

# Parts Manual



See "General Information"  
for New Parts Manual  
Features.

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## 928HZ, 930H Wheel Loader

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CXK1-Up (Machine)  
DHC1-Up (Machine)  
C6E661-Up (Engine)  
J2W1-Up (Transmission)  
J2X1-Up (Transmission)

Powered By C6.6 Engine



# Product and Dealer Information

Note: For product identification plate locations, see the section "Product Identification Information" in the Operation and Maintenance Manual.

Delivery Date: \_\_\_\_\_

## Product Information

Model: \_\_\_\_\_

Product Identification Number: \_\_\_\_\_

Engine Serial Number: \_\_\_\_\_

Transmission Serial Number: \_\_\_\_\_

Generator Serial Number: \_\_\_\_\_

Attachment Serial Numbers: \_\_\_\_\_

Attachment Information: \_\_\_\_\_

Customer Equipment Number: \_\_\_\_\_

Dealer Equipment Number: \_\_\_\_\_

## Dealer Information

Name: \_\_\_\_\_ Branch: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Dealer Contact

Phone Number

Hours

Sales: \_\_\_\_\_

Parts: \_\_\_\_\_

Service: \_\_\_\_\_

# MEMORANDA

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# GENERAL INFORMATION

## 1. MACHINE IDENTIFICATION

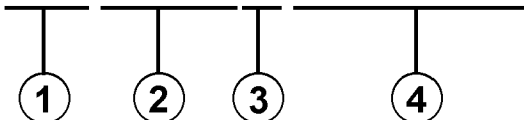
Caterpillar machines are identified by Product Identification Numbers (PIN). Some components included in a machine may be identified by Serial Numbers (S/N). Typical components that will be serialized include engines, transmissions, bulldozers, and rippers. The machine and engine are further identified by arrangement numbers and in some cases modification numbers. These numbers are shown on the product identification plate(s) and on the master plate in the operator's compartment.

Caterpillar dealers need all of these numbers to determine accurate parts identification.

### **New Feature**

Effective First Quarter 2001 the Caterpillar Product Identification Number (PIN) changed from 8 to 17 characters. In an effort to provide uniform equipment identification, Caterpillar and other construction equipment manufacturers are moving to comply with the latest version of the product identification numbering standard. Non-road machine PINs are defined by ISO 10261. The new PIN format will apply to all Caterpillar machines and generator sets. The PIN plates and frame marking will display the 17 character PIN. The new format will look like the following:

\*CAT 0789BG 6SL12345\*



The diagram shows the PIN format: \*CAT 0789BG 6SL12345\*. Below the first four characters (C, A, T, 0), there are four vertical lines leading to circles containing the numbers 1, 2, 3, and 4 respectively.

Where:

1. Caterpillar's World Manufacturing Code (characters 1-3)
2. Machine Descriptor (characters 4-8)
3. Check Character (character 9)
4. Machine Indicator Section (MIS) or Product Sequence Number (characters 10-17). These were previously referred to as the Serial Number.

Machines and generator sets produced before First Quarter 2001 will maintain their 8 character PIN format.

Components such as engines, transmissions, axles, etc. and work tools will continue to use an 8 character Serial Number (S/N).

## 2. ORDERING PARTS

### **WARNING**

**When replacement parts are required for this product Caterpillar recommends using Caterpillar replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material.**

**Failure to heed this warning can lead to premature failures, product damage, personal injury or death.**

Quality Caterpillar replacement parts are available from Caterpillar dealers throughout the world. Their parts inventories are up to date and include all parts normally required to protect your investment in Caterpillar machines. Dealers may offer repair kits or remanufactured parts to allow selection of the most effective repair alternative for a particular situation. When ordering parts, your order should specify the quantity, part number, part name, and the serial number/product identification number of the machine for which the parts are needed.

## 3. PARTS MANUAL ORGANIZATION

Product information in this manual is presented as "information elements" that represent all of the components for the specific model. Engine Arrangement and Seat Group are examples of information elements. The information elements are organized alphabetically by part name and secondarily by part number within each major section of the manual.

## 4. TABLE OF CONTENTS

A table of contents (TOC) is found at the beginning of the manual. The TOC lists each section of the manual with a complete list of all information elements organized as they appear in the manual. Page numbers are provided for quick reference to detailed parts identification illustrations and serviceable consist lists.

## 5. MAINTENANCE PARTS INDEX

The Maintenance Parts Index, located near the beginning of the manual, references most frequently used maintenance part numbers, providing description, quantity, usage and page number. This information is organized alphabetically by part description.

# GENERAL INFORMATION

## 6. INDEX

The index located near the front of the manual is an alphabetical listing of all information elements included in the manual. Page numbers are provided for quick reference to detailed parts identification illustrations and serviceable consist lists.

## 7. PART NUMBER INDEX

A numerical index listing all part numbers and the corresponding page number(s) appears at the back of the manual.

## 8. CAPTIONS

Captions located at the beginning of each information element identify the part number and part name along with additional descriptive information. PIN and S/N information found in each caption should be used to select correct information for a specific machine. Field replacement options, identification of optional attachment components, and where used ("part of") information is also provided.

The first line of a caption is shown in larger type font to indicate the beginning of an information element. Captions for additional pages that may be required to illustrate an information element will be shown in standard type font and will include the term (*contd.*) .

## 9. NON-SERVICED PARTS

In some instances it is necessary to display non-serviced parts that are a link to a lower level serviceable consist lists. These non-serviced part numbers are shown in *italic* type indicating that they are not available.

## 10. PARTS LIST REFERENCE NUMBERS

Numbers shown in the Ref No column correspond to numbers used in the associated graphic(s). An alphabetic suffix may be added to a reference number to identify lower level consist items. Numbers shown in the Graphic Ref column refer to the graphic number identifier displayed in the lower left corner of each illustration. The Graphic Ref number may be used in combination with the item Ref No to determine the correct part number. There may be intentional omission of a Ref No in a consist list as information is updated to reflect the latest serviceable part numbers.

## 11. INDENTED PART NAMES

When a part name is indented in a parts list, it is part of (included in) the group or assembly under which it is indented.

## 12. ILLUSTRATION REFERENCE LETTERS

When necessary, illustrations contain reference letters (A, B, C etc.) that are intended to track lines and harnesses from one point to another. They are also used to show where to reconnect illustrations that have been separated.

## 13. ABBREVIATIONS AND SYMBOLS

**O.D.** – Outside Diameter  
**I.D.** – Inside Diameter  
**A** – Not Part Of This Group  
**B** – Use As Required  
**C** – Change From Previous Type  
**D** – Order By The Meter  
**E** – Order By The Centimeter  
**F** – Not Shown  
**G** – Order By The Inch  
**I** – Refer To Hydraulic Information System  
**M** – Metric Part  
**R** – Remfg Part May Be Available  
**Y** – Separate Illustration  
**Z** – Not Serviced Separately

 **New Feature**

## 14. DESCRIPTION OF TYPE CHANGES

Type - A type is defined as any configuration change that requires an additional Information Element for an Arrangement, Group, or Assembly. If serial number breaks for types are not available, a type # ( Type 1, Type 2, etc.) will be displayed in the caption. These "type" changes are identified with a "C" note (change from previous type) in the Parts List. Only the "types" that apply to this Parts Manual will be included. Additional types may exist causing "C" notes to appear on an Information Element when no other types are shown.

## 15.<END>

This symbol indicates the end of an information element.

### NOTE:

**Continuing improvement and advancement of product design may cause changes to your machine which may not be included in this publication. Whenever a question arises regarding your Caterpillar product or this publication, please consult your Caterpillar dealer for the latest available information.**

# GENERAL INFORMATION

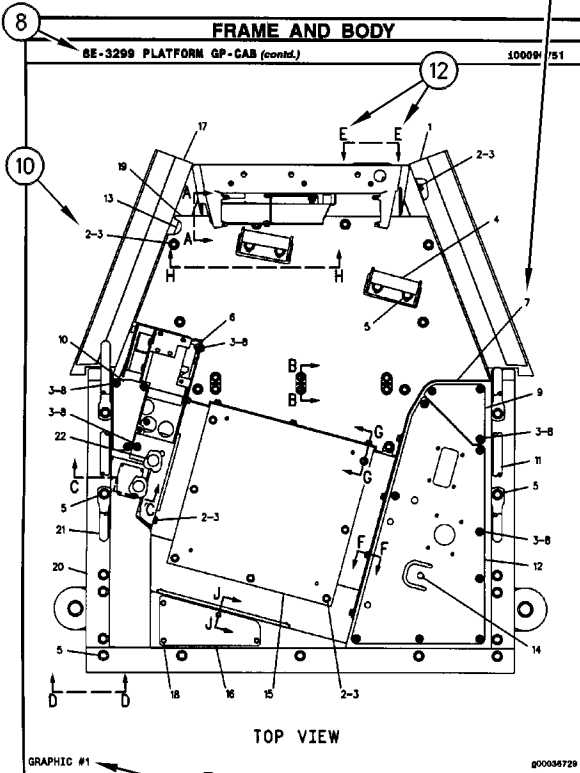
FRAME AND BODY					
BE-3299 PLATFORM GP-CAB					
PIN 3841-99999					
					100090751
NOTE	REF NO	GRAPHIC REF	PART NUMBER	QTY	PART NAME & PRODUCT LEVEL
			31-2982	1	PLATE AS
			68-2092	25	BOLT (1/4-18X.750IN)
			68-1078	41	WASHER-HARD (3MM THK)
			68-1444	2	SUPPORT AS-FOOT
			77-2229	19	BOLT (1/2-13X1IN)
			77-2229	19	WASHER-HARD (4MM THK)
			68-8126	1	COVER AS-LH
			68-8278	6	NUT-WELD (3/8-16 THD)
			17-8189	1	CLIP
			78-2411	4	COVER
			64-0486	18	SCREW-HEAD (3/8-16X.875IN)
			77-0774	1	COVER
			68-0972	1	GASKET
			68-2368	1	GASKET
			68-2380	1	GASKET
			31-3492	1	HANDHOLD
			68-8278	1	COVER AS
			68-8278	8	NUT-WELD (3/8-16 THD)
			68-8278	1	GASKET
			77-0131	1	FLOORPLATE AS
			17-0742	4	NUT-WELD (1/2-13 THD)
			77-8087	1	PLUG-BUTTON
			77-0136	1	PLATE AS
			68-8278	5	NUT-WELD (3/8-16 THD)
			77-8089	1	COVER
			77-0770	1	GASKET
			31-2981	1	PLATE AS
			81-8484	4	BOLT (1/4-20X.825IN)
			81-8484	4	WASHER-HARD (2MM THK)
			61-8484	1	FLOOR MAT
			68-8484	1	MODULE AS-OPERATOR
			31-3534	1	HANDHOLD
			68-8271	2	PLUG
			81-8384	4	BOLT (1/4-20X.825IN)
			81-8384	4	WASHER-HARD (2MM THK)
			68-8282	17	BOLT (3/8-16X.750IN)
			68-1078	21	WASHER-HARD (3MM THK)
			77-0136	1	SEAL
			78-0278	2	BOLT (3/4-10X5IN)
			78-0282	2	WASHER-HARD (3MM THK)
			31-3482	2	PLATE
			31-6380	1	PLATE AS
			78-0282	8	SPACER
			31-5281	1	SEAL
			78-8817	1	GASKET
			78-8818	1	COVER AS
			28-8278	2	WASHER
			68-8228	2	SCREW-KNURLED
			68-3428	1	COVER
			68-8887	1	COVER
			68-2021	8	SCREW-ROCKET HEAD
			68-3142	8	MOUNTING
			68-0287	2	PLATE
			78-0289	2	BOLT (1/2-8X5IN)
			78-0272	2	WASHER-HARD
			41-6484	4	BOLT (3/8-18X1.02IN)
			31-6783	1	COVER

12 FRAME AND BODY 1 of 4 SELP 170-01

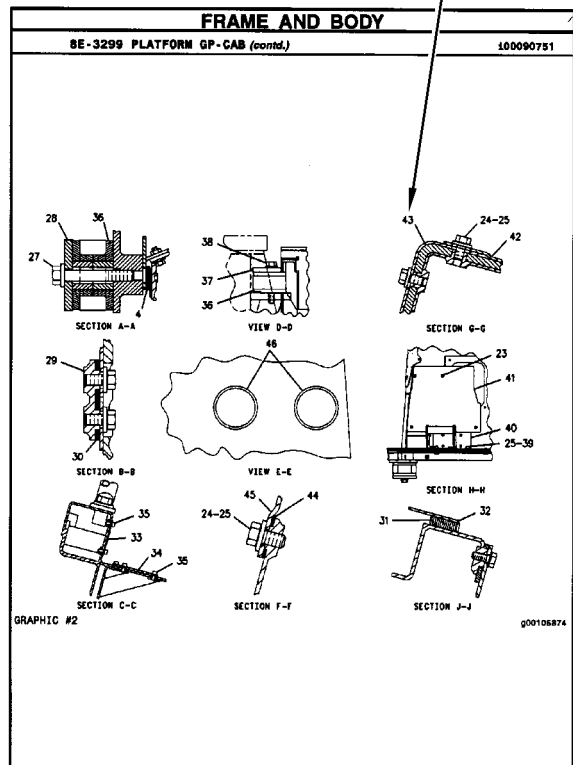
FRAME AND BODY					
BE-3299 PLATFORM GP-CAB (contd.)					
					100090751
NOTE	REF NO	GRAPHIC REF	PART NUMBER	QTY	PART NAME & PRODUCT LEVEL
	41	2	68-8818	1	COVER
	42	2	77-0136	1	PLATE
	43	2	77-0138	1	GASKET
	44	2	78-8724	1	GASKET
	45	2	78-8725	1	COVER
	48	2	68-1069	2	PLUG-BUTTON

M-METRIC PART

SELPA670-01 2 of 4 FRAME AND BODY 13



14 FRAME AND BODY 3 of 4 SELPA670-01



SELPA670-01 4 of 4 FRAME AND BODY 15

# REPAIR ALTERNATIVES

## REMANUFACTURED COMPONENTS

As an option when making repairs consider Caterpillar Remanufactured Components. Components that are available through the Caterpillar Remanufactured Program are identified three ways in the parts book:

- with the letter R in the note field of the parts list
- with an R\* at the beginning of the first line of the caption
- with an \*R at the end of the first line of the caption

Typical components included in the Remanufacturing Program include:

ALTERNATORS  
CONNECTING RODS  
CRANKSHAFTS - UNDERSIZE  
CRANKSHAFTS - UPGRADE TO NEW  
CYLINDER HEADS  
ELECTRONIC CONTROL MODULES (ECM)  
ELECTRONIC SENSORS  
FUEL INJECTORS  
FUEL NOZZLES  
FUEL PUMPS  
GOVERNORS  
OIL PUMPS  
PISTONS  
SHORT BLOCKS  
STARTERS  
TURBOCHARGERS - COMPLETE  
TURBOCHARGER CARTRIDGES  
WATER PUMPS

Caterpillar Remanufactured engines for many engine arrangements are also available.

# SUPPLEMENTAL COOLANT ADDITIVES

**CUSTOMER BENEFITS:**

Protects against cavitation, foam, erosion, corrosion, and scale buildup in cooling systems.

- Provides measured coolant conditioner.

**DESCRIPTION:**

Additives deplete from the coolant with normal operation. For this reason, Supplemental Coolant Additives (SCA) must be added to all heavy duty coolants at regular intervals. In addition, when not using a fully formulated, pre-charged antifreeze, like Caterpillar's DEAC, an initial charge of SCA must be added to the cooling system. The amount of SCA added to the system is dependent on the capacity of the system.

The SCA for initial fill is provided as a liquid. SCA's for maintenance intervals are available in liquid form and as a spin-on element. (No Spin-on available for 3600 Family of Engines)

**NOTE:**

The amount of SCA added at initial fill is not the same as the amount added at maintenance intervals.

The coolant additive elements can be used with any ethylene or propylene glycol type antifreeze which meets ASTM D4985 or ASTM D5345 Specifications.

**NOTE:**

For use with standard heavy duty coolant only, not for use with Extended Life Coolant.

**PARTS NEEDED:**

Cooling System Capacity		Liquid SCA at Initial Fill	Liquid SCA at Maintenance*	Spin-on SCA Maintenance Element*
Liters	Gallons			
22-30	(6-8)	3P-2044 (1)	6V-3542 (1)	111-2370 (1)
30-38	(8-10)	3P-2044 (1) 6V-3542 (1)	111-2372 (1)	111-2369 (1)
38-49	(10-13)	3P-2044 (1) 8T-1589 (1)	111-2372 (1)	111-2369 (1)
49-64	(13-17)	3P-2044 (2)	8T-1589 (1)	9N-3368 (1)
64-83	(17-22)	3P-2044 (2) 8T-1589 (1)	111-2372 (1) 6V-3542 (1)	111-2371 (1)
83-114	(22-30)	3P-2044 (3) 8T-1589 (1)	3P-2044 (1)	9N-3718 (1)
114-163	(30-43)	3P-2044 (5)	3P-2044 (1) 6V-3542 (1)	111-2371 (2)
163-242	(43-64)	3P-2044 (8)	3P-2044 (2)	9N-3718 (2)

\* Normal maintenance period is 250 hrs. See your Operation and Maintenance Manual for complete coolant maintenance instructions.

( ) Indicates quantity required.

# MAINTENANCE PARTS

DESCRIPTION	PART NUMBER	QTY	WHERE USED	PAGE
<b>AIR INLET AND EXHAUST SYSTEM</b>				
FILTER ELEMENT AS-AIR (PRIMARY)	222-9020	1	AIR CLEANER GP	125
	256-7902	1	AIR CLEANER GP	126
FILTER ELEMENT AS-AIR (SECONDARY)	222-9021	1	AIR CLEANER GP	125
	256-7903	1	AIR CLEANER GP	126
<b>BASIC ENGINE</b>				
BREATHER (CRANKCASE)	298-4547	1	COVER GP-VALVE MECHANISM	43
GASKET-COVER (VALVE MECHANISM)	317-3064	1	COVER GP-VALVE MECHANISM	43
		1	COVER GP-VALVE MECHANISM	45
PLUG-DRAIN (ENGINE OIL)	7C-0351	1	DRAIN GP-ENGINE OIL	59
		2	PAN GP-OIL	72
<b>COOLING SYSTEM</b>				
CAP AS-COOLANT TANK	251-3227	1	RADIATOR & AFTERCOOLER GP	106
		1	RADIATOR & AFTERCOOLER GP	110
GASKET-WATER REGULATOR	281-8744	1	CONNECTION GP-WATER	91
<b>ELECTRICAL AND STARTING SYSTEM</b>				
BATTERY GP (12-VOLT, MAINTENANCE FREE, WET)	115-2422	2	BATTERY GP	207
BELT-DRIVE (WARNING BEACON)	9X-8139	1	LAMP GP-WARNING BEACON	246
BELT-SERPENTINE	226-0443	1	ALTERNATOR GP-CHARGING	198
	288-4641	1	ALTERNATOR GP-CHARGING	200
CAP AS-FILLER (BATTERY)	123-1373	6	BATTERY GP	207
FILTER (ETHER START)	358-4889	1	VALVE GP-ETHER STARTING	298
FILTER-FOAM (ALTERNATOR AIR)	364-8305	1	ALTERNATOR GP-CHARGING	198
		1	ALTERNATOR GP-CHARGING	200
FLASHER AS	295-0447	1	LIGHTING GP-ROADING	263
FLASHER AS (12 TO 24-VDC)	317-2284	1	LIGHTING GP-FLOOD & SIGNAL	259
		1	LIGHTING GP-ROADING	261
		1	LIGHTING GP-ROADING	266
		1	LIGHTING GP-ROADING	268
		1	LIGHTING GP-STOP & TAIL	271
FUSE (100-AMPERE)	235-1845	2	WIRING GP-ENGINE	308
		2	WIRING GP-ENGINE	311
		2	WIRING GP-ENGINE	315
		2	WIRING GP-ENGINE	319
FUSE (20-AMPERE)	267-2680	1	MODULE AS-FUSE	275
		1	WIRING GP-ENGINE	308
		1	WIRING GP-ENGINE	311
		1	WIRING GP-ENGINE	315
		1	WIRING GP-ENGINE	319
FUSE (30-AMPERE)	274-9872	1	MODULE AS-FUSE	275
		1	WIRING GP-ENGINE	308
		1	WIRING GP-ENGINE	311
		1	WIRING GP-ENGINE	315
		1	WIRING GP-ENGINE	319
FUSE (40-AMPERE)	278-6377	2	MODULE AS-FUSE	276
		1	WIRING GP-ENGINE	319
GLOW PLUG	292-9881	6	GLOW PLUG GP	221
KEY (BATTERY DISCONNECT)	8H-5306	1	SWITCH GP-DISCONNECT	291
KEY AS-ELECTRONIC (SECURITY)	206-5162	2	INSTALLATION GP-SECURITY	227

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