the crankshaft gear, pull out the key and remove it using a puller.

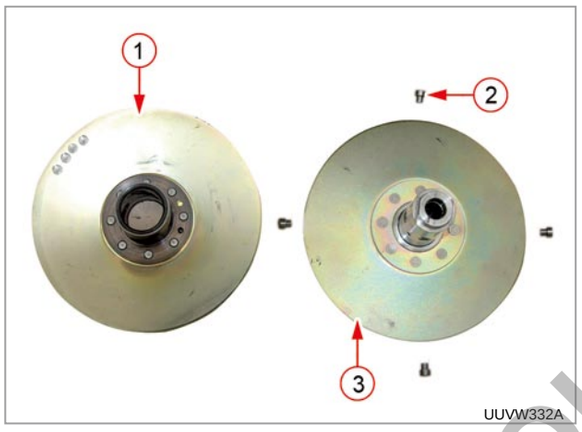
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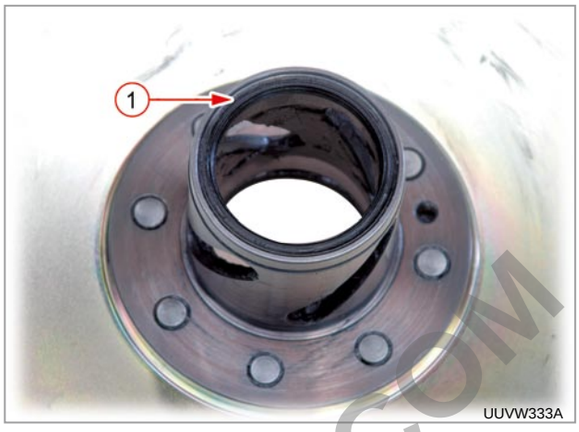


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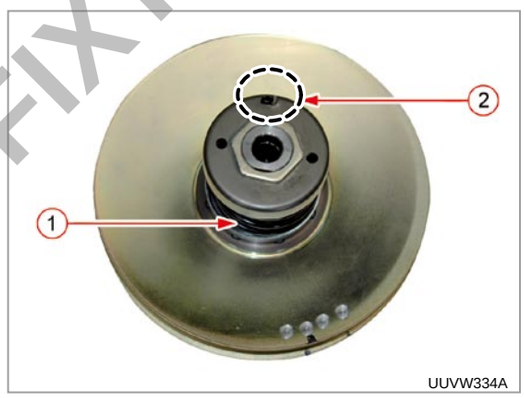
4. Remove the guide pin assembled between the fixing pulley shaft (A) and sliding pulley guide boss (B) and remove the sliding pulley(1), guide pin(2) and fixing pulley(3). When reassembling, apply the grease sufficiently to the guide boss groove.



UUVW333A

5. If necessary, remove the oil seal(1) to change. When reassembling, apply the proper amount of grease to the rib part of the contact surface.
6. Assemble in the reverse order of disassembly.

⚠ CAUTION



UUVW334A

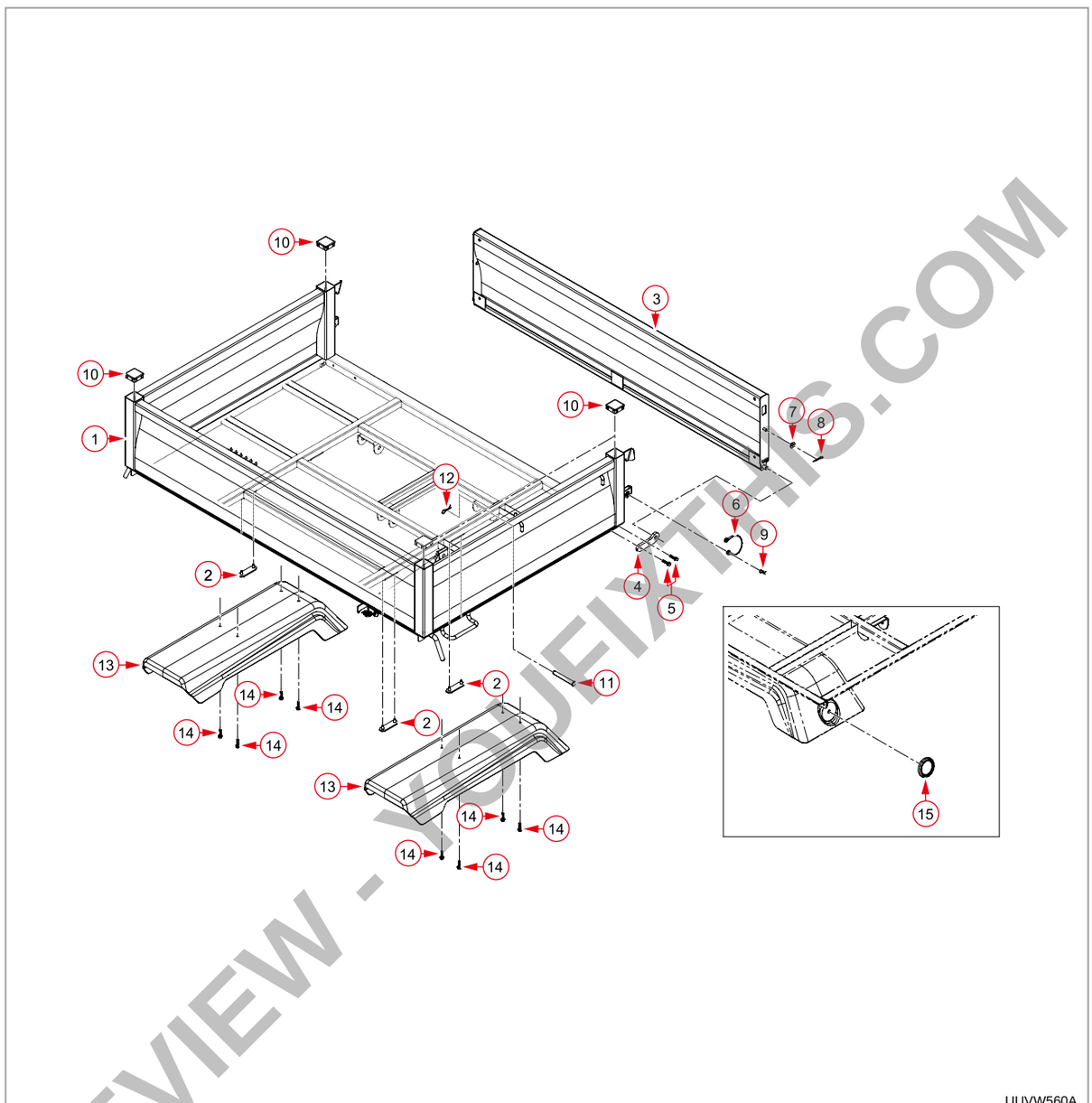
- **When assembling torsion spring(1), insert the end of one side to the groove of spring guide and the end of the other side to the groove of spring cover(2) and press by twisting 45° to the winding direction, and then insert the spring cover to the fixing pulley shaft and tighten the nuts by the regulation torque.**

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4.7 U700A DECK



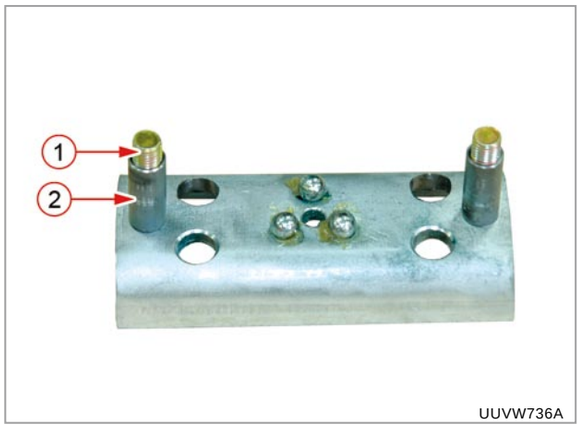
COMPONENTS

(1) DECK ASSY
(2) DECK UNDER BUMPER
(3) TAILGATE ASSY
(4) TAILGATE HINGE BRACKET
(5) BOLT
(6) STOP ROPE
(7) WASHER, PLAIN
(8) PIN, SPLIT
(9) PIN, SNAP
(10) DECK POLE COVER
(11) DOWEL PIN
(12) PIN, SNAP
(13) FENDER REAR
(14) BOLT, FLANGE
(15) PLATE

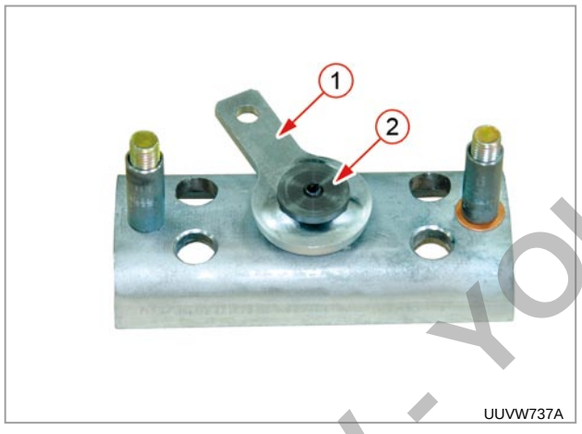
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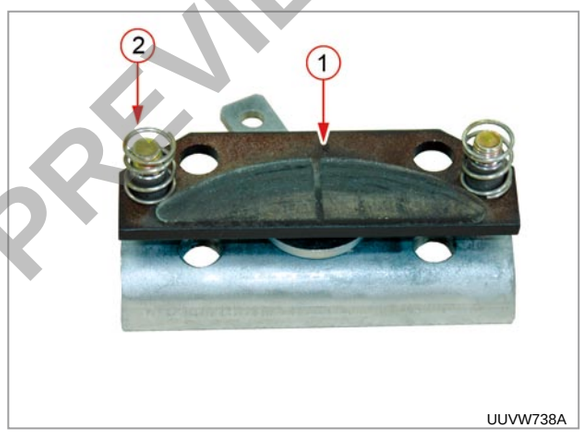
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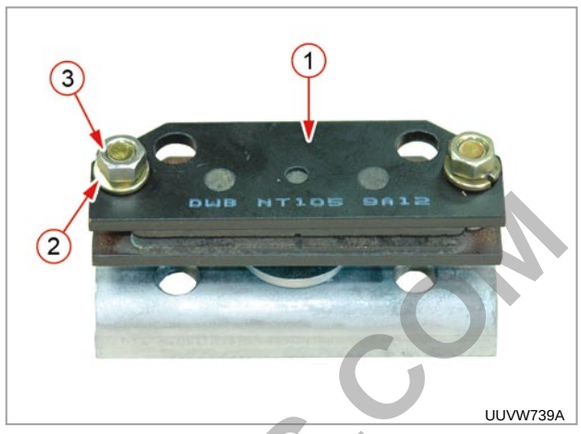
- Fit the bolts (1) to the bracket and insert the spacers (2).



- Place the cam lever (1) onto the ball and fit the support plate (2).



- Fit the pad (1) to the bolts and insert the springs (2).



- Fit the other pad (1) to the bolts and tighten the spring washers (2) and nuts (3).

IMPORTANT



- **The clearance of the brake pad should be over 4.8 mm (0.189 in.).**

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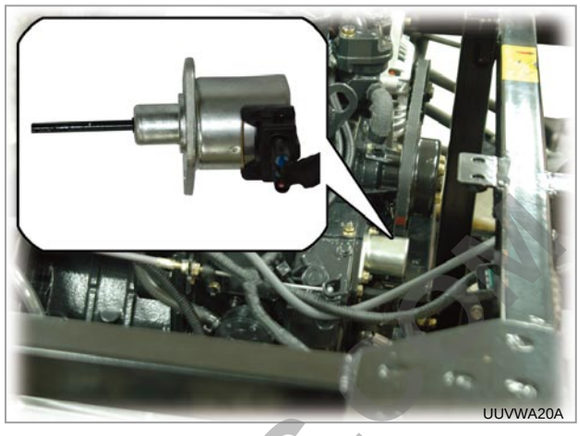
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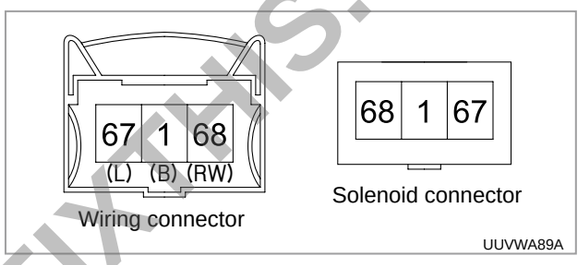
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UUVWA84A

- Circuit test:
  Disconnect the glow plug connector and connect the positive test lead to the wiring connector terminal (red with black stripe) and negative test lead to the body. Check that the voltage is 12 V when the ignition switch is in the "HEAT" position (manual preheating condition).

5.6 ENGINE STOP SOLENOID

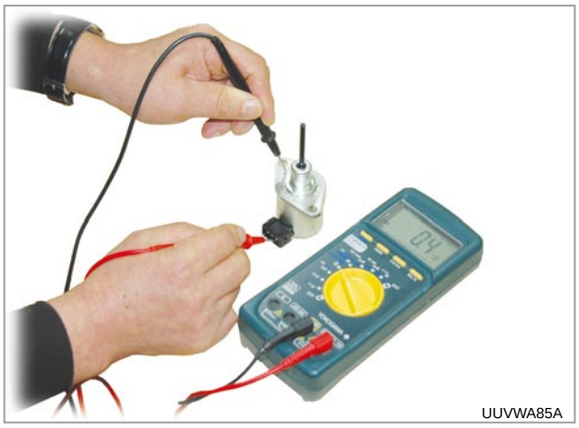

UUVWA20A



UUVWA89A

The engine stop solenoid is installed on the engine gear case.

The resistance of the engine stop solenoid should be measured when the wiring connector is disconnected.


UUVWA85A

Tester selector	Tester's measuring point		Remarks	Result
	Red lead	Black lead		
Resistance	Connector ⑥⑧	Connector ① (GND)	Hold coil	Approx. 13.8 Ω
	Connector ⑥⑦	Connector ① (GND)	Pull coil	Approx. 0.4 Ω

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