

SHOP MANUAL

KOMATSU **155-4 SERIES** **DIESEL ENGINE**

LIST OF REVISED PAGES

The affected pages are indicated by the use of the following marks. It is requested that necessary actions be taken to these pages according to the table below.

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Pages having no marks are those previously revised or made additions.

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IMPORTANT SAFETY NOTICE

Proper service and repair is extremely important for the safe operation of your machine. The service and repair techniques recommended by Komatsu and described in this manual are both effective and safe methods of operation. Some of these operations require the use of tools specially designed by Komatsu for the purpose.

To prevent injury to workers, the symbols  and  are used to mark safety precautions in this manual. The cautions accompanying these symbols should always be followed carefully. If any dangerous situation arises or may possibly arise, first consider safety, and take the necessary actions to deal with the situation.



SAFETY

GENERAL PRECAUTIONS

Mistakes in operation are extremely dangerous. Read the Operation and Maintenance Manual carefully BEFORE operating the machine.

1. Before carrying out any greasing or repairs, read all the precautions given on the decals which are fixed to the machine.
2. When carrying out any operation, always wear safety shoes and helmet. Do not wear loose work clothes, or clothes with buttons missing.
 - Always wear safety glasses when hitting parts with a hammer.
 - Always wear safety glasses when grinding parts with a grinder, etc.
3. If welding repairs are needed, always have a trained, experienced welder carry out the work. When carrying out welding work, always wear welding gloves, apron, glasses, cap and other clothes suited for welding work.
4. When carrying out any operation with two or more workers, always agree on the operating procedure before starting. Always inform your fellow workers before starting any step of the operation. Before starting work, hang UNDER REPAIR signs on the controls in the operator's compartment.
5. Keep all tools in good condition and learn the correct way to use them.
6. Decide a place in the repair workshop to keep tools and removed parts. Always keep the tools and parts in their correct places. Always keep the work area clean and make sure that there is no dirt or oil on the floor. Smoke only in the areas provided for smoking. Never smoke while working.

PREPARATIONS FOR WORK

7. Before adding oil or making any repairs, park the machine on hard, level ground, and block the wheels or tracks to prevent the machine from moving.
8. Before starting work, lower blade, ripper, bucket or any other work equipment to the ground. If this is not possible, insert the safety pin or use blocks to prevent the work equipment from falling. In addition, be sure to lock all the control levers and hang warning signs on them.
9. When disassembling or assembling, support the machine with blocks, jacks or stands before starting work.
10. Remove all mud and oil from the steps or other places used to get on and off the machine. Always use the handrails, ladders or steps when getting on or off the machine. Never jump on or off the machine. If it is impossible to use the handrails, ladders or steps, use a stand to provide safe footing.



ELECTRIC WIRE CODE

In the wiring diagrams, various colors and symbols are employed to indicate the thickness of wires. This wire code table will help you understand WIRING DIAGRAMS.

Example: 5WB indicates a cable having a nominal number 5 and white coating with black stripe.

CLASSIFICATION BY THICKNESS

Nominal number	Copper wire			Cable O.D. (mm)	Current rating (A)	Applicable circuit
	Number strands	Dia. of strands (mm)	Cross section (mm ²)			
0.85	11	0.32	0.88	2.4	12	Starting, lighting, signal etc.
2	26	0.32	2.09	3.1	20	Lighting, signal etc.
5	65	0.32	5.23	4.6	37	Charging and signal
15	84	0.45	13.36	7.0	59	Starting (Glow plug)
40	85	0.80	42.73	11.4	135	Starting
60	127	0.80	63.84	13.6	178	Starting
100	217	0.80	109.1	17.6	230	Starting

CLASSIFICATION BY COLOR AND CODE

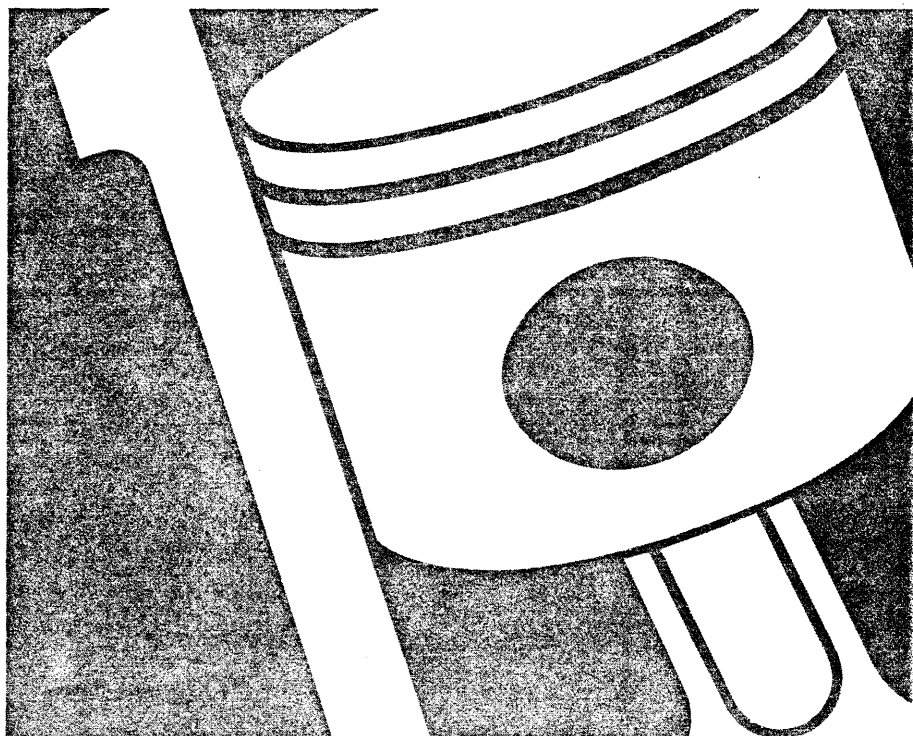
Priority	Circuits		Charging	Ground	Starting	Lighting	Instrument	Signal	Other
	Classification	Code							
1	Primary	Code	W	B	B	R	Y	G	L
		Color	White	Black	Black	Red	Yellow	Green	Blue
2	Auxiliary	Code	WR	—	BW	RW	YR	GW	LW
		Color	White & Red	—	Black & White	Red & White	Yellow & Red	Green & White	Blue & White
3	Auxiliary	Code	WB	—	BY	RB	YB	GR	LR
		Color	White & Black	—	Black & Yellow	Red & Black	Yellow & Black	Green & Red	Blue & Red
4	Auxiliary	Code	WL	—	BR	RY	YG	GY	LY
		Color	White & Blue	—	Black & Red	Red & Yellow	Yellow & Green	Green & Yellow	Blue & Yellow
5	Auxiliary	Code	WG	—	—	RG	YL	(GB)	(LB)
		Color	White & Green	—	—	Red & Green	Yellow & Blue	(Green & Black)	(Blue & Black)
6	Auxiliary	Code	—	—	—	RL	YW	(GL)	—
		Color	—	—	—	Red & Blue	Yellow & White	(Green & Blue)	—

SHOP MANUAL

155-4 SERIES

Engine Serial No. 10011 and up

ENGINE **01** GENERAL

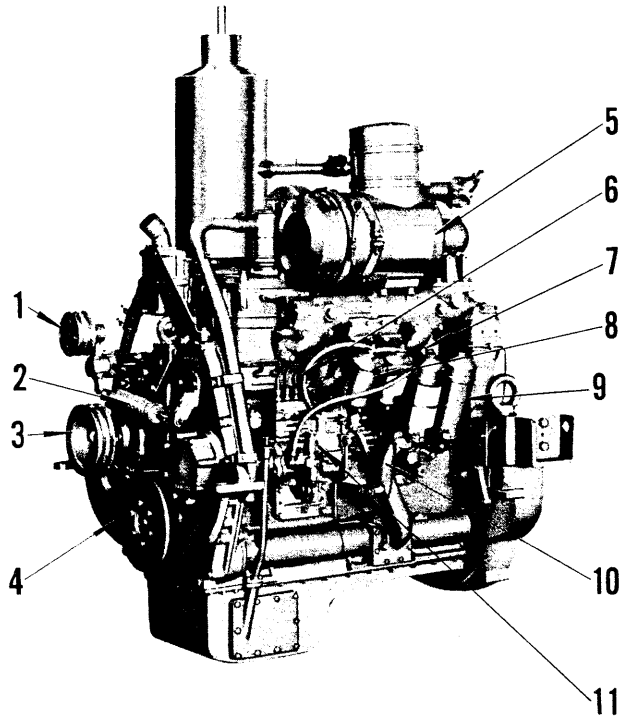


GENERAL

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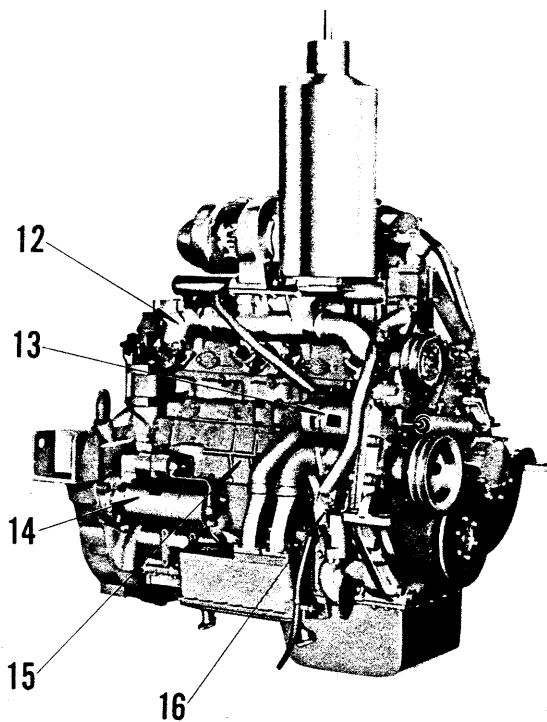
GENERAL VIEW

S4D155-4



- 1. Tension pulley
- 2. Tension spring
- 3. Accessory drive pulley
- 4. Front support
- 5. Air cleaner
- 6. Fuel injection pipe
- 7. Cam shaft lubrication pipe
- 8. Fuel filter
- 9. Fullflow filter
- 10. Oil filler
- 11. Fuel injection pump

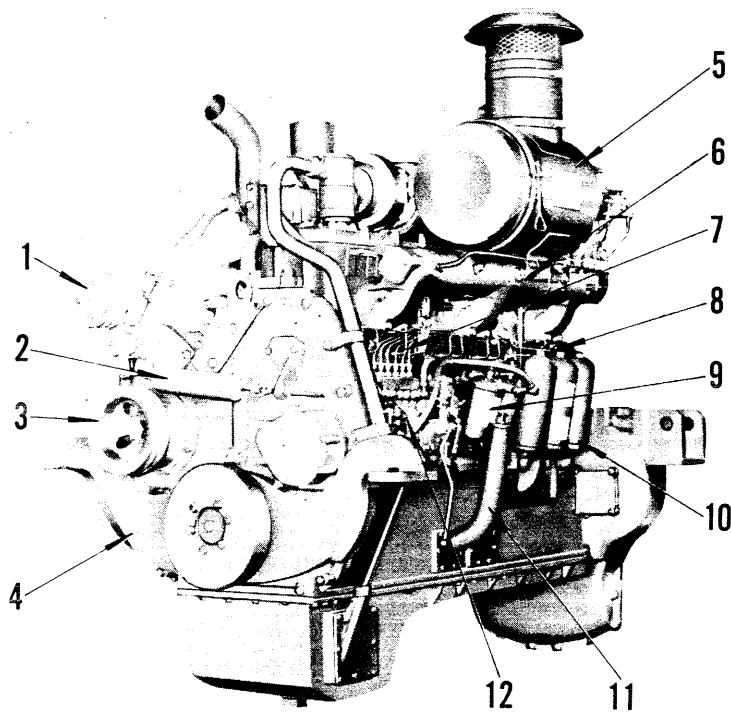
6127P001



- 12. Exhaust manifold
- 13. Generator
- 14. Starting motor
- 15. Oil cooler
- 16. Water pump

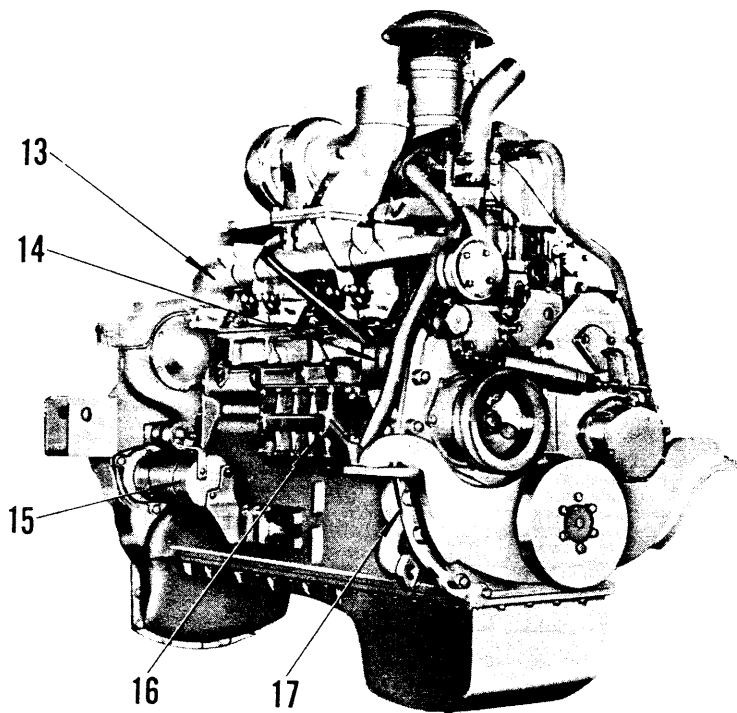
6127P002

S6D155-4 (WITH STARTING MOTOR)
ENGINE SERIAL No. 10011 ~ 19999



- 1. Tension pulley
- 2. Tension spring
- 3. Accessory drive pulley
- 4. Front support
- 5. Air cleaner
- 6. Thermostat
- 7. Fuel pipe
- 8. Cam lubricating pipe
- 9. Fuel filter
- 10. Fullflow filter
- 11. Oil filler
- 12. Fuel injection pump

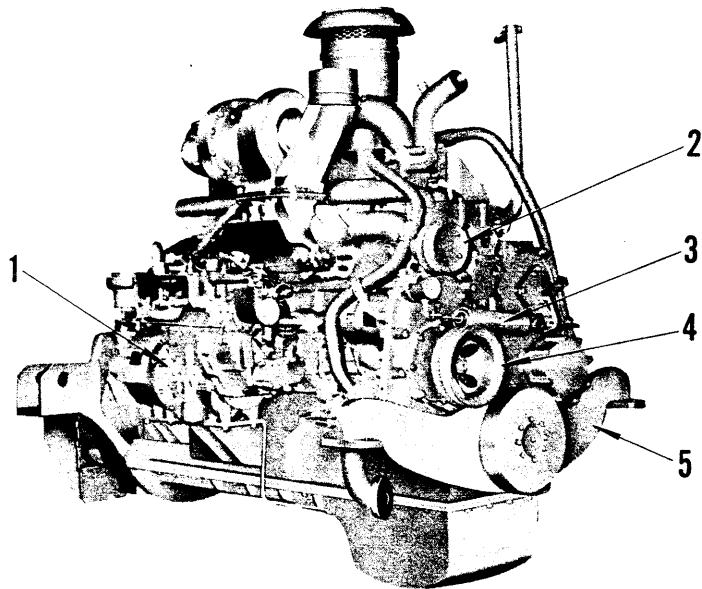
6127P003



- 13. Exhaust manifold
- 14. Generator
- 15. Starting motor
- 16. Oil cooler
- 17. Water pump

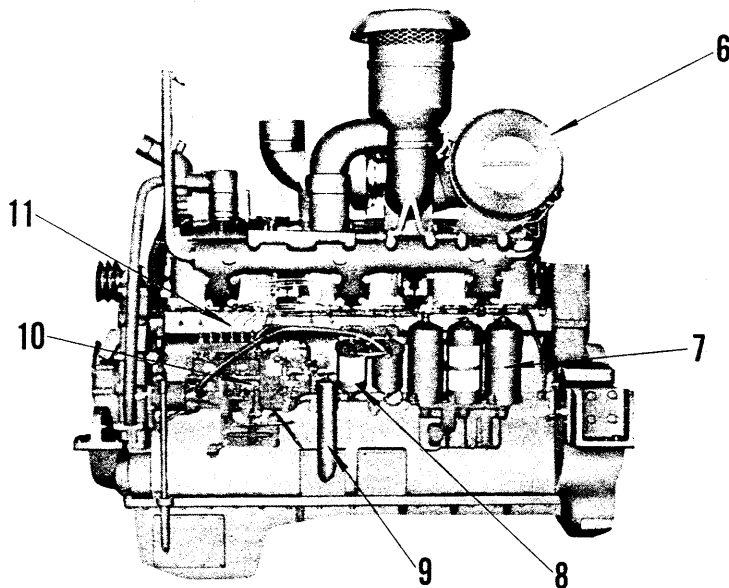
6127P004

S6D155-4 (WITH 2G84 STARTING ENGINE)
ENGINE SERIAL No. 10011 ~ 19999 (OPTION)



- 1. Starting engine
- 2. Tension pulley
- 3. Tension spring
- 4. Accessory drive pulley
- 5. Front support

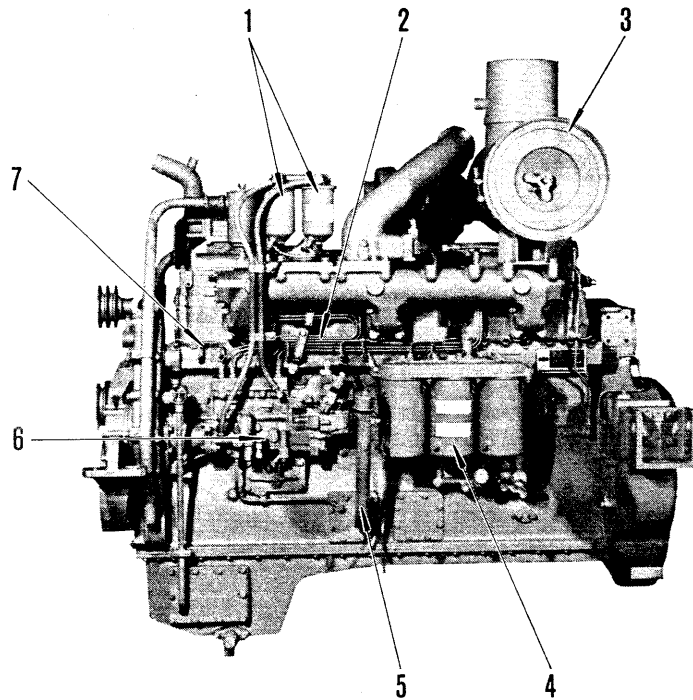
6127P005



- 6. Air cleaner
- 7. Fullflow filter
- 8. Fuel filter
- 9. Oil filler
- 10. Fuel injection pump
- 11. Fuel injection pipe

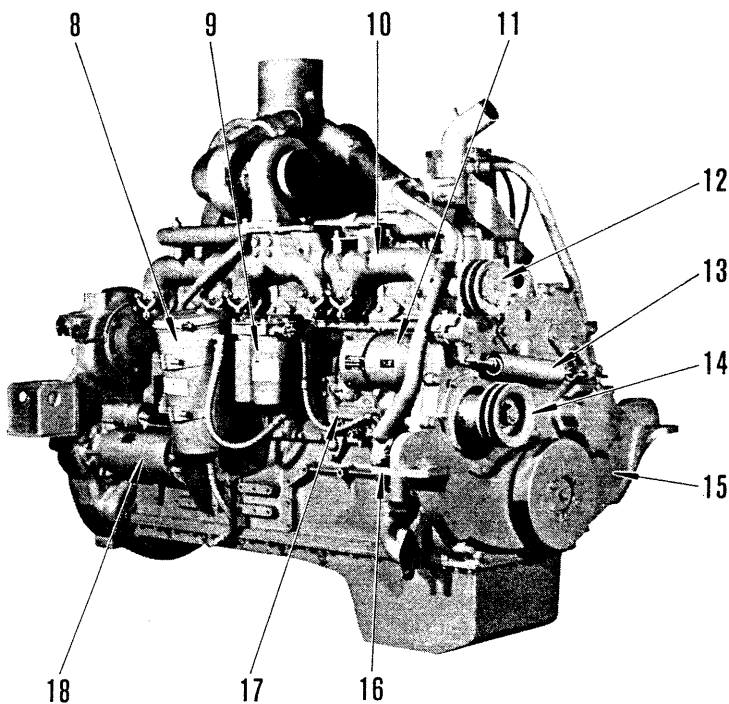
6127P006

S6D155-4 (WITH STARTING MOTOR)
ENGINE SERIAL No. 20000 ~ 24804



- 1. Fuel filter
- 2. Fuel injection pipe
- 3. Air cleaner
- 4. Oil filter
- 5. Oil filler
- 6. Fuel injection pump
- 7. Piston cooling nozzle

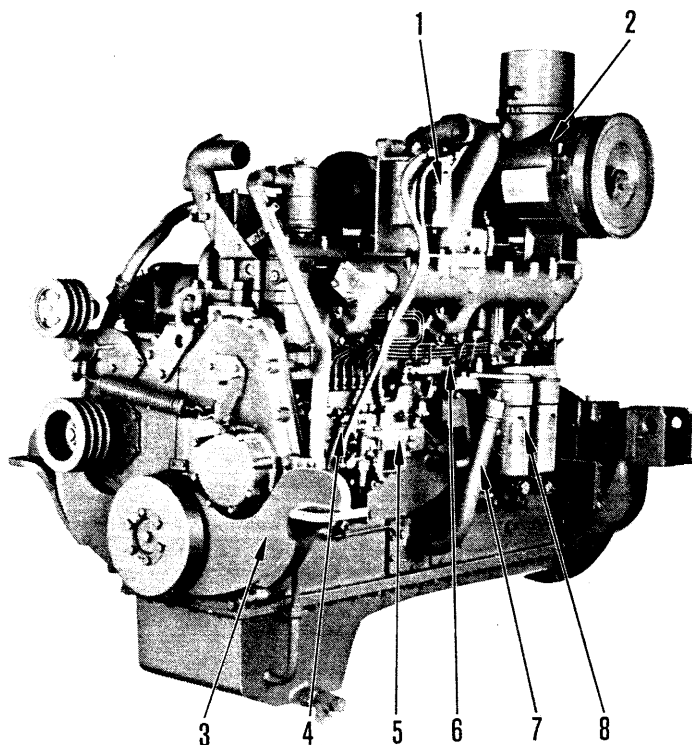
6127P007A



- 8. By-pass filter
- 9. Corrosion resistor
- 10. Exhaust manifold
- 11. Generator
- 12. Tension pulley
- 13. Tension spring
- 14. Accessory drive pulley
- 15. Front support
- 16. Water pump
- 17. Oil cooler
- 18. Starting motor

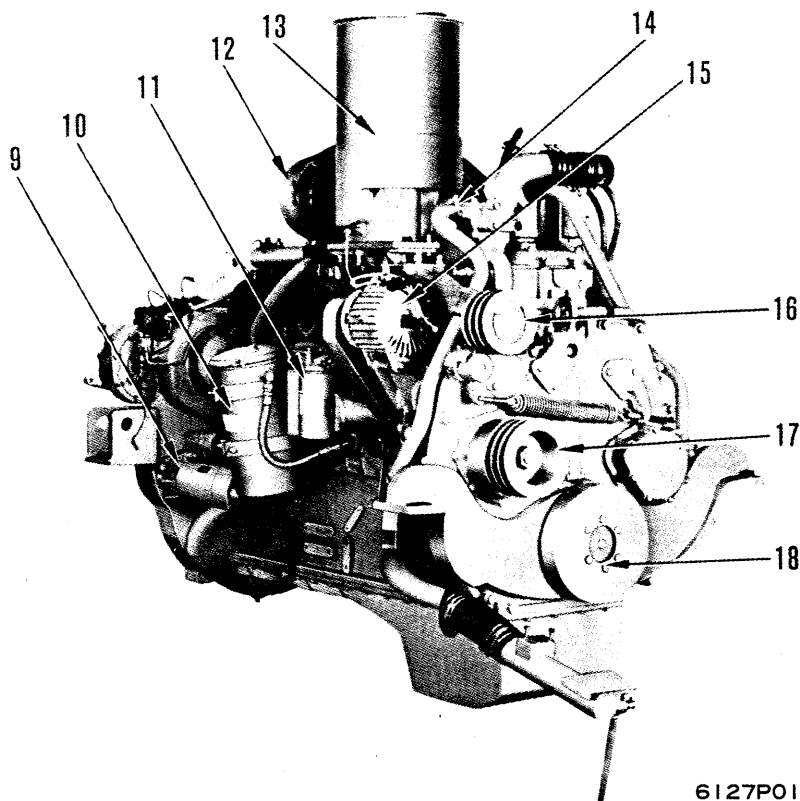
6127P008A

S6D155-4 (D150, 155A-1)
ENGINE SERIAL No. 24805 and up



- 1. Fuel filter
- 2. Air cleaner
- 3. Front support
- 4. Oil level gauge
- 5. Fuel injection pump
- 6. Piston cooling nozzle
- 7. Oil filler
- 8. Oil filter

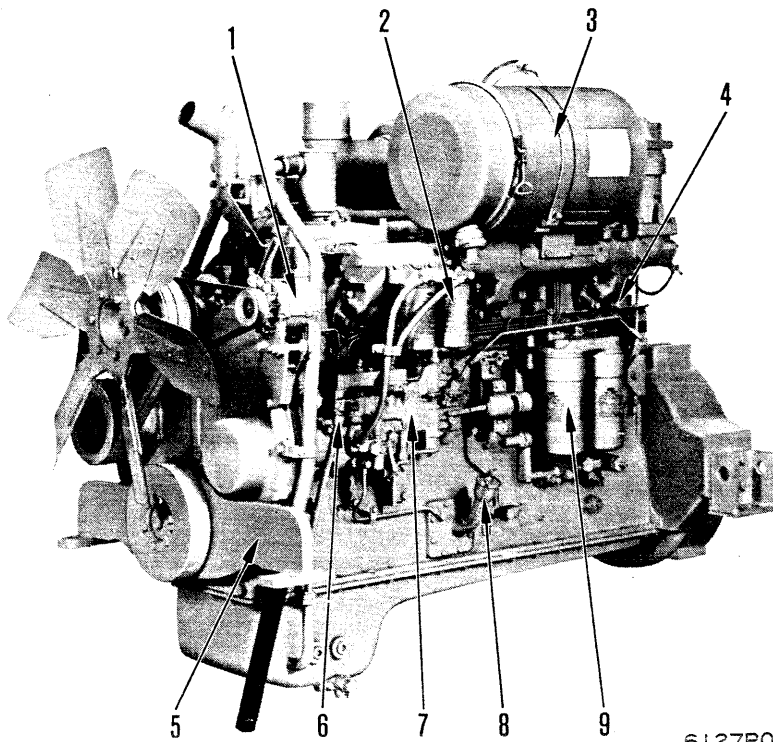
6127P009



- 9. Starting motor
- 10. By-pass filter
- 11. Corrosion resistor
- 12. Turbocharger
- 13. Muffler
- 14. Thermostat housing
- 15. Alternator
- 16. Tension pulley
- 17. Accessory drive pulley
- 18. Vibration damper

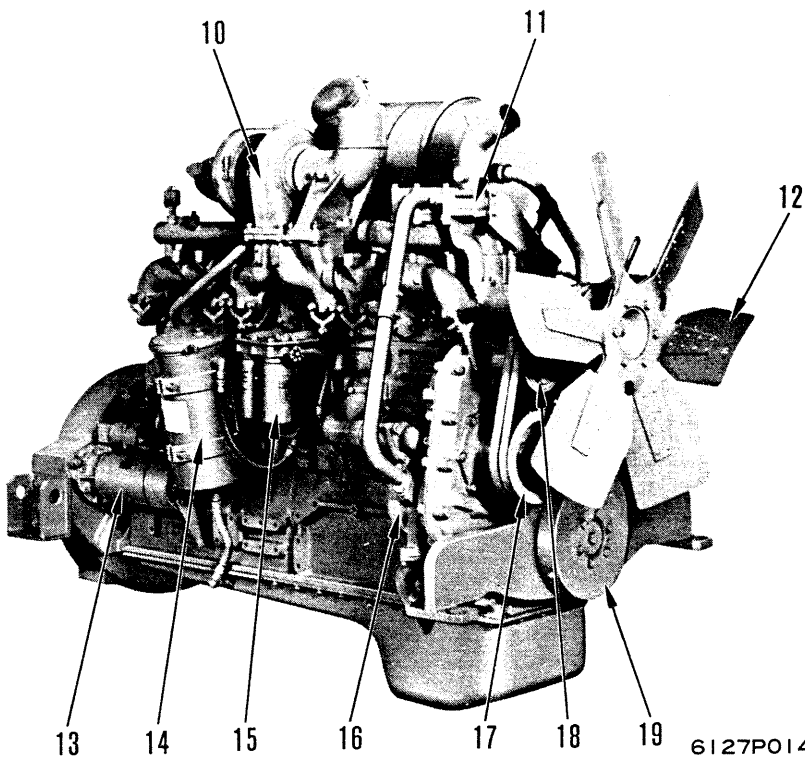
6127P012

S6D155G-4



- 1. Alternator
- 2. Fuel filter
- 3. Air cleaner
- 4. Piston cooling nozzle
- 5. Front support
- 6. Oil level gauge
- 7. Fuel injection pump
- 8. Oil filler
- 9. Oil filter

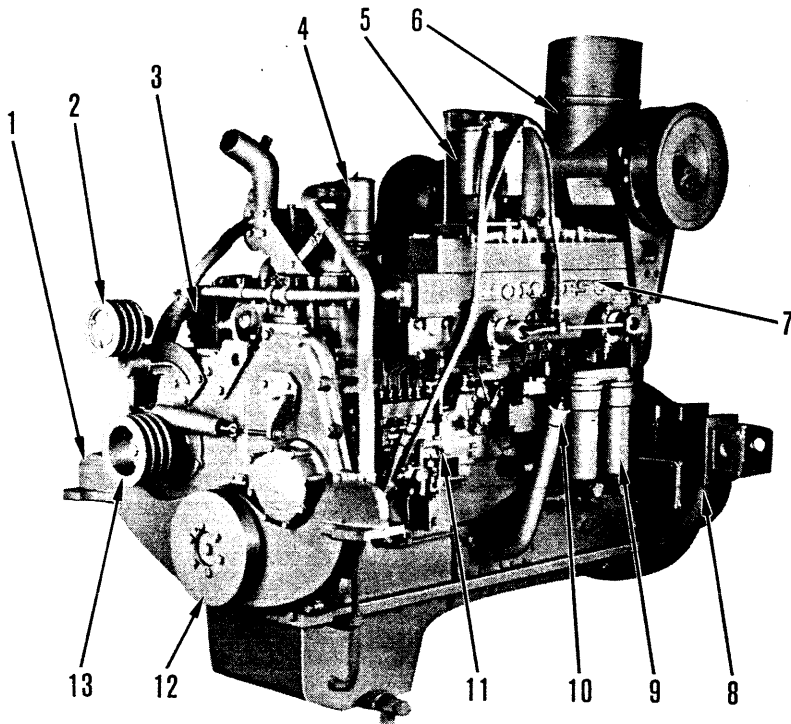
6127P013



- 10. Turbocharger
- 11. Thermostat housing
- 12. Fan
- 13. Starting motor
- 14. By-pass filter
- 15. Corrosion resistor
- 16. Water pump
- 17. Accessory drive pulley
- 18. Tension pulley
- 19. Vibration damper

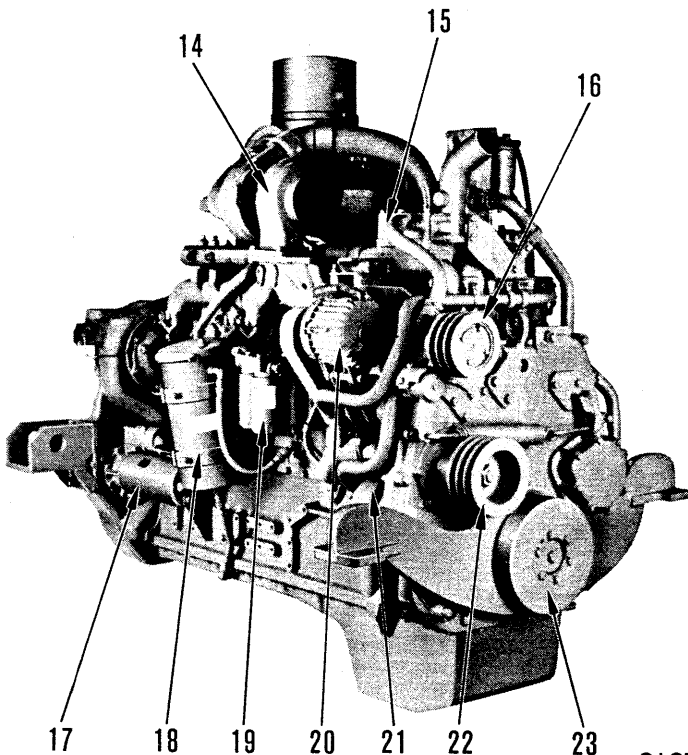
6127P014

SA6D155-4



1. Front support
2. Tension pulley
3. Alternator
4. Breather
5. Fuel filter
6. Air cleaner
7. After-cooler
8. Flywheel housing
9. Oil filter
10. Oil filler
11. Fuel injection pump
12. Vibration damper
13. Accessory drive pulley

6127P015



14. Turbocharger
15. Thermostat housing
16. Tension pulley
17. Starting motor
18. By-pass filter
19. Corrosion resistor
20. Alternator
21. Water pump
22. Accessory drive pulley
23. Vibration damper

6127P016

SPECIFICATIONS

Engine model		S4D155-4		
Machine		D80A-17	D85A-17	D95S-1
Number of cylinders – Bore x Stroke (mm)		4 – 155 x 170		
Total piston displacement (cc)		12,840		
Firing order		1 – 2 – 4 – 3		
Dimensions	Overall length (Fan to Rear support) (mm)	1,426	1,426	1,456
	Overall width (mm)	1,110	1,110	1,125
	Overall height (Excluding exhaust pipe) (mm)	–	–	1,910
	Overall height (Including exhaust pipe) (mm)	2,570	2,530	3,305
Performance	Flywheel horsepower (HP/rpm)	210/1,850		240/1,850
	Maximum torque (kg.m/rpm)	98/1,200		112/1,200
	No-load maximum engine speed (rpm)	2,050 ± 50		2,050 ± 50
	No-load minimum engine speed (rpm)	600 ± 50		600 ± 50
	Minimum fuel consumption ratio (g/HP.h)	180		180
Dry weight (kg)	2,050			
Fuel pump	BOSCH PES-PD type			
Governor	BOSCH RSUV centrifugal all speed governor			
Lubricating oil amount (refill capacity) (ℓ)	52 (47)	52 (*47) Engine Serial No. ~ 50278 64 (*47) Engine Serial No. 50279 ~		
Coolant amount (ℓ)	84	79		
Alternator	24V, 20A (Generator)			
Starting motor	24V, 11kW			
Battery	12V 200Ah x 2			
Turbocharger	KTR130			
Air compressor	–			
After cooler	–			

* Change the oil every 250 hours service.
Add another 12ℓ for by-pass filter every 500 hours service.

S6D155-4

D150A-1 (Engine Serial No. 10011~19999)	D150A-1 (Engine Serial No. 20000~)	D155A-1 (Engine Serial No. 10011~12297)	D155A-1 (Engine Serial No. 12298~19999)	D155A-1 (Engine Serial No. 20000~)
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6 – 155 x 170

19,260

1 – 5 – 3 – 6 – 2 – 4

1,893		1,880		
1,190		1,190		
-		1,931		
2,933		2,914		
300/2,000	300/2,000	300/2,000	320/2,000	320/2,000
134/1,400	134/1,400	134/1,400	144/1,400	144/1,400
2,230 ± 50	2,230 ± 50	2,230 ± 50	2,230 ± 50	2,230 ± 50
600 ± 50	600 ± 50	600 ± 50	600 ± 50	600 ± 50
185	180	185	185	180
2,490	2,600	2,490		2,580

BOSCH PES-PD type

BOSCH RSUV centrifugal all speed governor

63 (56)	77 (*57) Engine Serial No. ~24804 75 (*55) Engine Serial No. 24805 ~	63 (56)	77 (*57) Engine Serial No. ~24804 75 (*55) Engine Serial No. 24805 ~
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120

24V, 20A (Generator)	24V, 20A (Generator) No. ~20804 24V, 35A No. 20805 ~ 24V, 11kW	24V, 20A (Generator)	24V, 20A (Generator) No. ~20804 24V, 35A No. 20805 ~ 24V, 11kW
24V, 11kW		24V, 11kW	
12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2

KTR130

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Engine model		S6D155-4		
Machine		D155S-1 (Eng. No. 15182 – 19999)	D155S-1 (Eng. No. 20001 and up)	D155W-1 (Eng. No. 20001 – 24804)
Number of cylinders – Bore x Stroke (mm)		6 – 155 x 170		
Total piston displacement (cc)		19,260		
Firing order		1 – 5 – 3 – 6 – 2 – 4		
Dimensions	Overall length (mm)	1,890	1,890	1,864
	Overall width (mm)	1,190	1,190	1,180
	Overall height (Excluding exhaust pipe) (mm)	1,930	1,930	1,839
	Overall height (Including exhaust pipe) (mm)	3,135	3,198	–
Performance	Flywheel horsepower (HP/rpm)	350/2,000		270/2,000
	Maximum torque (kgm/rpm)	160/1,400		120/1,400
	No-load maximum engine speed (rpm)	2,240 ± 40		2,240 ± 40
	No-load minimum engine speed (rpm)	600 ± 50		600 ± 50
	Minimum fuel consumption ratio (g/HPh)	175		180
Dry weight (kg)		2,490		2,575
Fuel pump		BOSCH PES-PD type		
Governor		BOSCH RSUV centrifugal all speed governor		
Lubricating oil amount (Refill capacity) (ℓ)		63 (56)	77 (*57)	80 (*60)
Coolant amount (ℓ)		160		
Alternator		24V, 32A (Generator)	24V, 20A	24V, 20A
Starting motor		24V, 11 kW	24V, 11kW	24V, 11kW
Battery		12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2
Turbocharger		KTR130		
Air compressor		–		
After cooler		–		

* Change the oil every 250 hours service.
Add another 12ℓ for by-pass filter every 500 hours service.

GENERAL

SPECIFICATION

S6D155-4				
D155W-1 (Eng. No. 24805 and up)	D155C-1 (Eng. No. 20001 – 24804)	D155C-1 (Eng. No. 24805 and up)	D155C-1 (Eng. No. 20001 – 24804) (With starting Eng. 2K68)	D155C-1 (Eng. No. 24805 and up) (With starting Eng. 2K68)
6 – 155 x 170				
19,260				
1 – 5 – 3 – 6 – 2 – 4				
1,864	1,880		1,998	
1,180	1,190		1,190	
1,839	—		—	
—	2,894		2,894	
270/2,000	320/2,000		320/2,000	
120/1,400	144/1,400		144/1,400	
2,240 ± 40	2,240 ± 40		2,240 ± 40	
600 ± 50	600 ± 50		600 ± 50	
180	180		180	
2,575	2,580		2,700	
BOSCH PES-PD type				
BOSCH RSUV centrifugal all speed governor				
78 (*58)	83 (47)	75 (47)	83 (47)	75 (47)
160				
24V, 20A	24V, 35A 24V, 50A	24V, 35A 24V, 50A	24V, 50A	24V, 50A
24V, 11 kW	24V, 11 kW		—	—
12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2	12V 200Ah x 2
KTR130				
—				
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