Operator's Manual

Sc Series Sub-Compact Tractor

Sc2400

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2. Safety-Alert Symbols



The safety-alert symbols appear with most safety statements. It means attention, become alert, your safety is involved!
Please read and strictly observe the message that follows the safety-alert symbols.

⚠DANGER

Indicates a hazardous situation which, if not avoided, *will* result in death or serious injury.

⚠WARNING

Indicates a hazardous situation which, if not avoided, *could* result in death or serious injury.

⚠CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the machine, personal property and/or the environment or cause the equipment to operate improperly.

IMPORTANT: Means that implement or property damage could occur if instructions are ignored.

NOTE: Provides useful information.



WARNING: READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR TRACTOR. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.



WARNING: The engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



DANGER: Your tractor was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. To help prevent accidents, read and take the following precautions before operating this tractor. Failure to observe the following safety instructions could result in serious injury or death.

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3. SPECIFICATIONS

1. Specifications Table

Model				Sc2400
Power Take Off (PTO) Power			hp (kW)	16.5 (12.3)
Engine	Maker			YANMAR
	Model			3TNV72
	Type			Indirect Injection, Vertical, Water-Cooled, 4 Cycle Diesel
	Number of Cylinders			3
	Bore and Stroke		in. (mm)	2.834 × 2.913 (72 × 74)
	Total Displacement		cu. in. (L)	55.1 (0.903)
	Gross Power		hp (kW)	24.0 (17.9)
	Net Power		hp (kW)	20.4 (15.0)
	Rated Revolution		rpm	3300
	High Idle Speed		rpm	3470
	Low Idle Speed		rpm	1150
	Maximum Torque		ft•lb (N•m)	38.3 (52.3)
	Battery			12V BP24 , CCA: 540 A
	Fuel			Diesel Fuel No.1-D , No.2-D
Capacities	Fuel Tank		US gal (L)	Approximately 5.8 (22)
	Engine Oil		US qt (L)	Approximately 2.5 (2.4)
	Engine Coolant		US qt (L)	Approximately 3.4 (3.2)
	Transmission Oil		US gal (L)	Approximately 2.0 (7.5)
Dimensions	Overall Length (without 3-Point Hitch)		in. (mm)	82.7 (2100)
	Overall Length (with 3P)		in. (mm)	95.5 (2425)
	Overall Width (with R4 Tires)		in. (mm)	44.5 (1130)
	Overall Height (with Roll-Over Protective Structure (ROPS), R4 Tires)		in. (mm)	71.5 (1817)
	Overall Height (with R4 Tires) (Top of Steering Wheel)		in. (mm)	49.9 (1267)
	Wheel Base		in. (mm)	55.1 (1400)
	Min. Ground Clearance (with R4 Tires)		in. (mm)	7.5 (190)
	Tread (with R4)	Front	in. (mm)	34.6 (879)
		Rear	in. (mm)	32.2 (820)
Weight (with Roll-Over Protective Structure (ROPS) and R4 Tires)			lb (kg)	1279 (580)

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13. MAINTENANCE

●For the checkpoints (✔) listed below, check and service at the intervals indicated in the table.
●For the inspection and maintenance procedures, see 15 “PERIODIC SERVICE”.

1. Maintenance Check List

No	Topic		Time	Service Intervals																							After Purchase	
				Hours																								
				Daily	5	15	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1 year	2 years
1	Refueling the fuel tank		Daily	✔																								
2	Engine oil level	Check	Daily	✔																								
	Engine oil	Change	50/100hr and Every 100hr				✔	✔		✔		✔		✔		✔		✔		✔		✔		✔		✔		
3	Engine oil filter	Replace	50/200hr and Every 200hr				✔			✔				✔				✔				✔				✔		
4	Transmission oil level	Check	Daily	✔																								
	Transmission oil	Change	50/300hr and Every 300hr				✔					✔						✔						✔				
5	Transmission oil filter	Replace	50/300hr and Every 300hr				✔					✔						✔						✔				
6	Front axle case oil level	Check	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	Front axle case oil	Change	Every 500hr													✔										✔		
7	Front axle pivot	Adjust	Daily	✔																								
8	Fuel / water separator	Check	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
		Clean	Every 100hr					✔		✔		✔		✔				✔		✔		✔		✔		✔		
		Replace	Every 500hr													✔										✔		
9	Fuel filter	Replace	Every 500hr													✔										✔		
10	Air cleaner element	Clean	Every 100hr					✔		✔		✔		✔		✔		✔		✔		✔		✔		✔		
		Replace	Every 1 year																								✔	
11	Fan belt	Adjust	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
12	Radiator hose and clamp	Check	Daily	✔																								
		Replace	Every 2 years																									✔
13	Radiator cooling fins / screen	Clean	Daily	✔																								
14	Front grille screen	Clean	Daily	✔																								
15	Cooling system	Check	Daily	✔																								
		Flush	Every 1000hr or a year																						✔	✔		
16	Coolant	Change	Every 1000hr or a year																						✔	✔		
17	Fuel line	Check	Daily	✔																								
		Replace	Every 2 years																									✔
18	Intake air hose	Check	Daily	✔																								
		Replace	Every 2 years																									✔
19	Safety interlock system	Check	Daily	✔																								
20	Greasing and lubricating		Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
21	Brake	Check	Daily	✔																								

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17. TROUBLESHOOTING

1. How to Use the Troubleshooting Table

The troubleshooting table given below is intended to provide a simple guide. If any fault, failure or a problem that requires repair work has occurred, contact your local Cub Cadet Yanmar dealer for technical assistance.

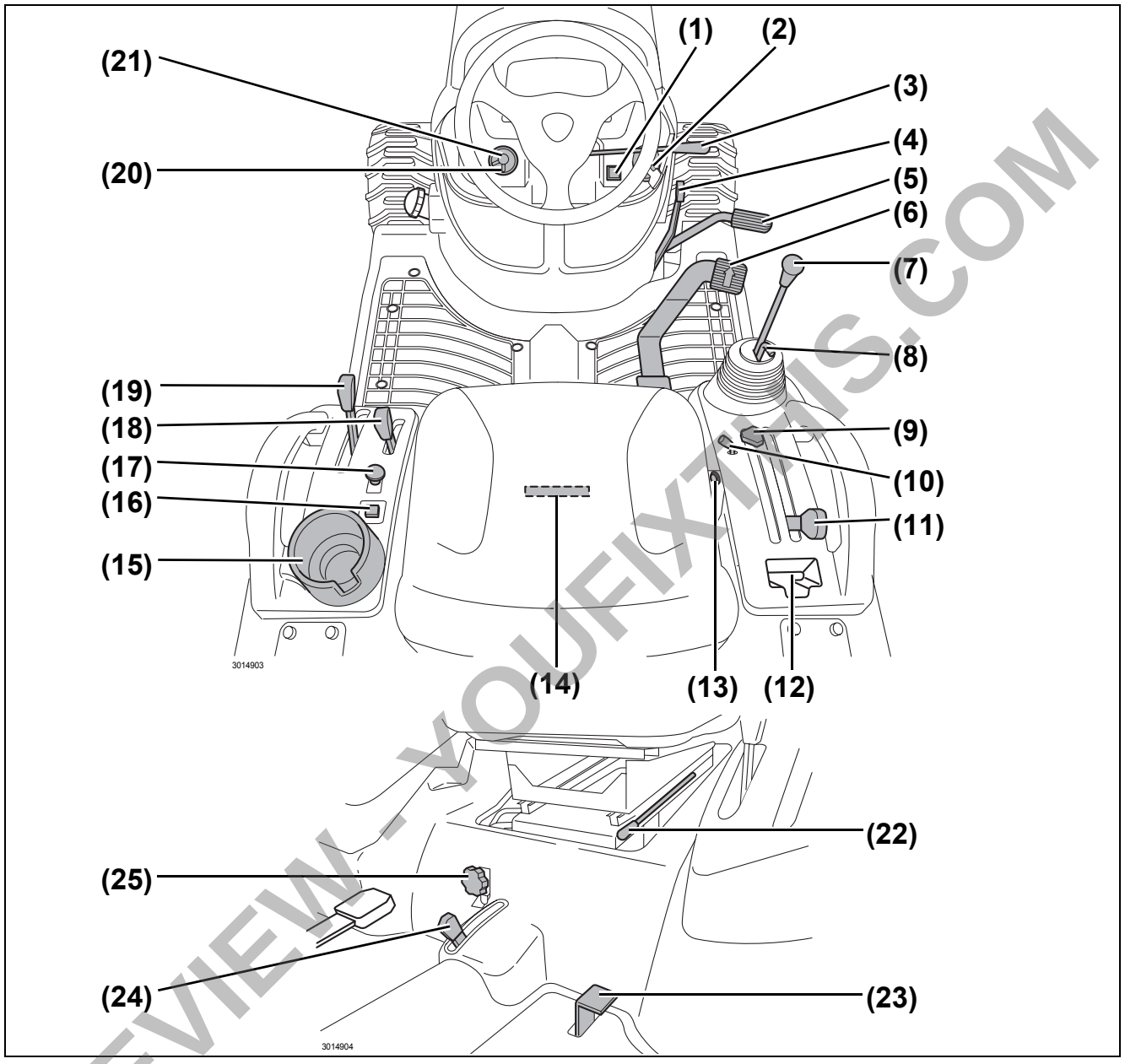
1. Engine

	Symptom	Cause	Remedy
1	**Engine does not start or engine starts, but stalls immediately.**	● Diesel fuel is not flowing to the engine.	• Check that fuel is in the fuel tank. Refuel as necessary.
			• Check if the fuel filter is clogged. Replace the clogged filter.
		● Air is trapped in the fuel.	• Check the fuel line for looseness. Retighten any loose connection.
		● Water is trapped in the fuel.	• Remove water from the fuel. Refill the diesel fuel.
		● In cold weather, the engine oil viscosity is excessively high, and this causes greater resistance. As a result, the engine speed does not increase.	• Use a less viscous engine oil. (Be sure to change to a more viscous engine oil in summer.) (Consult your local Cub Cadet Yanmar dealer.)
		● The power of the battery is too low and the starter fails to accelerate to a speed sufficient for starting the engine.	• Clean the battery posts and terminals, then measure the voltage on the battery. If the voltage is 11 V or lower, replace the battery with a new one.
2	**Though the engine has started, it fails to run smoothly or it is not powerful.**	● Stale diesel fuel (owing to prolonged storage)	• Replace the diesel fuel.
		● Contaminated diesel fuel	• Replace the diesel fuel.
		● Clogged air cleaner	• Replace the air cleaner.
		● The fuel shut-off valve is not in the fully OPEN position.	• Fully open the fuel shut-off valve.
3	**The engine has successfully started but suddenly stopped.**	● No diesel fuel	• Refuel.
		● The fuel shut-off valve is not in the OPEN position.	• Open the fuel shut-off valve.
4	**Blackish exhaust**	● Poor quality of diesel fuel	• Replace the diesel fuel and fuel filter.
		● Too much engine oil	• Drain the engine oil to the specified level.
		● Clogged air filter	• Clean or replace the air filter.
5	**Pale bluish exhaust**	● Failed injection nozzle	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Poor quality of diesel fuel	• Replace the diesel fuel and fuel filter.

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2. Operator Station Controls



(1) Hazard lights button switch
(2) Starter key switch
(3) Throttle control lever
(4) Parking brake lever
(5) Brake pedal
(6) Forward and reverse drive pedal
(7) Implement control lever (Option)
(8) Implement lock lever (Option)
(9) Position stop knob
(10) Cruise control lever
(11) 3-point hitch control / cutting height adjustment lever
(12) Storage compartment
(13) 12V DC outlet
(14) Hydro Static Transmission (HST) pressure release lever
(15) Cup holder
(16) Reverse - override - switch
(17) Power Take Off (PTO) switch
(18) Range shift lever
(19) Mid- / Rear-Power Take Off (PTO) select lever
(20) Turn signal switch
(21) Headlight / work light switch
(22) Seat adjustment lever
(23) Differential lock foot pedal
(24) 4-wheel drive lever
(25) Hydraulic flow control / stop knob

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7. OPERATING THE ENGINE

⚠DANGER



NEVER run or idle the engine in a confined area that is poorly ventilated or not ventilated at all. The engine emits carbon monoxide as that is colorless, odorless and can cause death.

⚠WARNING

ALWAYS remain seated in the operator's station when starting the engine or actuating the levers or controls.

Always ensure that your foot is removed from the forward and reverse pedal, the parking brake is engaged and Power Take Off (PTO) switch is in the OFF position before the engine is started.

While operating the tractor, make sure to keep the seat belt fastened with the Roll-Over Protective Structure (ROPS) equipped. This will reduce the possibility of injury or death in the event of an accident such as an overturn or roll-over.

Start the engine of your tractor only with the starter key switch. NEVER attempt to start the tractor engine by short-circuiting across its terminals with a jumper or by bypassing the safety start switch.

Before operation, make sure that all the safety features are functioning correctly. Make corrections as necessary.

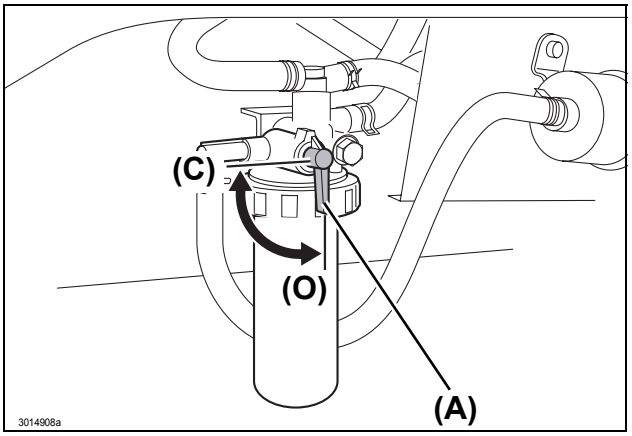
1. Starting the Engine

1. Open the fuel shut-off valve.

■ Opening / Closing the Fuel Shut-Off Valve

- To open the valve, turn the valve lever to the vertical position.
- To close the valve, turn the valve lever to the horizontal position.

(A) Valve lever
(O) Open
(C) Close



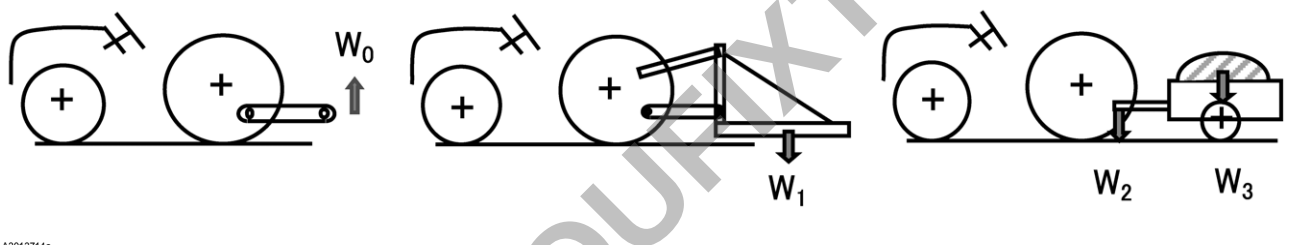
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4. IMPLEMENT CAPACITIES

The Cub Cadet Yanmar tractor has been carefully tested in the configuration equipped with implements sold or approved by Cub Cadet Yanmar and has proved to perform properly. Do not use any implement that has not been sold or recommended by a Cub Cadet Yanmar dealer, or that fails to satisfy the specified values given below. Never mount an implement that is not approved for the Cub Cadet Yanmar tractor. Using unapproved implements could result in malfunction, failure, and damage to the tractor and/or implement, and increase the possibility of injury to the operator or other people. The Cub Cadet Yanmar warranty does not cover any malfunction or failure that results from use of an unapproved implement.

	24in. Behind Lift Point Maximum Lifting Capacity	Implement Weight	Maximum Vertical Hitch Load	Maximum Towing Capacity
	W_0	W_1	W_2	W_3
lb	661	As specified in the list below.	331	661
kg	300		150	300



Implement		Remarks	Unit	Amount	
Front - End Loader		Maximum Lift Capacity (at Pivot)	lb (kg)	700	317
		Maximum Overhang (Pivot - Front Tire Center)	in. (mm)	40	1022
		Maximum Weight	lb (kg)	441	200
		Maximum Oil Pressure	psi (MPa)	1885	13
Mower	Mid - Mount	Maximum Cutting Width	in. (mm)	60	1524
		Maximum Weight	lb (kg)	254	115
	Rear - Mount	Maximum Cutting Width	in. (mm)	48	1219
		Maximum Weight	lb (kg)	351	159
Rotary Tiller		Maximum Tilling Width	in. (mm)	42	1067
		Maximum Weight	lb (kg)	342	155
Box Scraper (Box Blade)		Maximum Cutting Width	in. (mm)	48	1219
		Maximum Weight	lb (kg)	254	115
Rear Blade		Maximum Cutting Width	in. (mm)	60	1524
		Maximum Weight	lb (kg)	176	80

NOTE:

●Backhoes cannot be attached.

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■ Inflation Pressure

⚠WARNING

- **ALWAYS keep the tires inflated to the correct pressure. NEVER exceed the recommended inflation pressure specified in this *Operator's Manual*.**

Inflation pressure gradually reduces as time elapses. Check the pressure of each tire before starting the day's operation and inflate the tires as necessary to the recommended pressures. If the tire pressures significantly decrease though the tires are correctly inflated every day, immediately request your local Cub Cadet Yanmar dealer to inspect or replace the problem tire(s).
Before loader work, make sure to check the tire pressure and, if necessary, inflate the tire(s) to the recommended pressure.
For the appropriate inflation pressure, refer to the following table:

	Tire size	Inflation pressure (psi(kgf/cm^2))	Inflation pressure when an implement such as the front loader has been attached to the front of the machine (psi(kgf/cm^2))
Front	18 × 8.50 - 10	20 (1.4)	22 (1.5)
Rear	26 × 12.00 - 12	20 (1.4)	22 (1.5)

■ Wheel Bolt Tightening Torque

⚠WARNING

Avoid injury:

- **ALWAYS keep the wheel bolts tightening to the specified torque.**
- **With the wheel bolts loosened, do not drive the tractor.**

Before starting day's operation, check tightening torque of each of the tire wheel bolts and, if necessary, retighten to the specified torque. For the specified torque, refer to the following table:

Front wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)
Rear wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)

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■ Cleaning the Air Cleaner Element

⚠CAUTION

Be careful to avoid injury:

- **Touching hot surfaces can lead to skin burn. If the engine has been running, the engine and its components will remain hot. Before servicing, allow the engine to cool off.**

IMPORTANT: Avoid damage.

A damaged cleaner element may fail to catch dirt and dust, and contaminants can enter the engine:

- NEVER wash the air cleaner element.
- NEVER attempt to clean the air cleaner element by tapping against another object.
- ALWAYS replace the air cleaner element when it is contaminated, damaged or the seal is cracked.

1. Servicing the Air Cleaner Element

1. Park the tractor safely and securely.
2. Allow the engine to cool off.
3. Open the hood.
4. Release the two latches that secure the canister cover to the air cleaner canister.

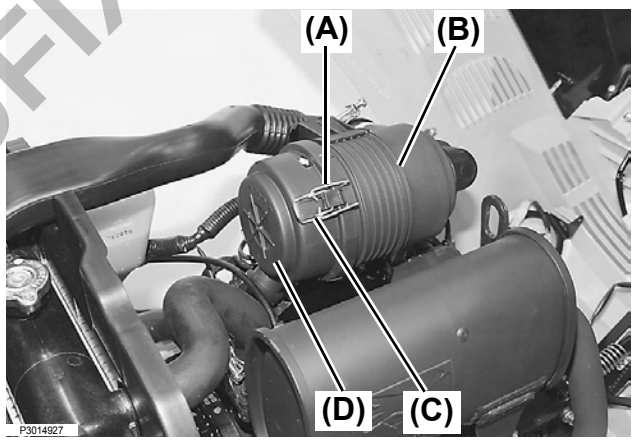
⚠CAUTION

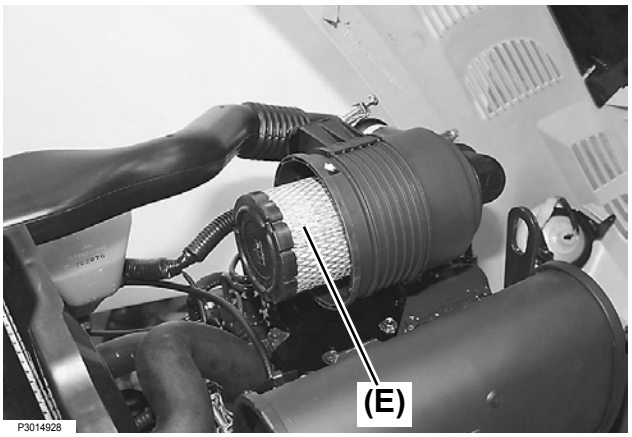
- **When removing the air cleaner canister cover or the air cleaner element, be careful not to injure your hand.**

5. While holding down the electric cable, unlock the latch hooks from the air cleaner canister and remove the canister cover.

(A) Latch hook
(B) Air cleaner canister
(C) Latches
(D) Air cleaner canister cover
(E) Primary element

6. Slightly raise the bottom of the canister.





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No	Topic		Time	Service Intervals																								After Purchase	
				Hours																									
				Daily	5	15	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1 year	2 years
22	Seat belt & Roll-Over Protective Structure (ROPS)	Check	Daily	✔																								
23	Wheel bolt torque	Check	Daily	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
24	Inflation pressure	Check	Daily	✔																								
25	Toe-in	Adjust	Every 200hr							✔				✔				✔				✔				✔		
26	Engine valve clearance	Adjust	Every 1000hr																							✔		
27	Fuel injection nozzle injection pressure	Check	Every 1000hr																							✔		
28	Fuel injection pump	Check	Every 1000hr																							✔		
29	Light bulb	Check	Daily	✔																								
30	Hydraulic hose	Check	Daily	✔																								
		Replace	Every 2 years																									✔

For assistance in periodic maintenance procedures, contact your local Cub Cadet Yanmar dealer.

2. Lubricants

No.	Locations	Capacities	Lubricants	
1	Fuel	Approximately 5.8 US gal (22 L)	No.2-D diesel fuel No.1-D diesel fuel if temperature is below 14°F (–10°C)	
2	Coolant	Approximately 3.4 US qt (3.2 L)	High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals) Coolant Mixture Ratio Distilled Water 50% : Antifreeze 50%	
3	Engine crankcase (with filter)	Approximately 2.5 US qt (2.4 L)	API Service Classifications CF or higher SAE 10W-30 or SAE 10W-40	
4	Transmission case	Approximately 2.0 US gal (7.5 L)	Cub Cadet Hydraulic / Transmission Fluid	
5	Front axle case	Approximately 2.6 US qt (2.5 L)	Cub Cadet GEAR LUBE or SAE 80W-90 gear oil	
6	Greasing	No. of greasing points	Capacity	Type of grease
	Drive pedal	1	Until grease overflows	Cub Cadet 251H EP Grease or General all purpose grease NLGI grade No.2

(Specifications and design are subject to change without prior notice for improvement.)

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