KIOTI®

CS2410(US)
CS2610(EU/AU)

WORKSHOP MANUAL

daedong

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SAFETY FIRST

CHAPTER 1

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3. SPECIFICATIONS

Model			CS2410	CS2610
Engine	Manufacturer		Shibaura	←
	Model		S773L	S773L-EU/AU
	Number of cylinders		3	←
	Total displacement	cc(cu in.)	1,131 (69.01)	←
	Bore and stroke	mm (in.)	77 X 81 (3.03 X 3.19)	←
	Engine gross power	HP (kw)	24.5 (18.27)	26 (19.39)
	Rated revolution	rpm	3,000	←
Capaci-ties	Engine crankcase (included filter)	u.s.gal (ℓ)	1.056 (4.0)	←
	Engine coolant	u.s.gal (ℓ)	0.950 (3.6)	←
	Fuel tank capacity	u.s.gal (ℓ)	7.10 (26.9)	←
	Transmission case	u.s.gal (ℓ)	3.43 (13.0)	←
	Front axle	u.s.gal (ℓ)	0.53 (2.0)	←
Drive train	Clutch		None	←
	Transmission	Shuttle	Twin pedals	←
		Main	HST	←
		Range	Constant mesh, 2	←
		Speeds	Continuously variable transmission	←
	Ground speed (Tire for turf) km/h (mph)	Forward	0 ~16.6 (10.32)	←
		Reverse	0 ~ 12.5 (7.77)	←
	4-wheel drive		Mechanical with shift lever	←
	Brake		Wet multiple discs	←
			Optional auto 4WD canceling system	←
	Differential lock		Standard for rear axle	←
Tires	Agricultural	Front	-	-
		Rear	-	-
	Turf	Front	18 x 8.5-8 R3	←
		Rear	26 x 12.00-12 R3	←
	Industrial	Front	18 x 8.5-8 R4	←
		Rear	26 x 12.00-12 R4	←
Hydraulic system	Pump capacity	gpm (ℓ/min)	5.41 (24.6)	←
	Steering		Non-load reaction type, full hydraulic	←
	Hydraulic lift control		Detent control valve	←
	3-point hitch		SAE Category I	←
	Max. lifting capacity lbs. (kg)	24in.Behind	700 (318)	←
		Lift link end	1,580 (715)	←
PTO	Rear	Type	Independent Wet multi disc clutch	←
		PTO shaft	1-3/8″ 6 splines	←
		Speed (PTO rpm/engine rpm)	540 / 3,000	←
	Mid	PTO shaft	16/32″ 15 splines	←
		Speed (PTO rpm/engine rpm)	2,200 / 3,020	←
Battery			12V 55 Ah	←
Min. turning radius (with one rear wheel braked)		feet (m)	8.33 (2.54)	←
Weight (with ROPS)		lbs. (kg)	1,455 (660)	←
Front weight (OPTION)		lbs. (kg)	60 (27)	←
Remote hydraulic valve with front or rear couplers (OPTION)		EA	1	←
Max. drawbar vertical load		lbs. (kg)	683 (310)	←
Max. trailer loading weight		lbs. (kg)	1,790 (812)	←

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7. MAINTENANCE SCHEDULE CHART

No.	Item \ Maintenance interval		Run hour								Run age		Remarks	
			50	100	200	400	600	800	1500	3000	1 year	2 years		
1	Engine oil	Change	⦿	●										
2	Engine oil filter	Replace	⦿	●										
3	Transmission oil filter	Replace	⦿		●									
4	HST oil filter	Replace	⦿		●									
5	Transmission fluid	Change				●								
6	Front axle oil	Change	⦿			●								
7	Front axle pivot	Adjust					●							
8	Engine start system	Check	●											
9	Greasing	Apply	●											
10	Wheel bolt torque	Check	●											
11	Battery condition	Check		●									*3	
12	Air cleaner element	Clean		●									*1	#
		Replace									●		*2	
13	Fuel filter element	Replace			●									#
14	Fan belt	Adjust		●									*3	
15	Brake pedal free play	Adjust		●										
16	Radiator hose and clamp	Check			●									
		Replace										●		
17	Power steering hose and oil line	Check			●									
		Replace										●		
18	Fuel line	Check		●										#
		Replace										●		
19	Intake air hose	Check			●									
		Replace										●	*3	
20	Toe-in	Adjust			●									
21	Engine valve clearance	Adjust						●						
22	Fuel injection nozzle injection pressure	Check							●					#
23	Injection pump	Check								●				#
24	Cooling system	Clean										●		
25	Coolant	Replace										●		
26	Fuel system	Check											*3	

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9. TIGHTENING TORQUE

9.1 GENERAL USE SCREWS, BOLTS AND NUTS

If the tightening torques are not specified for some screws, bolts and nuts in this manual, tighten them 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 opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
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 ~ 196	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 BOLTS

Material of opponent part	Ordinariness			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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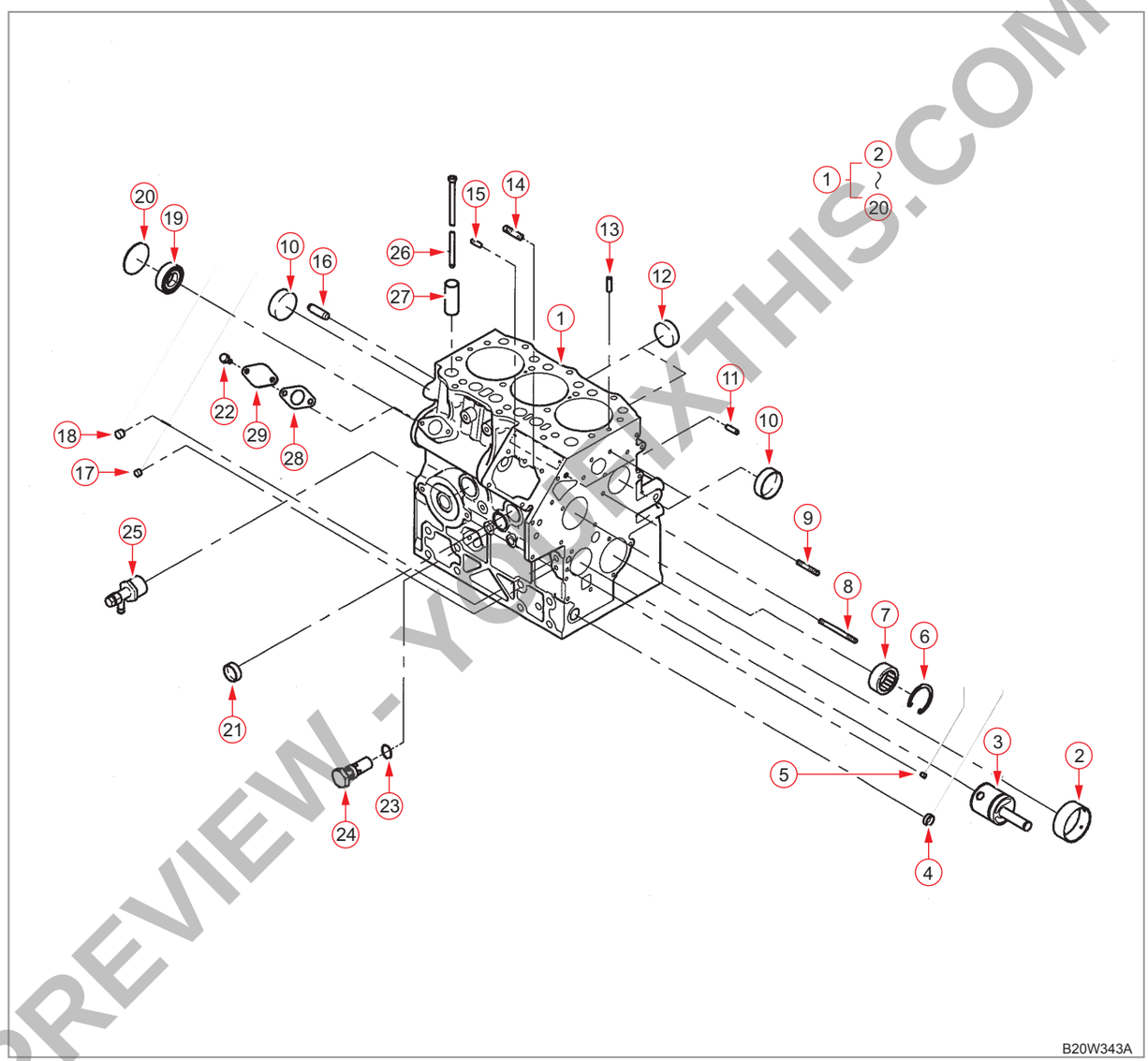
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4. EXPLODED VIEW OF ENGINE

REMARK

The part numbers and shapes of the following components are subject to change without notice for improvement of the product. If necessary, refer to the DAEDONG electronic manual, DEMSS.

4.1 F101 CYLNDER BLOCK



COMPONENTS

(1) Cylinder block compl(110101690)
(2) Bush : S. T. D(98517592)
(3) Idle gear shaft compl(165296142)
(4) Sealing cap(064210015)
(5) Blank plug(98466050)
(6) Snap ring(036509005)
(7) Needle bearing(042303015)
(8) Stud bolt(012110660)
(9) Stud bolt(012110635)
(10) SeaSection 1ling cap(064209055)
(11) Dowel pin(030500616)
(12) Sealing cap(064210035)
(13) Spring pin(030309005)
(14) Stud bolt(012110620)
(15) Dowel pin(030500512)
(16) Dowel pin(030501025)
(17) Blank plug(198466010)
(18) Blank plug(198466030)
(19) Ball bearing(040106203)
(20) Expansion plug(064100045)
(21) Sealing cap(064210025)
(22) Bolt(011310612)
(23) O-ring(052109078)
(24) Relief valve ass'y(140036220)
(25) Drain cock(198736270)
(26) Push rod compl(120456222)
(27) Tapet(120116160)
(28) Gasket(130996130)
(29) Cover(165206640)

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3. 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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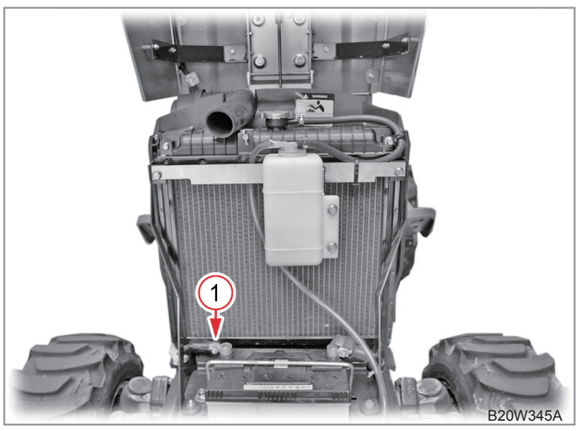
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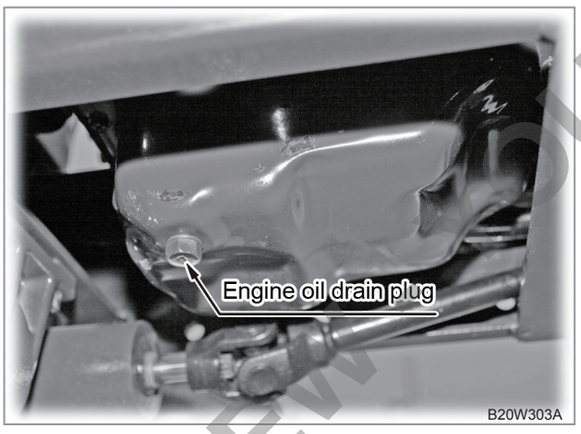
5. SERVICING

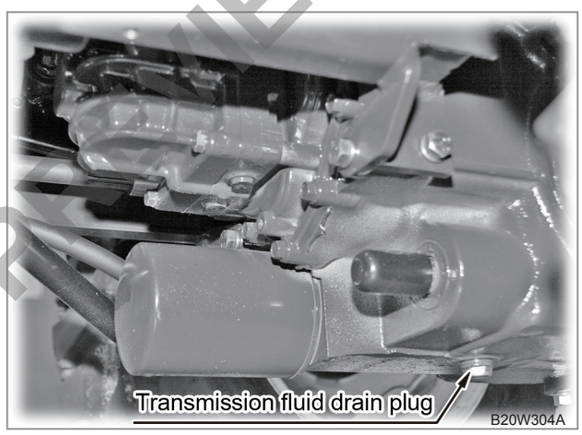
5.1 ENGINE REMOVAL

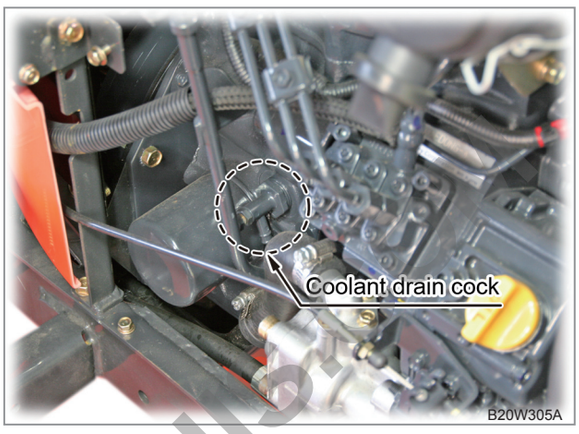
1. Park the tractor on firm level ground, stop the engine and apply the parking brake.

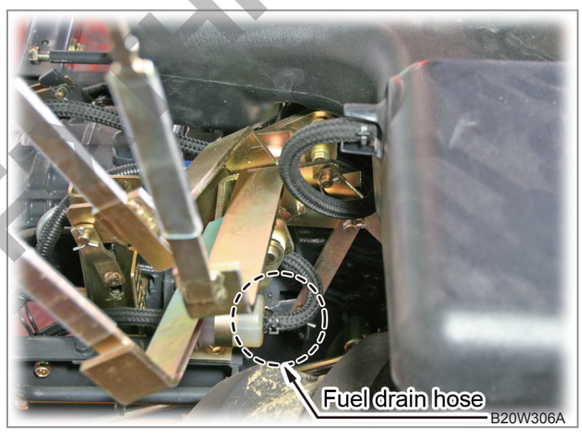


2. Open the hood and disconnect the negative battery cable (1)









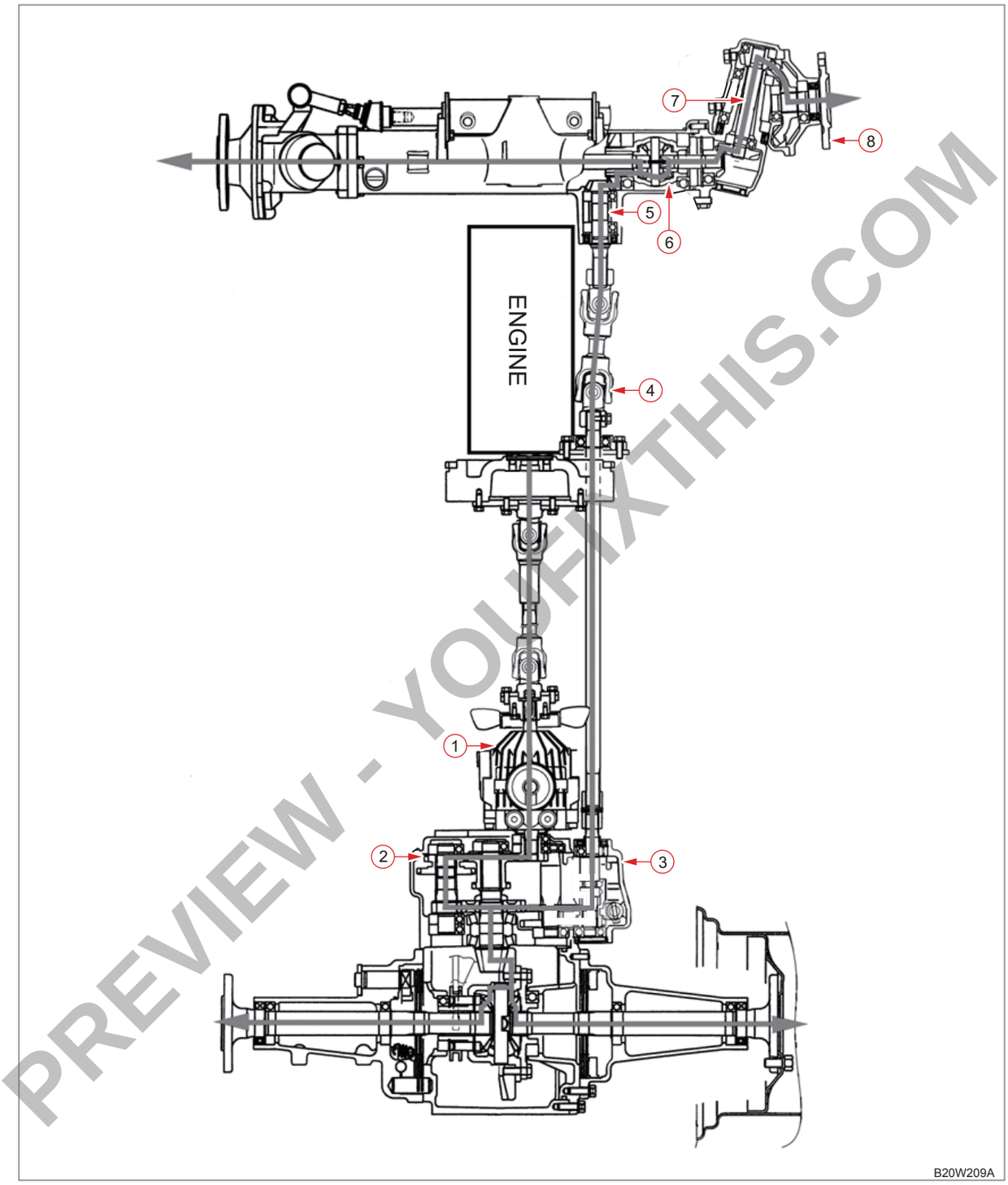
3. If necessary, drain coolant, engine oil, hydraulic oil and fuel.

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4. POWER FLOW



(1) HST
(2) Range slide gear
(3) FWD case
(4) FWD joint
(5) Sprial pinion
(6) Differential assembly
(7) Bevel gear case
(8) Front axle

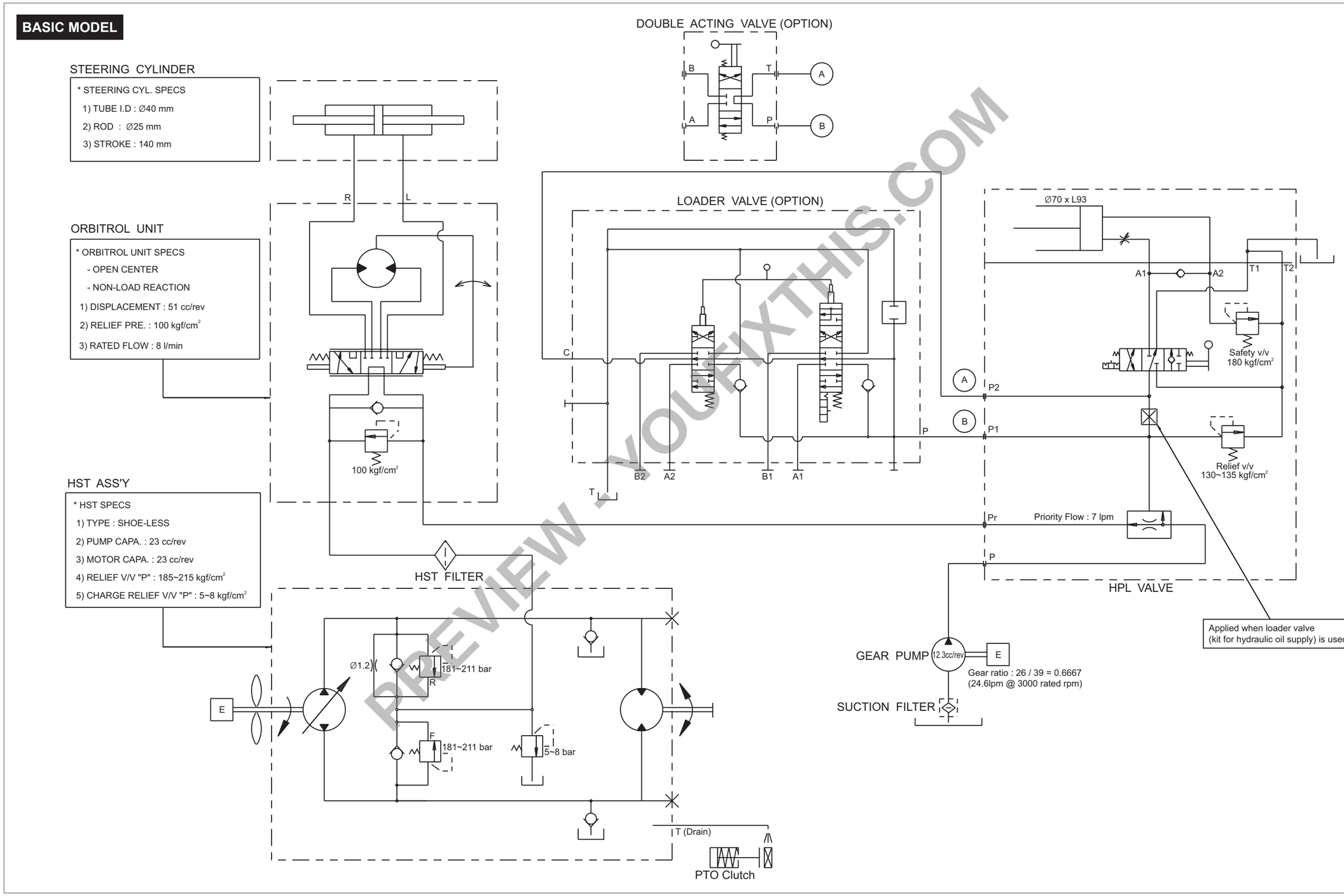
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2.1.2 CIRCUIT DIAGRAM

BASIC MODEL



B20WA01A

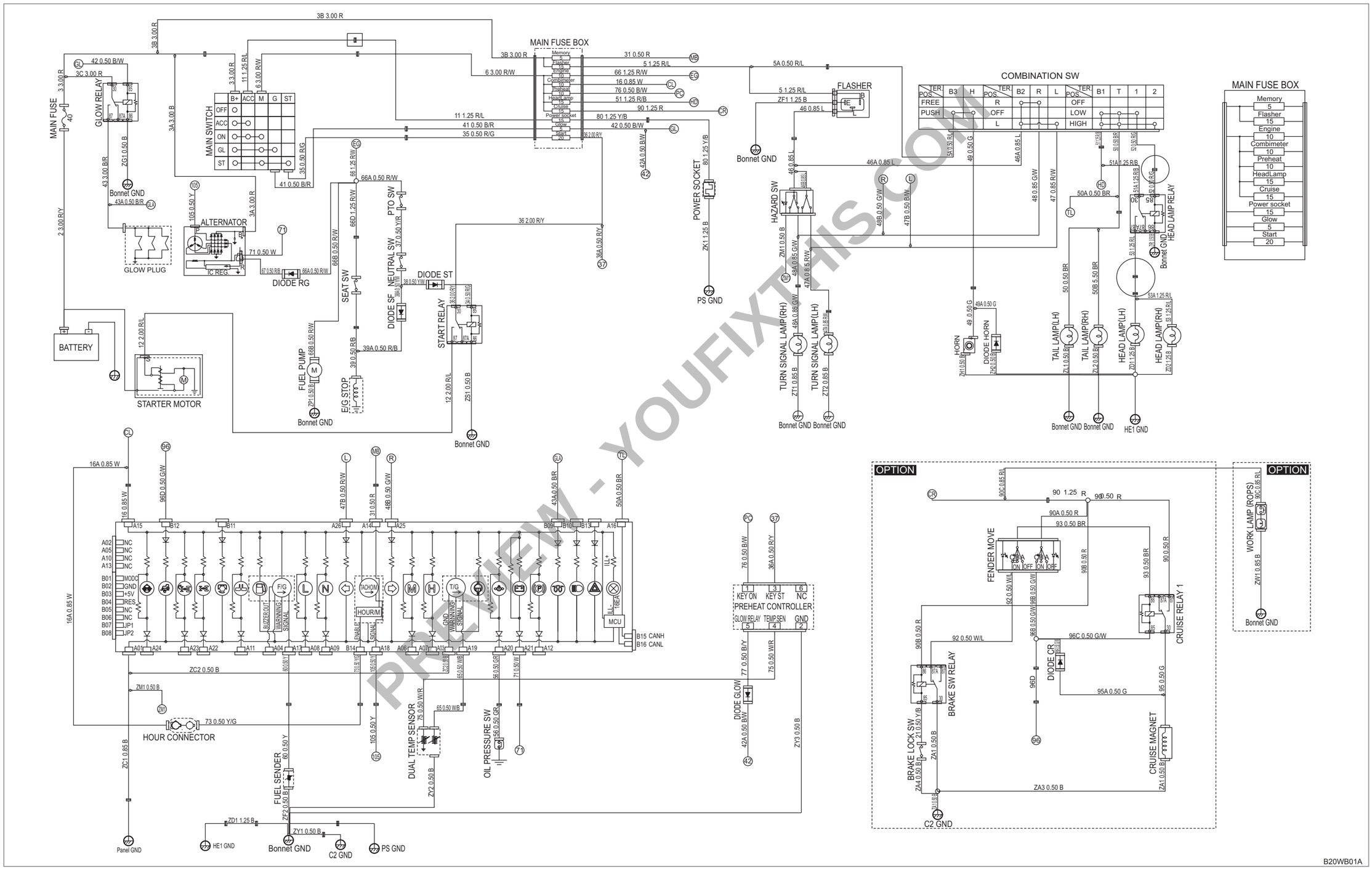
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2.2 OVERALL CIRCUIT DIAGRAM



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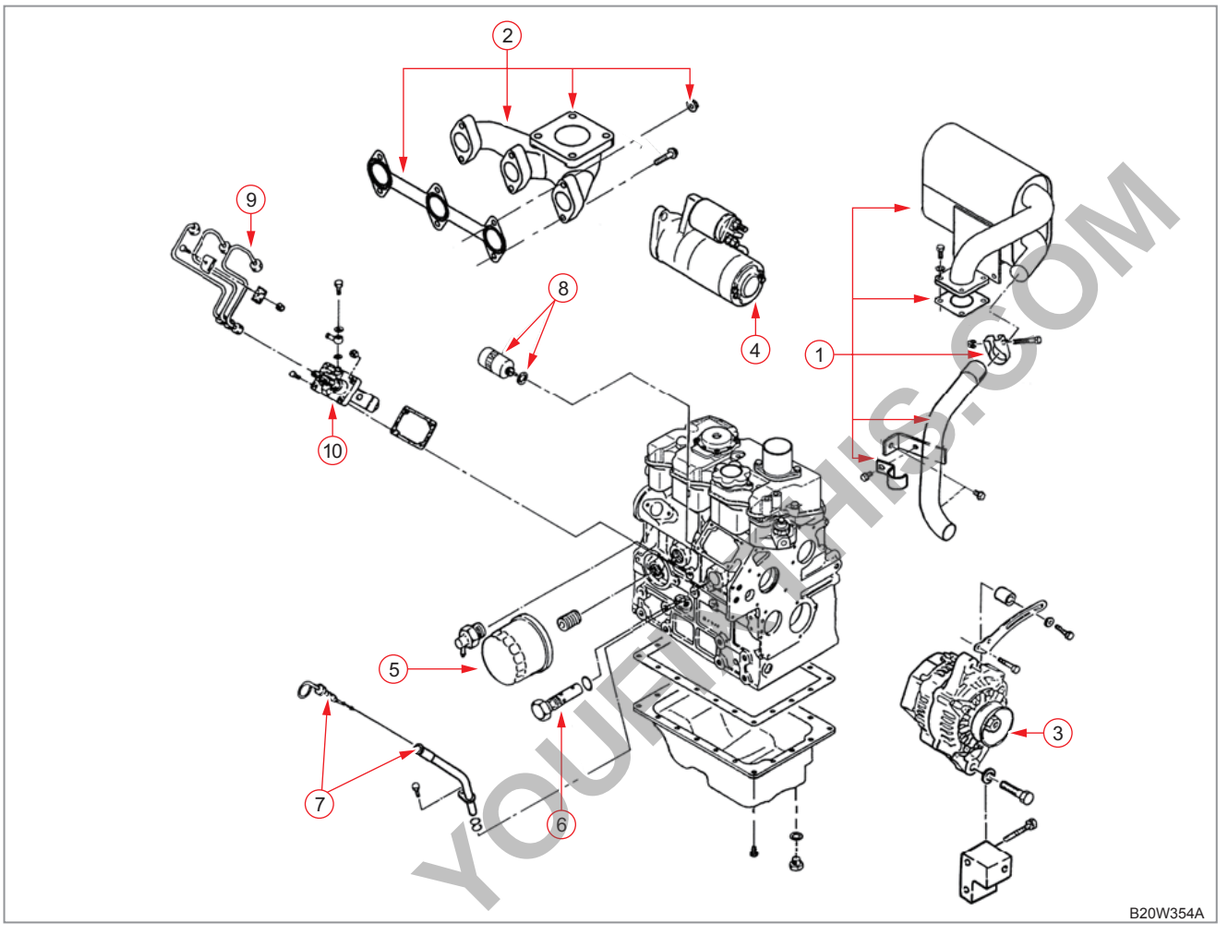
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5.2 ENGINE DISASSEMBLY ORDER

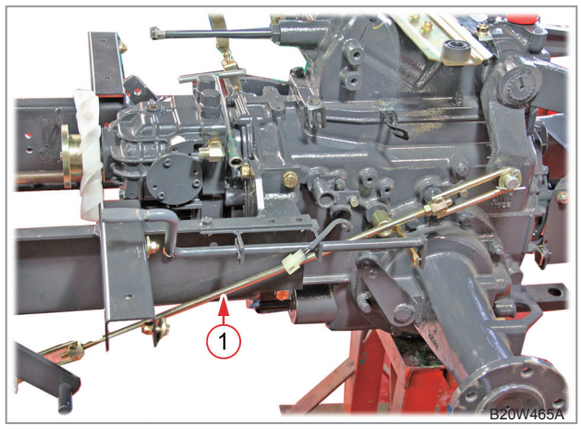


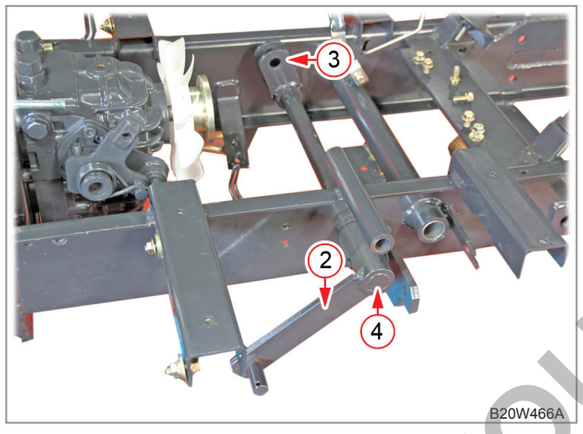
Order	Parts Name
1	Muffler · Gasket
2	Exhaust manifold · Gasket
3	Alternator
4	Starting motor
5	Oil filter
6	Relief valve
7	Oil level gauge · Gauge guide
8	Engine stop solenoid · Seal washer
9	Injection pipe
10	Injection pump **REMARK** **1. Remove the injection pipes and engine stop solenoid before remove the injection pump.** **2. Raise the injection pump while pushing control rack inside by a little finger through the stop solenoid mounting hole and remove the governor link from the control rack.** **3. Injection timing has been adjusted by the shims between injection pump and cylinder block. Take note of their thickness and number when removing the injection pump.**

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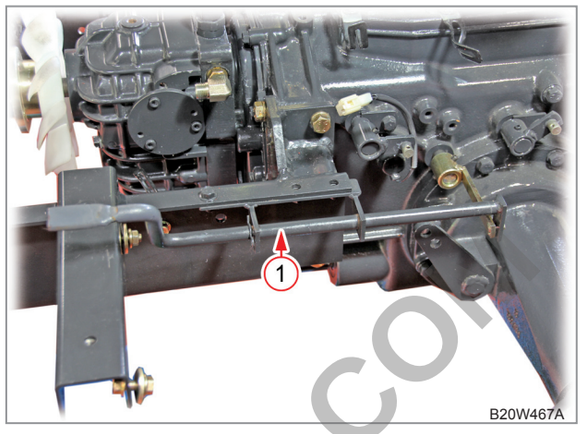
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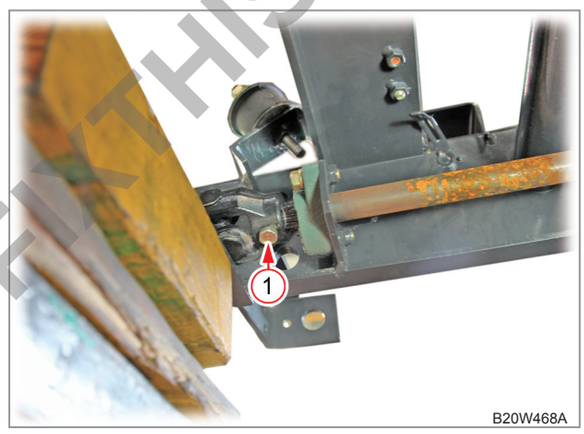


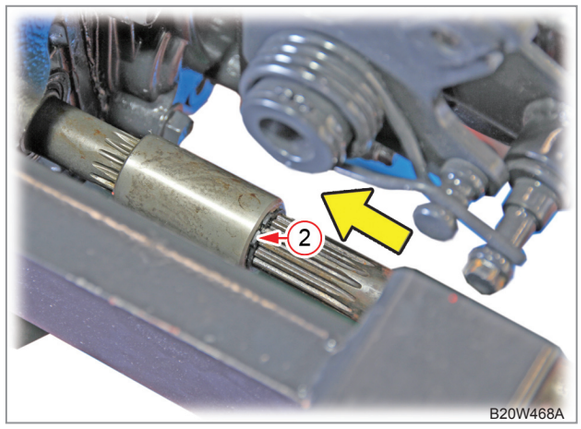


33. Disconnect the mower deck lift rod (1) and pull out the lift arm (2) and adjusting arm (3). Then, remove the lift arm shaft (4).



34. Remove the differential lock pedal (1).





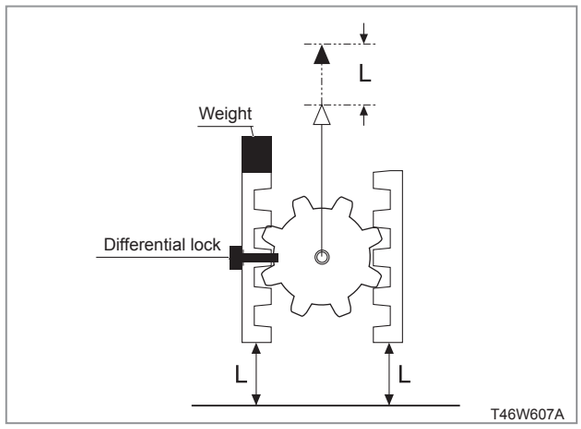
35. Unscrew the front wheel joint mounting bolt (1) and push the snap ring (2) of the propeller shaft to the back. Then, separate the front wheel joint by pulling the propeller shaft to the rear side.

Mounting bolt
Tightening torque .....22.5 ~ 28.4 Nm
2.3 ~ 2.9 kgf-m
16.6 ~ 20.9 lb-ft

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When one rack is fixed to the pinion and the pinion is lifted, the other rack is lifted in the same height (L) as shown in the figure on the left.

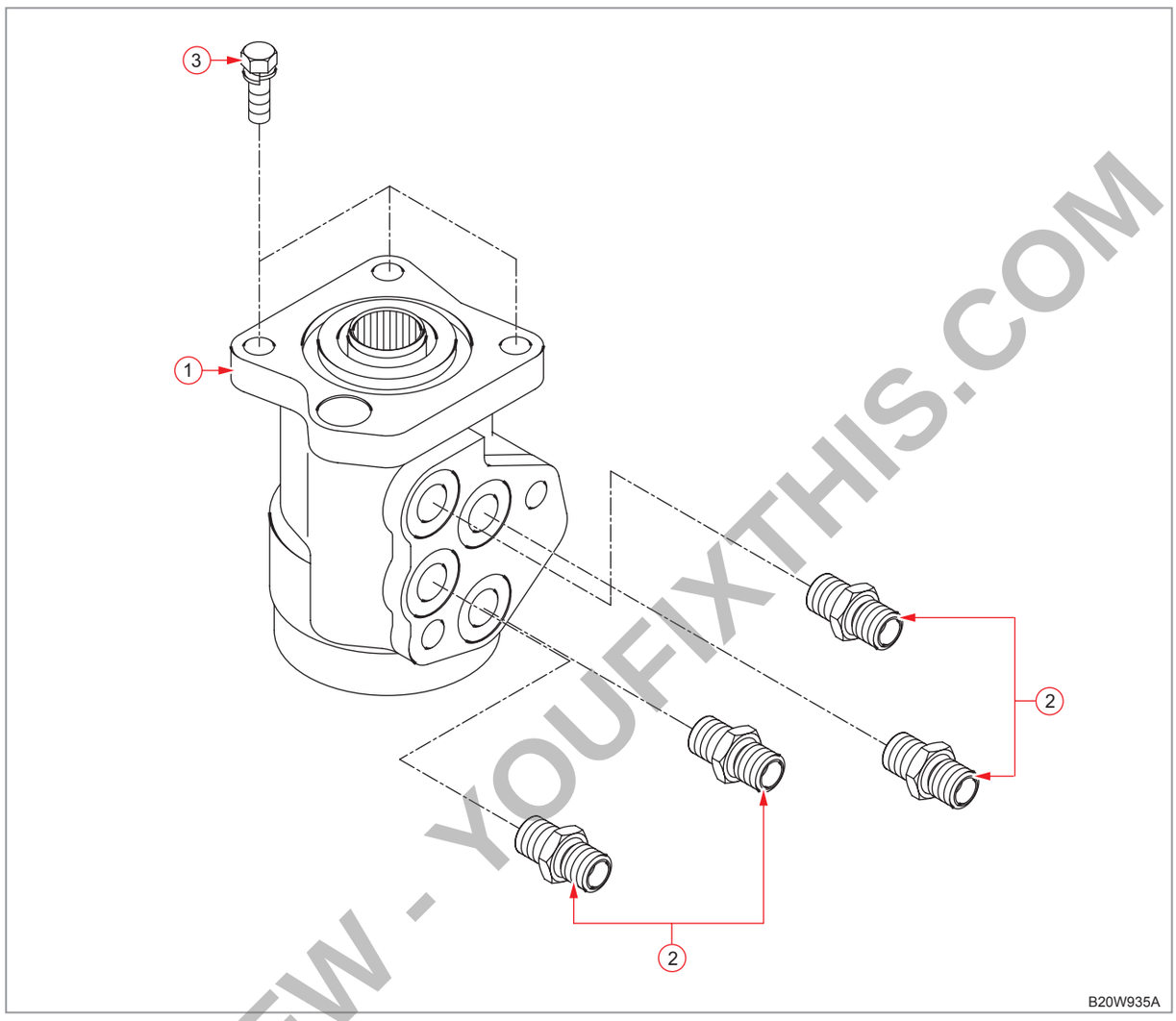
If the differential lock system is unnecessarily used on the road with sufficient friction, excessive load is applied to the differential side gears or the differential pinion and the internal gears or the components of the differential lock system can be damaged unless the tractor is moving straight forward.

Therefore, the steering wheel should be set to the middle position when using the differential lock system.

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5.3 G615 POWER STEERING UNIT



COMPONENTS

(1) Unit, power steering(T2555-36001) (2) Connection(T2555-36201) (3) Bolt, washer(01133-51020)

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CS2410(US) CS2610(EU/AU) ELECTRIC SYSTEM CHAPTER 11

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