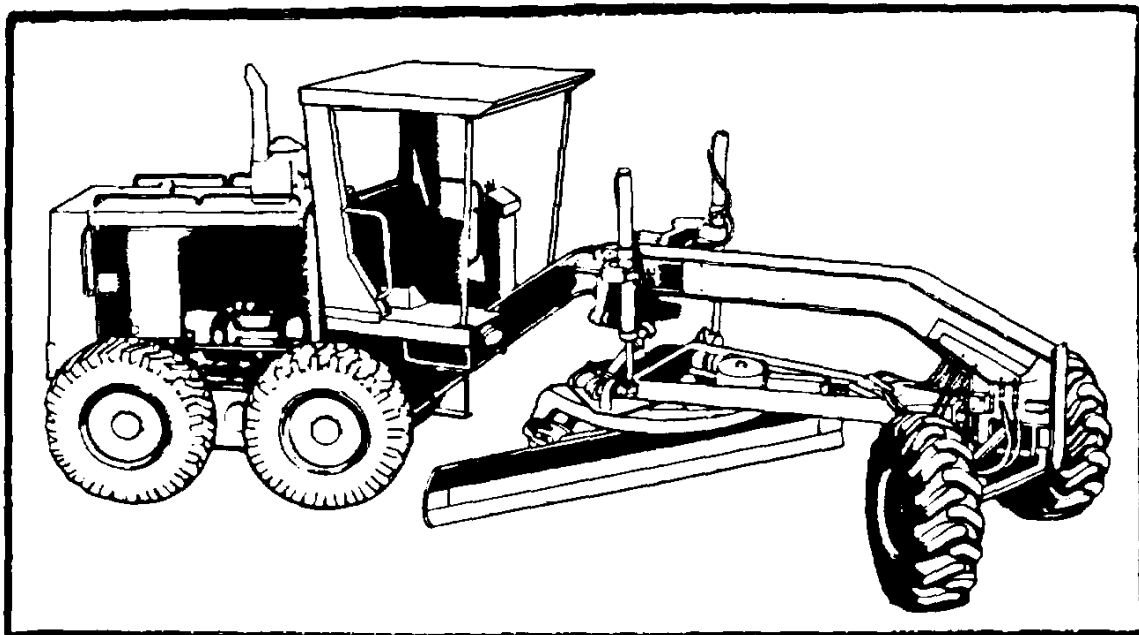


**TECHNICAL MANUAL
UNIT, DIRECT AND GENERAL SUPPORT
PARTS MANUAL
FOR
GRADER, HEAVY, ROAD, MOTORIZED,
DIESEL ENGINE DRIVEN**

**TYPE I (NONSECTIONALIZED)
TYPE II (SECTIONALIZED)**

**NSN 3805-01-252-0128
NSN 3805-01-251-8252**



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**HEADQUARTERS, DEPARTMENT OF THE ARMY
APRIL 1989**

UNIT, DIRECT AND GENERAL SUPPORT
PARTS- MANUAL
FOR
GRADER, HEAVY, ROAD, MOTORIZED,
TYPE I NONSECTIONALIZED
NSN 3805-01-252-0128
TYPE 11 SECTIONALIZED
NSN 3805-01-251-8252

REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished direct to you.

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This technical manual is an authentication of the manufacturers commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

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MACHINE IDENTIFICATION

The CCE130G graders are identified with SERIAL NUMBERS. Serial numbers are assigned to the chassis and to the engine. The chassis and the engine may also carry ARRANGEMENT NUMBERS. These numbers are shown on the serial number plates and on the master plate in the operator's compartment. For the location of the serial number plates, refer to the Specification Section at the back of this Parts Book.

These numbers are required to determine which components are included on the machine as assembled at the factory. This permits accurate identification of replacement part numbers.

ORDERING PARTS

Replacement parts are available and include all parts required to protect and service the machines. When ordering parts, your order should specify the quantity, part number, part name and the serial number and arrangement number of the machine for which the parts are needed. If in doubt about the part number, please provide a complete description of the needed item.

HOW TO USE THE PARTS BOOK

Parts Books include illustrations of the groups or assemblies which make up the machine. These illustrations show the components which make up the machine. The alphabetical index located in the front part of the book should be used to determine the page number on which specific illustrations are shown. Reference to those pages will identify each of the individual serviceable parts.

Captions

The caption under each illustration identifies the part number and name of the group or assembly shown.

Complex groups or assemblies may be broken up into several illustrations, these are identified as PARTS I, II, III or as required.

Captions provide additional information such as page numbers where illustrations of sub assemblies are shown, information regarding quantities used and other information intended to assist the user in determining parts needs.

Indented Part Numbers

Within each illustration is a parts list identifying each serviceable part in the illustration. When a part name is indented in this list, it means that serviceable item is a part of the serviceable time under which it is indented.

Abbreviations and Symbols

- ▲ Used to call attention to
- additional information shown elsewhere within the illustration.
- R.H.** Right Hand Refers to the
- L.H.** Left Hand side of the machine as viewed from the operator's compartment.
- C** Indicates changes from the previous illustration of the same group or assembly.
- O.D.** Outside Diameter
- I.D.** Inside Diameter
- N/S** Not Serviced
- Assem.** Assembly
- in.** Inch
- ft** Foot
- cm** Centimeter
- dm** Decimeter

QUICK REFERENCE GUIDE TO MAJOR SECTIONS

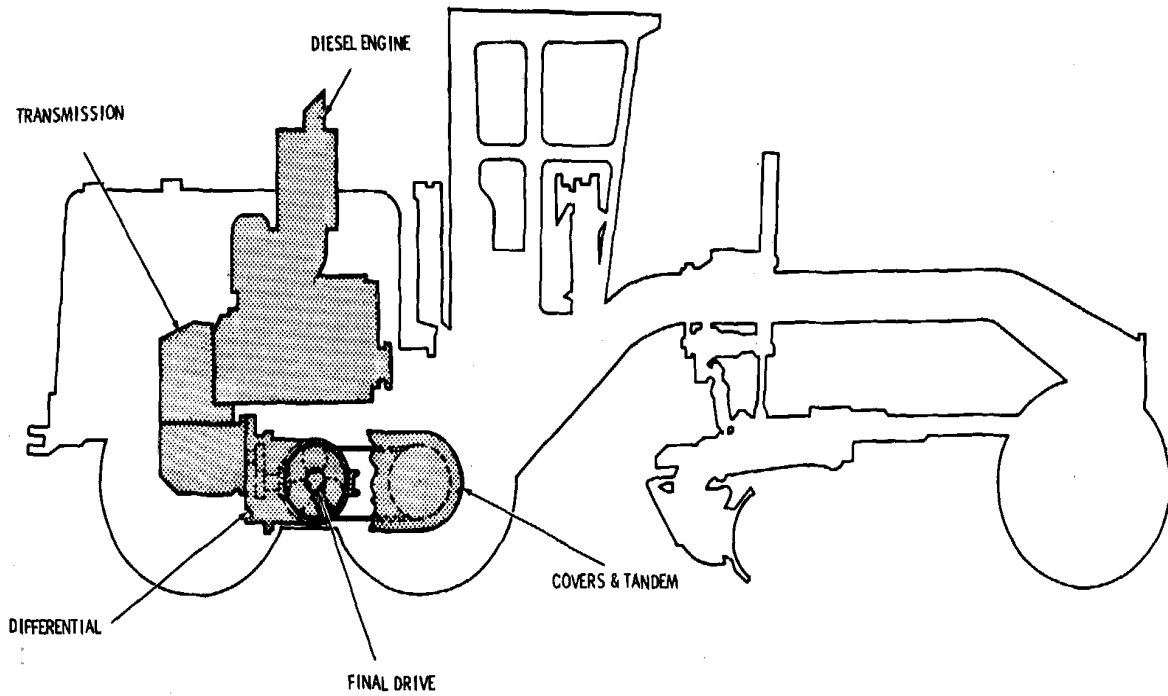
REPLACEMENT ITEMS AND SCHEMATIC
BASIC ENGINE
LUBRICATION SYSTEM
COOLING SYSTEM
INTAKE AND EXHAUST SYSTEM
FUEL SYSTEM AND GOVERNOR
STARTING AND ELECTRICAL SYSTEM
POWER TRAIN - POWER TRANSMISSION UNIT
BRAKES
CHASSIS
BLADE CONTROLS, HYD. AND STEERING SYSTEM
IMPLEMENTS
CAB, GAUGES & ACCESSORIES

REPLACEMENT ITEMS

The following chart provides a convenient listing of those items which require occasional replacement during normal operation or maintenance.

	PART NO.	QTY. USED	PAGE NO.
BATTERIES – 12 Volt	7N7200 or	2	
Heavy Duty – 12 Volt	4S9261	2	105
BREATHERS			
Crankcase – Breather Assem.	8S248	1	36
Transmission	8S5820	1	132
COOLING SYSTEM			
Relief Valve Assem.– Cap	321464	1	37
FILTERS			
Air Cleaner			
Element Assem. – Primary	8N5389	1	46
Element Assem. Secondary	2S19RS	1	46
	2P4004	1	35
Crankcase – Filter Assem.			
Fuel			
Filter Assem.	1W8633	1	73
Hydraulic			
Screen — Filler	8D5489	1	203
Tank — Element Assem.	9M9740 or	2	203
(Use with Fire Resistant Fluid)	1 U2093	2	203
Seal	5H6734	2	203
Transmission			
Element Assem.	9M9740 or	1	148
(Use with Fire Resistant Fluid)	1U2093	1	148
Seal	2S8439	1	148
Screen – Transfer Case	85S9130	2	132
Filter – Transfer Case	8S9129	2	132
GASKETS			
Hydraulic Filler Cap	9H6454	1	204
Radiator Filler Cap	321464	1	37
Valve Cover	8S1606	1	17
HOSES – Fumes Disposal	1N4102	8.00 cm	36
LAMPS			
Flood – Sealed Unit	1M5898	1	112
Front & Rear – Sealed Units			
SEAT BELT	1 M5899	1	112
VEE BELTS	6G1606	1	
Alternator & Fan	7M4702	(Includes 2 Belts)	23

CATERPILLAR 130G MOTOR GRADER



POWER TRAIN ARRANGEMENT

Consists of Page

GENERAL STRUCTURE

1	7N6553	Cylinder Block Group	6
1	2W102	Cylinder Block Cover Group	9
1	6N8080	Crankshaft Group	10
1	2P6224	Crankshaft Seal Group	11
4	1W6588	Connecting Rod and Piston Group	9
1	1N4436	Single Camshaft Group	12
1	1W2872	Balancer Group	12

UPPER STRUCTURE

1	7N6544	Cylinder Head Group	13
1	7N9534	Cylinder Head Fastener Group	16
1	7N8024	Valve Mechanism Group	16
1	8N4446	Valve Mechanism Cover Group	17
1	7N9122	Engine Lifting Group	18
1	2P6530	Cylinder Head Cover Group	14

FRONT STRUCTURE

1	8N0303	Front Housing Group	19
1	2P6529	Front Housing Cover Group	20
1	8N0872	Front Housing Fastener Group	20
1	1W5634	Front Timing Gear Group	17
1	7N9589	Engine Trunnion Group	25
1	8N5585	Engine Support Group	21
1	3P103	Crankshaft Hub Group	22

REAR STRUCTURE

1	2P6166	Flywheel Housing Group	25
1	1P9581	Flywheel Group	26

LOWER STRUCTURE

1	4W2314	Oil Pan Group	27
1	2P6189	Oil Pan Fastener Group	26
1	2P6491	Oil Level Gauge Group	28

LUBRICATION SYSTEM

1	2P1784	Engine Oil Pump Group	31
1	2P6512	Engine Oil Lines Group	34
1	2P6475	Oil Filter Group	35
1	2P6855	Oil Filler Group	29
1	1P4244	Breather Group	36

2W821 ENGINE ARRANGMENT—Part 1

NOTE: WHEN ORDERING PARTS GIVE ENGINE ARRANGEMENT NUMBER AND SERIAL NUMBER

Consists of

Page

COOLING SYSTEM

1	7N6206	Water Pump Group	9
1	1N4219	Water Lines Group	2
1	2P6215	Engine Oil Cooler Group	4
1	2P6508	Transmission Oil Cooler Group	3

INTAKE AND EXHAUST SYSTEM

1	7N4144	Air Lines Group	8
1	2P6571	Exhaust Manifold Group	6
1	1W3793	Exhaust Manifold Fastener Group	5
1	7N4650	Turbocharger Group	1
1	1W558	Turbocharger Oil Lines Group	9

FUEL SYSTEM (NSFS)

1	W517	Governor and Fuel Injection Pump Group	9
1	2W3286	Secondary Filter Group	3
1	2W4012	Drain Lines Group	8
1	1W5374	Primary Fuel Filter Group	4
1	8N2772	Fuel Injection Lines Group	8
1	2W4160	Fuel Transfer Pump and Mounting Group	6

MISCELLANEOUS

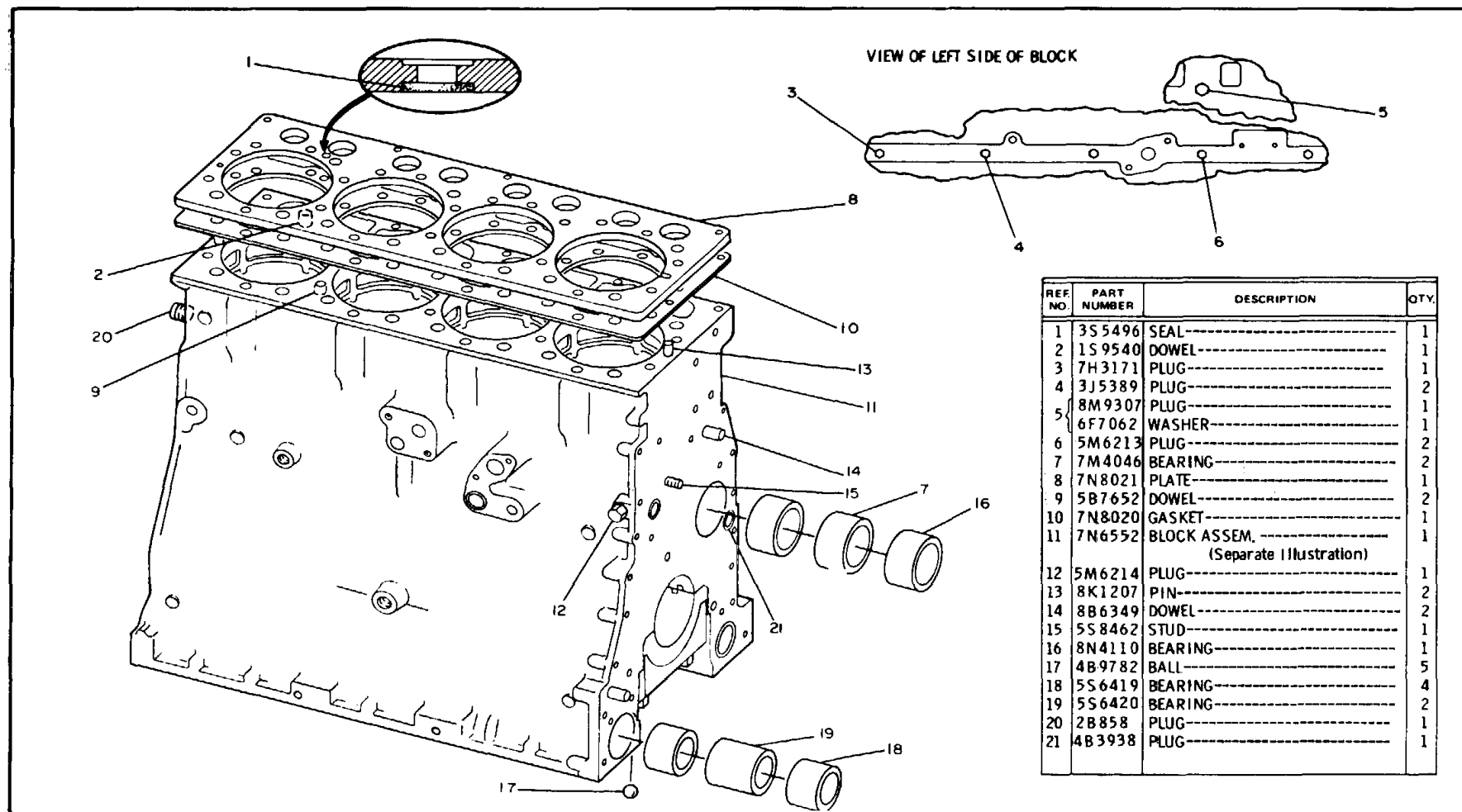
1	7N9912	Air Compressor Group	2
1	7N9919	Air Compressor Lines Group	4
1	8S3899	Paint and Lubricant Group	9
1	8N9033	Coolant Outlet (Cylinder Head) Plug	5

NOTE: REFER TO INDEX FOR PAGE LOCATION OF GASKET KITS

2W821 ENGINE ARRANGEMENT--Part 2

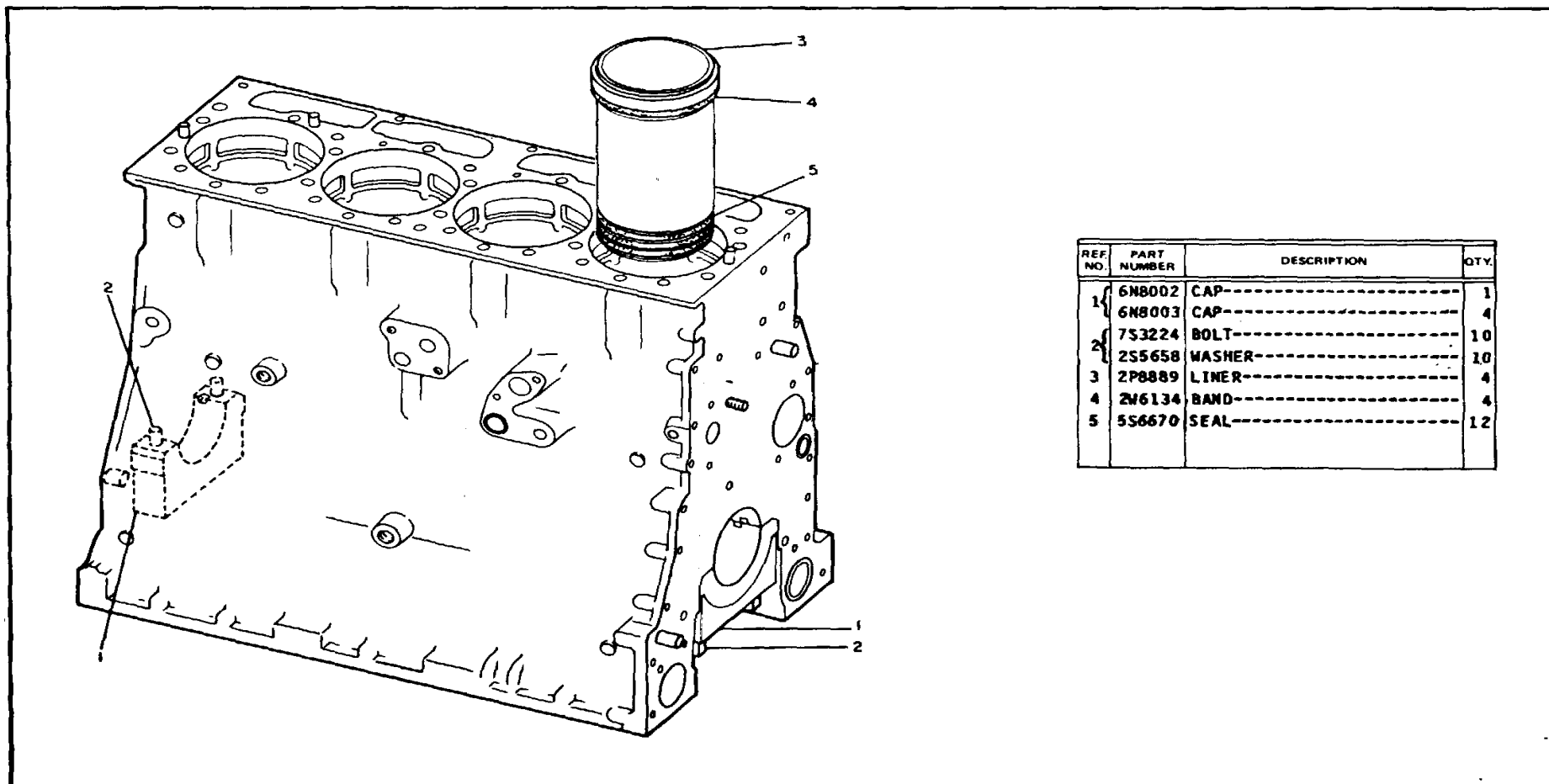
NOTE: WHEN ORDERING PARTS GIVE ENGINE ARRANGEMENT NUMBER AND SERIAL NUMBER

CATERPILLAR 130G MOTOR GRADER



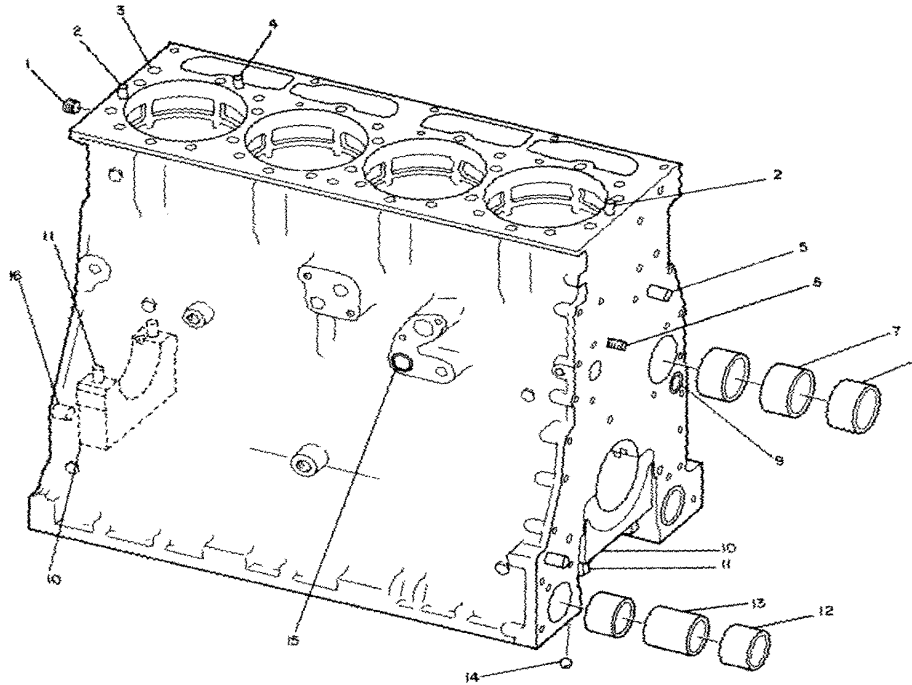
7N6553 CYLINDER BLOCK GROUP
7N6552 Block parts are shown on Page 7

BASIC ENGINE



7N6552 CYLINDER BLOCK ASSEMBLY
 Part of 7N6553 Cylinder Block Group shown on Page 6
 For Field Replacement order 1N3574 shown on Page 8

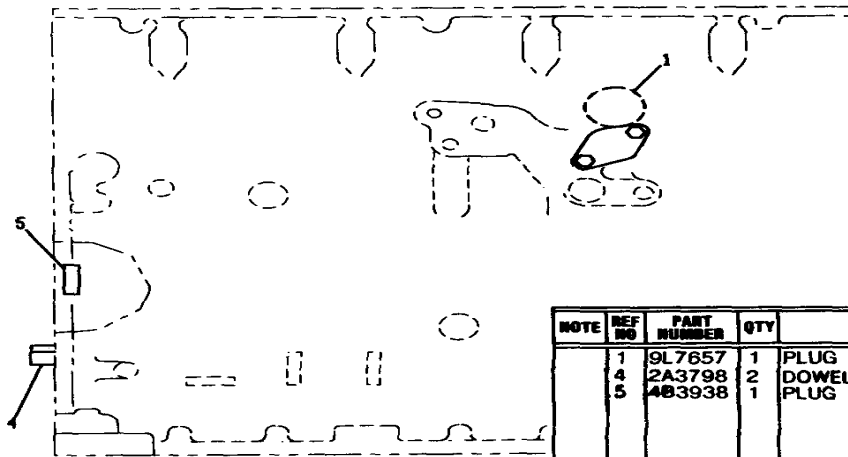
CATERPILLAR 130G MOTOR GRADER



REF. NO.	PART NUMBER	DESCRIPITON	QTY
1	2B858	PLUG	1
2	8K1207	PIN	2
3	5B7652	DOWEL	2
4	1S9540	DOWELL	1
5	8B6349	DOWEL	2
6	5S8462	STUD	1
7	7M4046	BEARING	2
8	8N4110	BEARING	1
9	4B3938	PLUG	2
10	6N8003	CAP	5
11	7S3224	BOLT	10
11	2S5658	WASHER	10
12	5S6419	BEARING	4
13	5S6420	BEARING	2
14	4B9782	BALL	5
15	9L7657	PLUG	1
16	2A3798	DOWEL	2

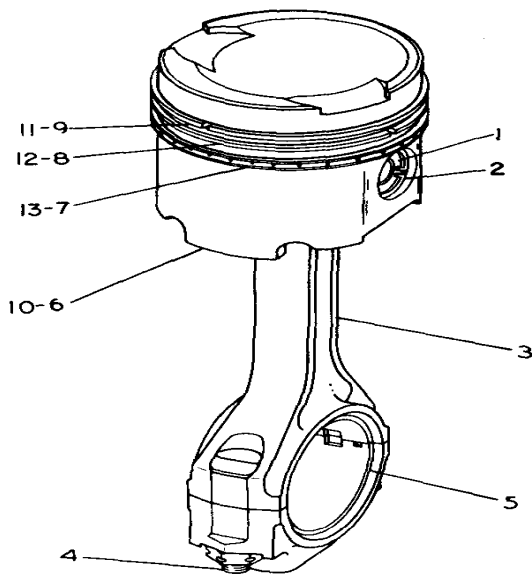
*1N3574 CYLINDER BLOCK GROUP
Provides Field Replacement for 7N6552 shown on Page 7*

BASIC ENGINE



NOTE	REF NO	PART NUMBER	QTY	DESCRIPTION
	1	9L7657	1	PLUG
	4	2A3798	2	DOWEL
	5	4B3938	1	PLUG

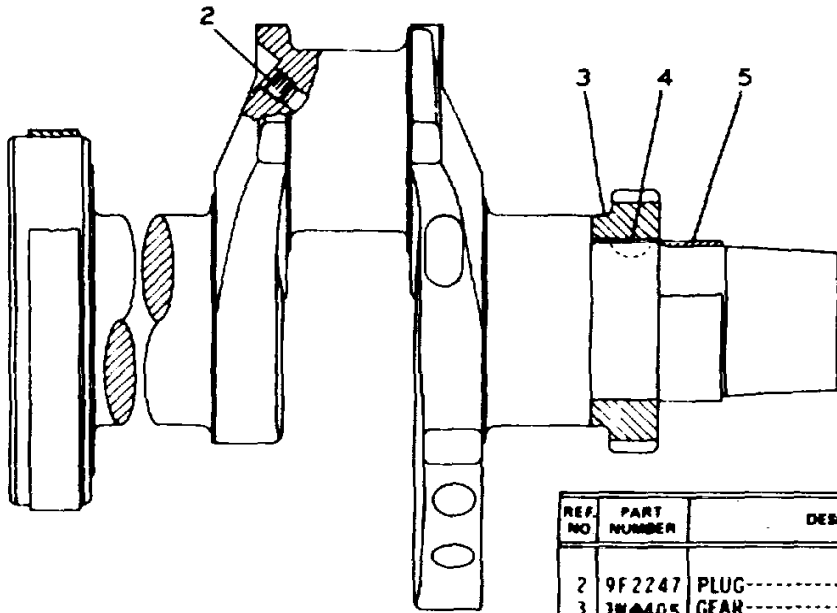
2W102 CYLINDER BLOCK COVER GROUP



NOTE	REF NO	PART NUMBER	QTY	DESCRIPTION
	1	7N9805	1	PIN
	2	1S9543	2	RETAINER
	3	8N1721	1	ROD ASSEM.
		8N1849	1	BEARING
	4	1P9956	2	BOLT
		5S6348	2	NUT
	5	8N8219	1	BEARING (STANDARD)
	6	1W6757	1	BODY ASSEM.
	7	9L6934	1	RING (OIL)
	8	5S6750	1	RING (INTERMEDIATE)
	9	9S3029	1	RING (TOP)
	10	2W6091	1	PISTON RING GROUP
	11	9S3029	1	RING (TOP)
	12	5S6750	1	RING (INTERMEDIATE)
	13	9L6934	1	RING (OIL)

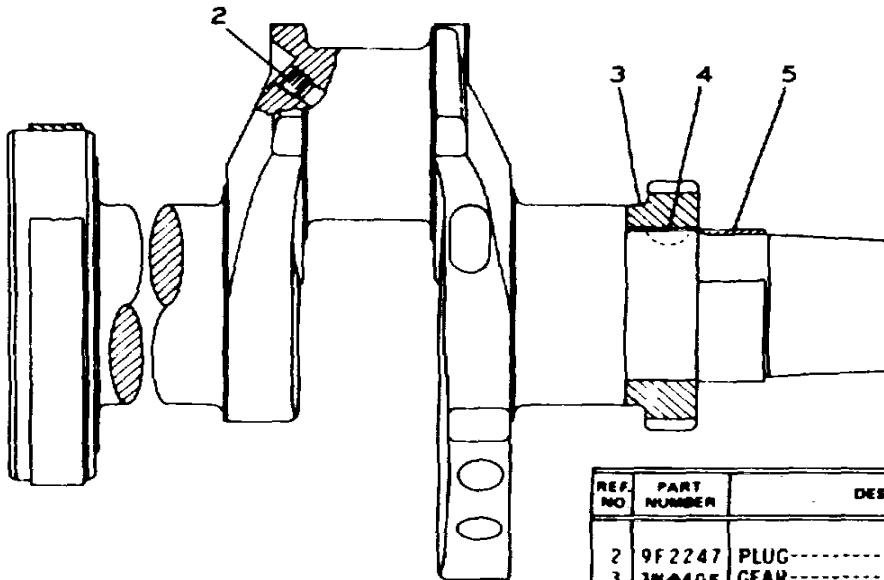
1W6588 CONNECTING ROD AND PISTON GROUP -4 REQUIRED

CATERPILLAR 130G MOTOR GRADER



REF. NO	PART NUMBER	DESCRIPTION	QTY
2	9F2247	PLUG-----	4
3	2W4405	GEAR----- (40 teeth)	1
4	5H2671	KEY-----	1
5	2P3859	SLEEVE-----	1

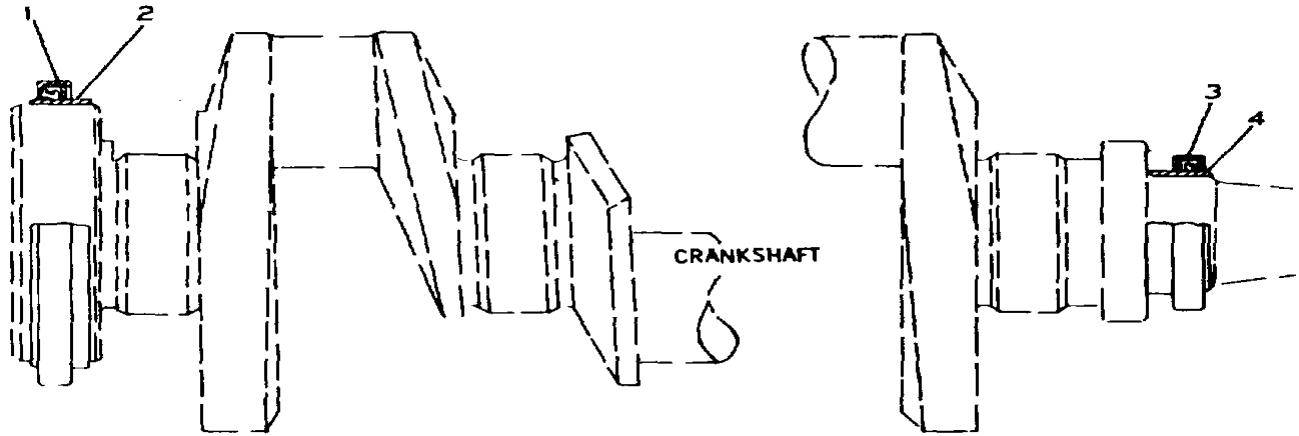
6N8080 CRANKSHAFT GROUP
For Field Replacement of 4N7695 order 4N7692



REF. NO	PART NUMBER	DESCRIPTION	QTY
2	9F2247	PLUG-----	4
3	2W4405	GEAR----- (40 teeth)	1
4	5H2671	KEY-----	1
5	2P3859	SLEEVE-----	1

4N7692 CRANKSHAFT ASSEMBLY - Field Installation

BASIC ENGINE



REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	1N3216	SEAL GROUP----- (Includes)	1
	9S3111	SEAL-----	1
2	2P3858	SLEEVE-----	1

3	5S6296	SEAL-----	1
4	2P3859	SLEEVE-----	1

228583

2P6224 CRANKSHAFT SEAL GROUP