9030B Excavator
Service Manual No. 7-62192
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CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 South Service Road
Burlington, ON L7N 3M6 CANADA

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LOCTITE PRODUCT CHART

Product	Color	Similar Products	Gap (In Inches)	Strength (Steel/Steel)	Working Temperature Range-Farenheit	Fixture/Full Cure (Steel/Steel) Time	Primer	Description
#3	Dark Brown					24 hr	N/A	Form a Gasket (works with oil, fuel or grease) Pliable
80	Yellow					Fast	N/A	Weatherstrip Adhesive
123	Clear					N/A	N/A	Parts Cleaner Fluid
220	Blue	290	0.003	57/143 in lbs	-65 to +250	6 min/24 hrs	747	Wicking Threadlocker
221	Purple	222	0.005	75/44 in lbs	-65 to +300	2 min/24 hrs	747	Low Strength Threadlocker
222	Purple		0.005	53/30 in lbs	-65 to +300	20 min/24 hrs	764	Low Strength Threadlocker (Small Screws)
225	Brown	222	0.010	45/25 in lbs	-65 to +300	7 min/24 hrs	747	Low Strength Threadlocker
242	Blue		0.005	80/50 in lbs	-65 to +300	10 min/24 hrs	764	Medium Strength Threadlocker
262	Red	271	0.005	160/190 in lbs	-65 to +300	5 min/24 hrs	747	High Strength Threadlocker
270	Green	271	0.007	160/320 in lbs	-65 to +300	3 min/24 hrs	747	High Strength Threadlocker
271	Red	262	0.007	160/320 in lbs	-65 to +300	10 min/24 hrs	764	High Strength Threadlocker
272	Red	620	0.007	180/220 in lbs	-65 to +450	30 min/24 hrs	764	High Temperature, High Strength
275	Green	277	0.010	210/300 in lbs	-65 to +300	3 min/24 hrs	747	High Strength Threadlocker
277	Red		0.010	225/300 in lbs	-65 to +300	60 min/24 hrs	764	High Strength Threadlocker
290	Green		0.003	85/350 in lbs	-65 to +300	6 min/24 hrs	764	Wicking Threadlocker
*404	Clear	495	0.006	3200 psi	-65 to +180	30 sec/24 hrs	NA	Instant Adhesive
*406	Clear		0.004	3200 psi	-65 to +180	15 sec/24 hrs	N/A	Surface Insensitive Adhesive
*409	Clear	454	0.008	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gel Instant Adhesive
*414	Clear		0.006	2500 psi	-65 to +180	30 sec/24 hr	N/A	Instant Adhesive
*415	Clear	454	0.010	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gap Filling Instant Adhesive (Metals)
*416	Clear	454	0.010	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gap Filling Instant Adhesive (Plastics)
*420	Clear		0.002	2500 psi	-65 to +180	15 sec/24 hrs	N/A	Wicking Instant Adhesive
*422	Clear	454	0.020	2800 psi	-65 to +180	60 sec/24 hrs	N/A	Gap Filling Instant Adhesive
*430	Clear		0.005	2500 psi	-65 to +180	20 sec/24 hrs	N/A	Metal Bonding Adhesive
*445	White/Black		0.250	2000 psi	-65 to +180	5 min/24 hrs	N/A	Fast Setting 2 Part Epoxy
*454	Clear		0.010	3200 psi	-65 to +180	15 sec/24 hrs	N/A	Surface Insensitive Gen Instant Adhesive
*495	Clear		0.004	2500 psi	-65 to +180	20 sec/24 hrs	N/A	General Purpose Instant Adhesive
*496	Clear		0.005	2500 psi	-65 to +180	20 sec/24 hrs	N/A	Metal Bonding Adhesive
504	Brt Orange	515	0.030	750 psi	-65 to +300	90 min/24 hrs	None	Rigid Gasket Eliminator
509	Light Blue		0.020	750 psi	-65 to +320	6 hr/72 hrs	764	Flange Sealant
510	Red		0.020	1000 psi	-65 to +400	30 min/24 hrs	764	High Temperature, GAsket Eliminator
515	Purple		0.010	750 psi	-65 to +300	1 hr/24 hrs	764	Gasket Eliminator 515

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* Products 404-496 (except for #445) are all instant adhesives (super glues) they differ mostly in viscosity

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LOCTITE PRODUCT CHART

Product	Color	Similar Products	Gap (In Inches)	Strength (Steel/Steel)	Working Temperature Range-Farenheit	Fixture/Full Cure (Steel/Steel) Time	Primer	Description
518	Red	515	0.030	500psi	-65 to +300	1hr/24 hrs	764	Gasket Eliminator 518 for Aluminum
542	Brown	569	N/A	132/92 in lbs	-65 to +300	2 hr/24 hrs	747	Hydraulic Sealant
545	Purple		N/A	25/20 in lbs	-65 to +300	4 hr/24 hrs	747	Low Strength Pneumatic/Hydraulic Sealant
549	Orange	504	0.020	2500 psi	-65 to +300	2 hr/24 hrs	747	Instant Seal Plastic Gasket
554	Red	277	0.015	240/240 in lbs	-65 to +300	2 to 4 hrs/24 hrs	764	Refrigerant Sealant
567	White	592	N/A	500 psi	-65 to +400	4 hrs/24 hrs	764	Pipe Sealant for Stainless Steel
568	Orange	277	0.015	2500 psi	-65 to +300	12 hrs/24 hrs	764	Plastic Gasket
569	Brown	545	0.010	40/25 in lbs	-65 to +300	1 hr/24 hrs	764	Hydraulic Sealant
570	Brown	592	N/A	25/40 in lbs	-65 to +300	6 hrs/72 hrs	764	Steam Sealant
571	Brown	592	0.015	40/20 in lbs	-65 to +300	2 to 4 hrs/24 hrs	764	Pipe Sealant
572	White	578.575	N/A	80/27 in lbs	-65 to +300	24 hrs/72 hrs	None	Gasketing
592	White		0.020	500 psi	-65 to +400	4 hrs/72 hrs	736	Pipe Sealant with Teflon
593	Black		0.250	400 psi	-95 to +400	30 min/24 hrs	N/A	RTV Silicone
601	Green	609	0.005	3000 psi	-65 to +300	10 min/24 hrs	764	Current PIN #609
609	Green		0.005	3000 psi	-65 to +300	10 min/24 hrs	764	General Purpose Retaining Compound
620	Green	640	0.015	3000 psi	-65 to +450	30 min/24 hrs	747	High Temperature Retaining Compound
635	Green	680	0.010	4000 psi	-65 to +300	1 hr/24 hrs	747	High Strength Retaining Compound
638	Green	680	0.015	4100 psi	-65 to +300	10 min/24 hrs	747	High Strength Retaining Compound
640	Green	620	0.007	3000 psi	-65 to +400	1 hr/24 hrs	747	High Temperature Retaining Compound
660	Silver		0.020	3000 psi	-65 to +300	20 min/24 hrs	764	Quick Metal
675	Green	609	0.005	3000 psi	-65 to +300	20 min/24 hrs	747	General Purpose Retaining Compound
680	Green	635	0.015	4000 psi	-65 to +300	10 min/24 hrs	747	High Strength Retaining Compound
706	Clear	755	N/A	N/A	N/A	N/A	N/A	Cleaning Solvent
707	Amber		N/A	N/A	N/A	N/A	N/A	Activaltor for Structural Adhesives
736	Amber		N/A	N/A	N/A	N/A	N/A	Primer NF
738	Amber		N/A	N/A	N/A	N/A	N/A	Depend Activator
747	Yellow	N/A	N/A	N/A	N/A	N/A	N/A	Primer T
751	Clear		N/A	N/A	N/A	N/A	N/A	Activator for Structural Adhesives
755	Clear		N/A	N/A	N/A	N/A	N/A	Cleaning Solvent
764	Green		N/A	N/A	N/A	N/A	N/A	Primer N
767	Silver		N/A	N/A	-65 to +1600	N/A	N/A	Anti-Seize Lubricant

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Section

1001

SAFETY, GENERAL INFORMATION AND TORQUE SPECIFICATIONS

CASE CORPORATION

Rac 7-62010

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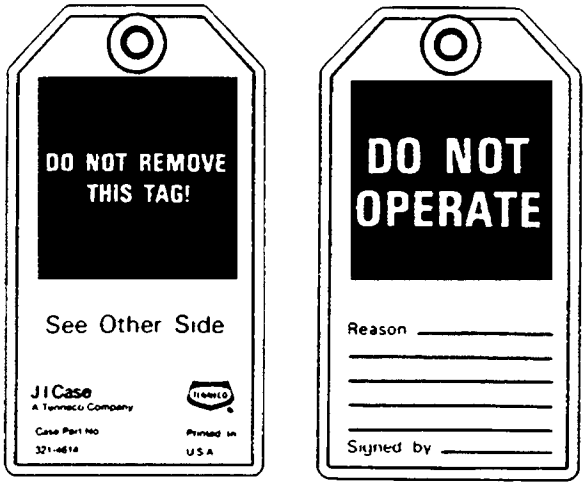
SAFETY

This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death. SB001

To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.

Put the warning tag shown below on the key for the keyswitch when servicing or repairing the machine. One warning tag is supplied with each machine. Additional tags Part Number 331-4614 are available from your service parts supplier.



1001-01

WARNING: *Read the operator's manual to familiarize yourself with the correct control functions.* 46-27

WARNING: *Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.* 48-55

WARNING: *This is a one man machine, no riders allowed.* 35-8

WARNING: *Before starting engine, study Operator's Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.*
It is your responsibility to understand and follow manufacturers instructions on machine operation, service and to observe pertinent laws and regulations. Operator's and Service Manuals may be obtained from your Case dealer. SA055

WARNING: *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.* 45-3A

WARNING: *When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.* 35-4

WARNING: *When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.* 47-44

WARNING: *When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.* 47-45

WARNING: *Use insulated gloves or mittens when working with hot parts.* 47-41A

CAUTION: *Lower all attachments to the ground or use stands to safely support the attachments before you do any maintenance or service.* 49-11

CAUTION: *Pin sized and smaller streams of hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure does penetrate the skin, seek medical treatment immediately. Maintain all hoses and tubes in good condition. Make sure all connections are tight. Make a replacement of any tube or hose that is damaged or thought to be damaged. DO NOT use your hand to check for leaks, use a piece of cardboard or wood.* 40-6A

CAUTION: *When removing hardened pins such as a pivot pin, or a hardened shaft, use a soft head (brass or bronze) hammer or use a driver made from brass or bronze and a steel head hammer.* 46-17

CAUTION: *When using a hammer to remove and install pivot pins or separate parts using compressed air or using a grinder, wear eye protection that completely encloses the eyes (approved goggles or other approved eye protectors).* 46-13

CAUTION: *Use suitable floor (service) jacks or chain hoist to raise wheels or tracks off the floor. Always block machine in place with suitable safety stands.* 40-7A

CAUTION: *When servicing or repairing the machine, keep the shop floor and operator's compartment and steps free of oil, water, grease, tools, etc. Use an oil absorbing material and/or shop cloths as required. Use safe practices at all times.* 40-8

CAUTION: *Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this Service Manual.* 40-10

DANGER: *Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. Open the doors and get outside air into the area.* 48-56

WARNING: *When the battery electrolyte is frozen, the battery can explode if (1), you try to charge the battery, or (2), you try to jump start and run the engine. To prevent the battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.* SA033

GENERAL INFORMATION

CLEANING

Clean all metal parts except bearings, in a suitable cleaning solvent or by steam cleaning. Do not use caustic soda for steam cleaning. After cleaning, dry and put oil on all parts. Clean oil passages with compressed air. Clean bearings in a suitable cleaning solvent, dry the bearings completely and put oil on the bearings.

INSPECTION

Check all parts when the parts are disassembled. Replace all parts that have wear or damage. Small scoring or grooves can be removed with a hone or crocus cloth. Complete a visual inspection for indications of wear, pitting and the replacement of parts necessary to prevent early failures.

BEARINGS

Check bearings for easy action. If bearings have a loose fit or rough action replace the bearing. Wash bearings with a suitable cleaning solvent and permit to air dry. DO NOT DRY BEARINGS WITH COMPRESSED AIR.

NEEDLE BEARINGS

Before you press needle bearings in a bore always remove any metal protrusions in the bore or edge of the bore. Before you press bearings into position put petroleum jelly on the inside and outside diameter of the bearings.

GEARS

Check all gears for wear and damage. Replace gears that have wear or damage.

OIL SEALS, O-RINGS AND GASKETS

Always install new oil seals, O-rings and gaskets. Put petroleum jelly on seals and O-rings.

SHAFTS

Check all shafts that have wear or damage. Check the bearing and oil seal surfaces of the shafts for damage.

SERVICE PARTS

Always install genuine Case service parts. When ordering refer to the Parts Catalog for the correct part number of the genuine Case replacement items. Failures due to the use of other than genuine Case replacement parts are not covered by warranty.

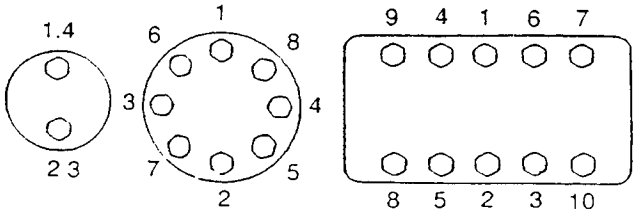
LUBRICATION

Only use the oils and lubricants specified in the Operator's or Service Manuals. Failures due to the use of non-specified oils and lubricants are not covered by warranty.

STANDARD TORQUE DATA FOR CAP SCREWS AND NUTS

TIGHTENING OF CAP SCREWS, NUTS

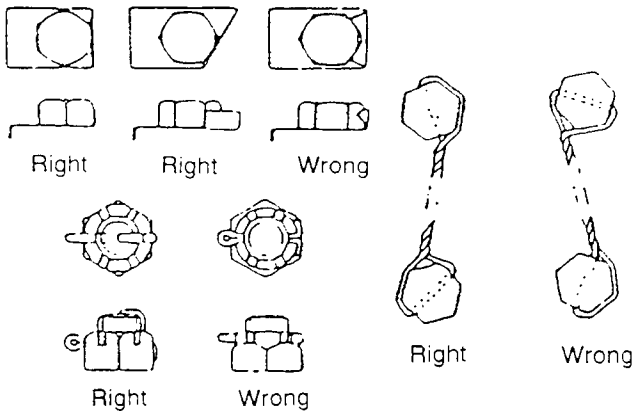
Tighten alternately so that tightening torque can be applied evenly. The numbers in the figure below indicate the order of tightening.



1001-02

Apply engine oil to the thread portion of the cap screw so that uniform tightening torque is obtained.

The cap screws and nuts that cannot be inspected externally or those as indicated in the assembly/installation sections should be saftied with lockwire, cotter pin or bent washer.



1001-03

Cap screws which have had Loctite used (white residue remains after removal) should be cleaned with light oil or suitable cleaning solvent and dried. Apply 2-3 drops of Loctite to the thread portion of the cap screw and then tighten.

TORQUE TABLE

Tighten cap screws and nuts according to the table below if there are no other special instructions.

Cap Screw Name Size (Size)			M6	M8	M10	M12	M14	M16	M18	M20
Cap Screw	Spanner	[mm]	10	13	17	19	22	24	27	30
		[in.]	0.39	0.51	0.67	0.75	0.87	0.95	1.06	1.18
	Tightening torque	[Nm]	6.9	15.7	32.3	58.8	98.0	137.2	196.0	274.0
		[lb-ft]	5.1	11.6	23.9	43.4	72.3	101.2	144.6	202.4
Socket Head Cap Screw	Spanner	[mm]	5	6	8	10	12	14	14	17
		[in.]	0.20	0.24	0.32	0.39	0.47	0.55	0.55	0.67
	Tightening torque	[Nm]	8.8	21.6	42.1	78.4	117.6	176.4	245.0	343.0
		[lb-ft]	6.5	15.9	31.1	57.8	86.8	130.1	180.8	253.1

Section

1002

SPECIFICATIONS

CASE CORPORATION

Rac 7-62940

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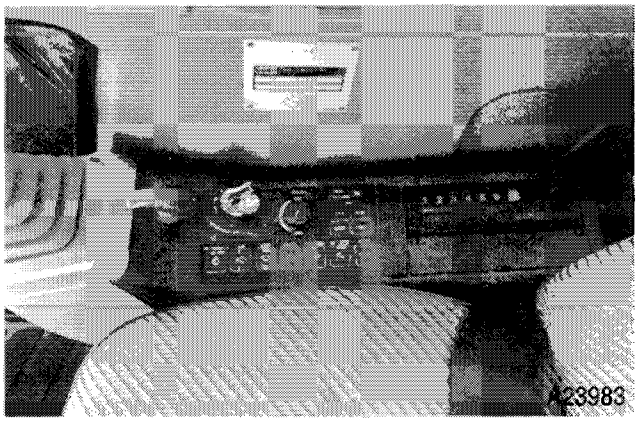
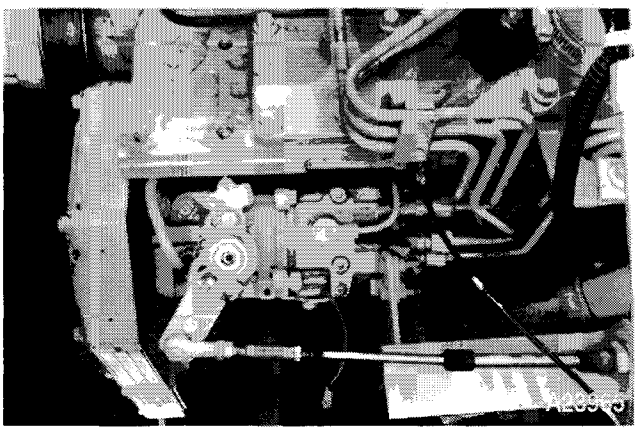
MODEL AND PIN NUMBERS

When ordering parts or when requesting information or assistance, always give the identification numbers of your machine. Write the model and PIN numbers of your machine on the lines below.





Machine Model Number _____

Machine PIN Number _____

Engine Serial Number _____

GENERAL SPECIFICATIONS

Capacities

Engine Crank Case Capacity	14.2 liters	3.8 US gallons
Engine Cooling System	25.5 liters	6.7 US gallons
Fuel Tank	310 liters	81.9 US gallons
Hydraulic Oil Tank Capacity	120 liters	31.7 US gallons
Total Hydraulic System Capacity	200 liters	53 US gallons
Final Drive Case Capacity	4.7 liters	1.2 US gallons
Swing Drive Case Capacity	5.0 liters	1.3 US gallons
Track Front Idlers	180 cc	5.94 oz
Track Lower Rollers	210 cc	6.93 oz
Track Upper Roller	50 cc	1.65 oz

NOTE: *These capacities are only a guide to the quantities. Always use the dipstick, sight gauges or level plug to make sure that fluid levels are correct.*

Drawbar Pull

Drawbar Pull	18656 kg	41140 lb

Drive Speed

Drive Speed: High	5.5 km/h	3.4 mph
Drive Speed: Middle	3.3 km/h	2.0 mph
Drive Speed: Low	2.3 km/h	1.4 mph

Electrical System

Type of System	24 volts negative ground
Alternator	
Manufacturer	Robert Bosch
Output	45 amperes
Batteries	
Number of batteries required	2
Voltage of each battery	12 volts
Reserve capacity	160 minutes
Cold cranking capacity at -17°C (0°F)	800 amperes
Load for capacity (load) test	400 amperes
Starter Motor	
Manufacturer	Nippondenso
Voltage	24 volts

Fluids and Lubricants

Batteries	add drinking or distilled water
Engine Coolant Solution	refer to page 16
Engine Lubrication	refer to page 16
Fuel	refer to entry on page 5
Hydraulic System	CASE MS-1210 TCH FLUID
Final Drive Lubricant	API GL-4 90
Swing Drive Case Lubricant	API GL-4 90
Track Roller and Front Idler Lubricant	Case IH No. 1 Single Grade engine oil SAE 80
Turntable Ring Gear Lubricant	No. 2 EP lithium grease
Grease Fitting Lubricant	No. 2 EP lithium grease

Fuel

Use Number Two Diesel fuel having a grade of ASTM D 975-Grade 2-D.

Hydraulic System

Hydraulic Pump		
Kawasaki K3V112DT-1M4R-9C12 (KRJ3785)		
Displacement	96.9 cm^3/rev x 2	5.91 in^3/rev x 2
Working Pressure: Set	320 Bar	4646 psi
Working Pressure: Maximum	350 (travel) Bar	5082 (travel) psi
Speed		2070 min^{-1}
Maximum Flow	201 l/min^{-1}	53.1 gpm^{-1}
Minimum Flow	50 l/min^{-1}	13.21 gpm^{-1}
Regulator		
Proportional Pressure Reducing Valve		
Maximum Primary Pressure	39.2 Bar	569 psi
Maximum Back Pressure (Allowable Pressure)	9.8 Bar	142 psi
Secondary Pressure Range Setting	0 ~ 39.2 Bar	0 ~ 569 psi
Maximum Flow Rate	6 l/min	1.6 gpm
Flow in Drain Line:	Maximum 0.2 l (0.4 pints)/min at secondary pressure = 0 ~ 39.2 Bar	0 ~ 569 psi
	Maximum 1.2 l (2.5 pints)/min at secondary pressure = 19.6 Bar	285 psi
Hydraulic Oil Test Temperature	45 ~ 55°C	113 ~ 131°F
Circuit Relief Valves:		
Main Relief: standard	318 ±20 Bar	4612 ±290 psi
Main Relief: pressure raising	343 ±20 Bar	4975 ±290 psi
Boom Port Relief: raising	382 ±15 Bar	5540 ±217 psi
Boom Port Relief: lowering	245 ±15 Bar	3553 ±217 psi
Bucket Port Relief: open, close	382 ±15 Bar	5540 ±217 psi
Arm Port Relief: open, close	382 ±15 Bar	5540 ±217 psi
Swing Port Relief; left, right	304 ±15 Bar	4409 ±217 psi
Left Travel Port Relief: rear, front	402 ±20 Bar	5830 ±290 psi
Right Travel Port Relief: rear, front	402 ±20 Bar	5830 ±290 psi
Pilot Relief	40 ±3 Bar	580 ±43 psi

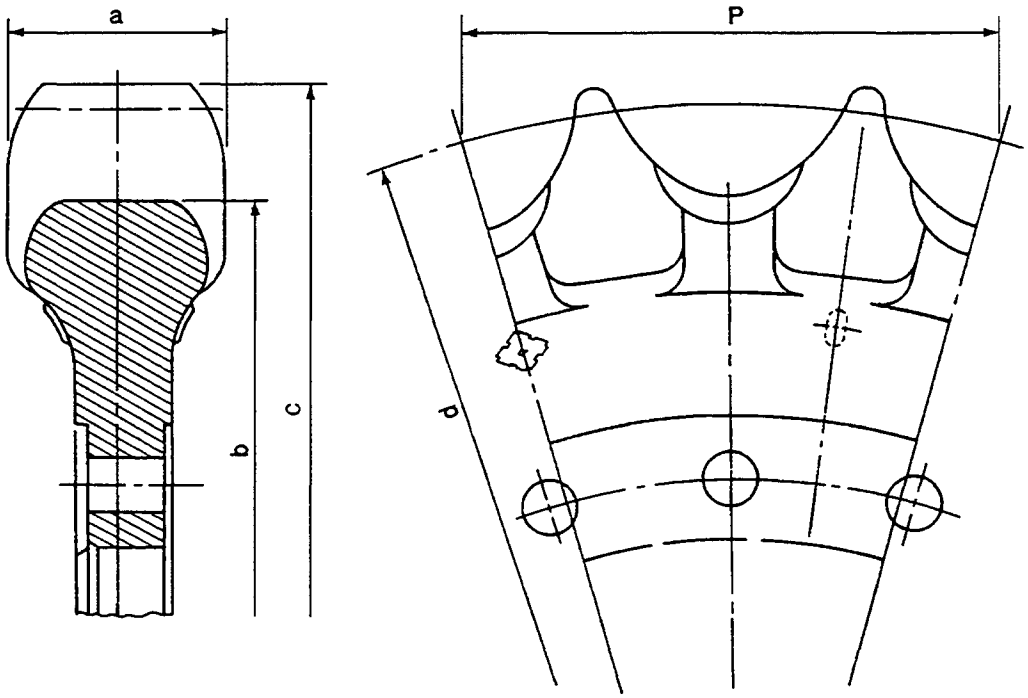
Tracks, Rollers and Idlers

Lower Mechanism (with standard 600 grouser shoe)

Total Length	4170 mm	13 ft 8.3 in.
Total Width	2800 mm	9 ft 2.3 in.
Total Weight (approximate)	6700 kg	14774 lb

Drive Sprocket

Sprocket:	a	standard value	66 mm	2.60 in.
		service limit	60 mm	2.36 in.
	b	standard value	582.5 mm	22.95 in.
		service limit	576.5 mm	22.71 in.
	c	standard value	659 mm	25.96 in.
		service limit	653 mm	25.73 in.
	d	standard value	644.6 mm	25.40 in.
		service limit	—	—
	P	standard value	190 mm	7.49 in.
		service limit	—	—



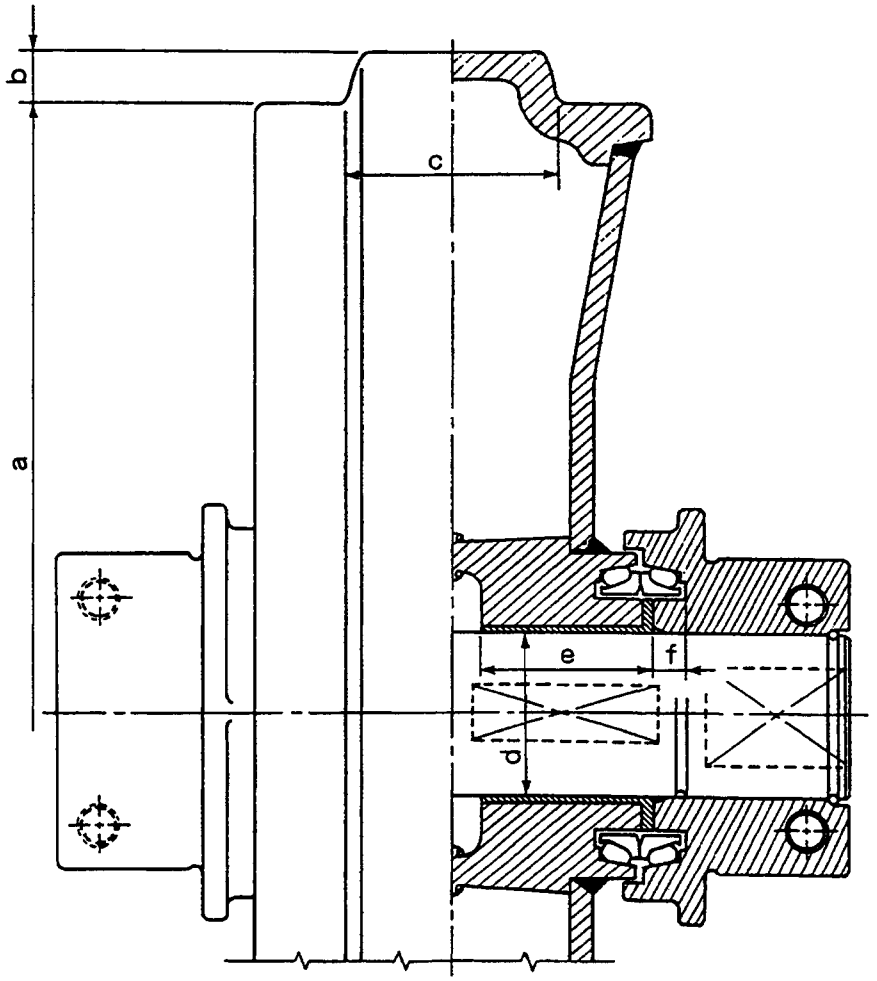
Drive Sprocket

NOTE: *Refer to Gauge Table for measurement gauges to be used.*

1002-3

Take-Up Roller

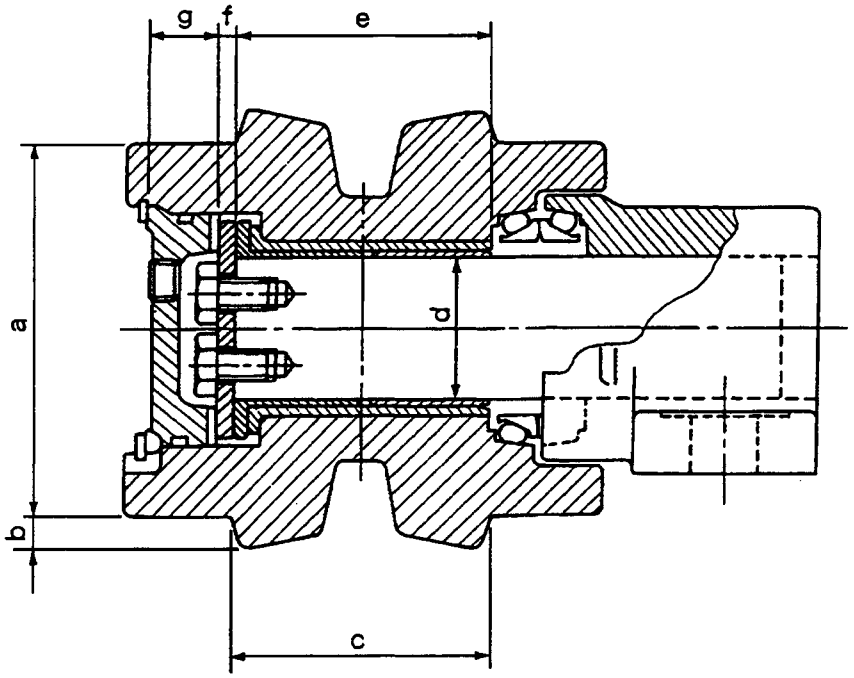
Take-Up Roller:	a	standard value	494 mm	19.46 in.
		service limit	490 mm	19.31 in.
	b	standard value	21 mm	0.83 in.
		service limit	—	—
	c	standard value	84 mm	3.31 in.
		service limit	80 mm	3.15 in.
Shaft:	d	standard value	65 mm	2.56 in.
		service limit	64.5 mm	2.54 in.
Bushing:	d	standard value	65 mm	2.56 in.
		service limit	65.8 mm	2.59 in.
	e	standard value	69 mm	2.72 in.
		service limit	68.6 mm	2.70 in.
Hub:	f	standard value	12.4 mm	0.49 in.
		service limit	11.9 mm	0.47 in.



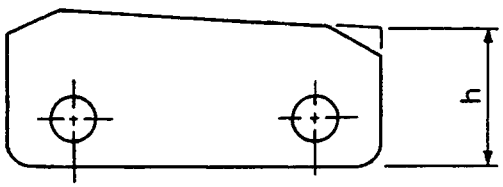
Take-Up Roller

NOTE: *Refer to Gauge Table for measurement gauges to be used.*

Upper Roller				
Carrier Roller:	a	standard value	120 mm	4.73 in.
		service limit	112 mm	4.41 in.
	b	standard value	10 mm	0.39 in.
		service limit	—	—
	c	standard value	85 mm	3.35 in.
		service limit	79 mm	3.11 in.
Shaft:	d	standard value	46 mm	1.81 in.
		service limit	45.5 mm	1.79 in.
Bushing:	d	standard value	46 mm	1.81 in.
		service limit	46.8 mm	1.84 in.
	e	standard value	83 mm	3.27 in.
		service limit	82.6 mm	3.25 in.
Thrust Plate:	f	standard value	5.5 mm	0.22 in.
		service limit	5.0 mm	0.20 in.
Cover:	g	standard valve	23 mm	0.91 in.
		service limit	22.5 mm	0.89 in.
Slide Plate				
Plate:	h	standard value	50.7 mm	2.00 in.
		service limit	40 mm or until chamfering is gone	1.58 in. or until chamfering is gone



Upper Roller

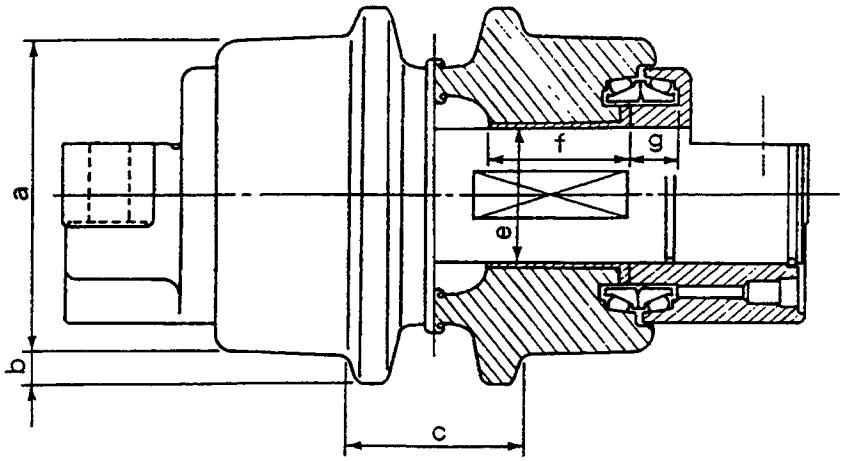


Slide Plate

NOTE: *Refer to Gauge Table for measurement gauges to be used.*

Lower Roller (Inside)

Track Roller (Inside):	a	standard value	150 mm	5.91 in.
		service limit	142 mm	5.59 in.
	b	standard value	15 mm	0.59 in.
		service limit	—	—
	c	standard value	86 mm	3.39 in.
		service limit	80 mm	3.15 in.
Shaft:	e	standard value	65 mm	2.56 in.
		service limit	64.5 mm	2.54 in.
Bushing:	e	standard value	65 mm	2.56 in.
		service limit	65.8 mm	2.59 in.
	f	standard value	69 mm	2.72 in.
		service limit	68.6 mm	2.70 in.
Collar:	g	standard value	28.8 mm	1.13 in.
		service limit	28.3 mm	1.11 in.



Lower Roller (Inside)

NOTE: *Refer to Gauge Table for measurement gauges to be used.*

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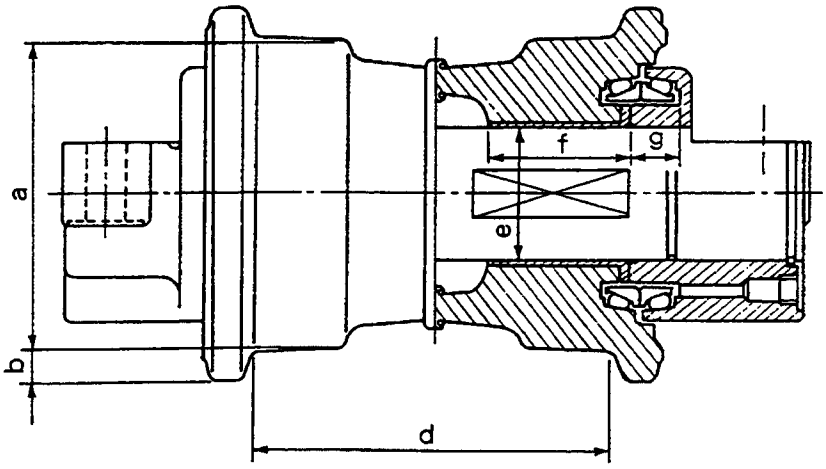
Lower Roller (Outside)

Track Roller:	a	standard value	150 mm	5.91 in.
		service limit	142 mm	5.59 in.
	b	standard value	15 mm	0.59 in.
		service limit	—	—
	d	standard value	173 mm	6.82 in.
		service limit	179 mm	7.05 in.
Shaft:	e	standard value	65 mm	2.56 in.
		service limit	64.5 mm	2.54 in.
Bushing:	e	standard value	65 mm	2.56 in.
		service limit	65.8 mm	2.59 in.
	f	standard value	69 mm	2.72 in.
		service limit	68.6 mm	2.70 in.
Collar:	g	standard value	28.8 mm	1.13 in.
		service limit	28.3 mm	1.11 in.



Lower Roller (Outside)

NOTE: *Refer to Gauge Table for measurement gauges to be used.*

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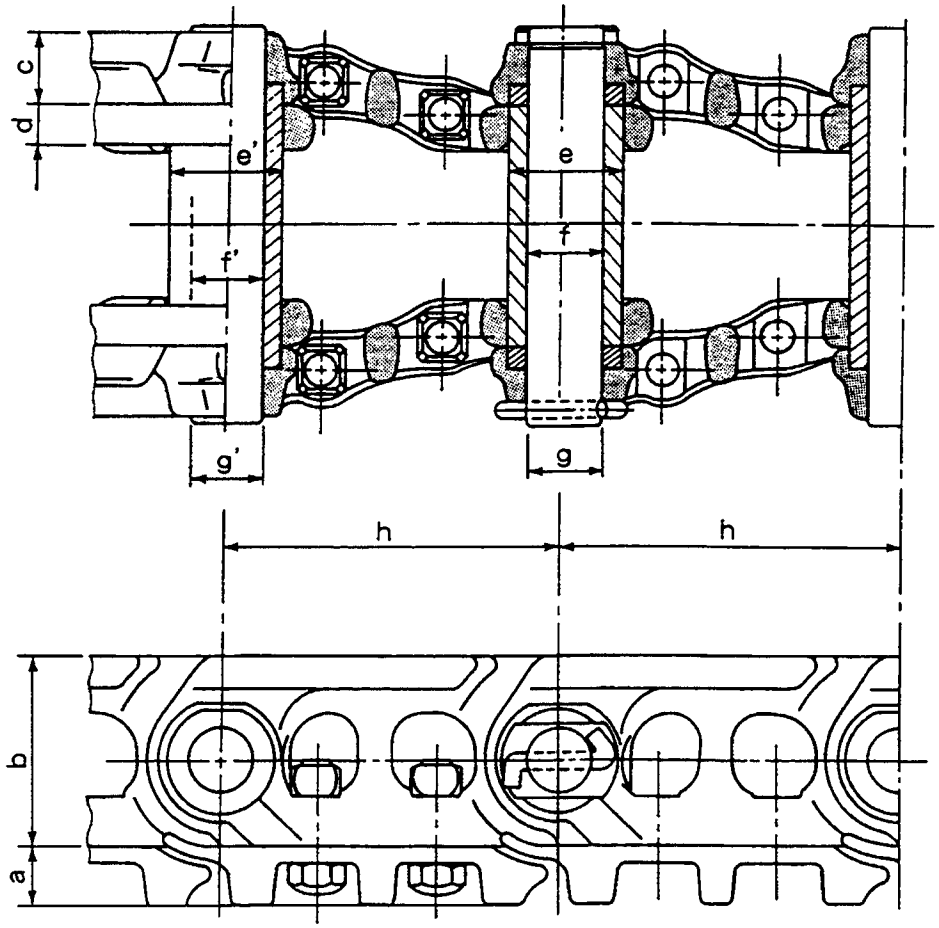
Track Shoe (Grouser Shoe)

Shoe Plate:	a	standard value	34.5 mm	1.36 in.
		service limit	21.5 mm	0.85 in.
Link:	b	standard value	106 mm	4.18 in.
		service limit	101 mm	3.98 in.
	c	standard value	35 mm	1.38 in.
		service limit	33 mm	1.30 in.
	d	standard value	23 mm	0.91 in.
		service limit	21 mm	0.83 in.
Master Bushing:	e	standard value	58.72 mm	2.31 in.
		service limit	57.5 mm	2.27 in.
	f	standard value	37 mm	1.46 in.
		service limit	38 mm	1.50 in.
Master Pin:	g	standard value	36.3 mm	1.43 in.
		service limit	35.5 mm	1.40 in.
Link Pitch:	h	standard value	190 mm	7.49 in.
		service limit	195 mm	7.68 in.
Track Bushing:	e'	standard value	58.72 mm	2.31 in.
		service limit	57.5 mm	2.27 in.
	f'	standard value	37 mm	1.46 in.
		service limit	38 mm	1.50 in.
Track Pin:	g'	standard value	36.65 mm	1.44 in.
		service limit	35.5 mm	1.40 in.



Track Shoe (Grouser Shoe)

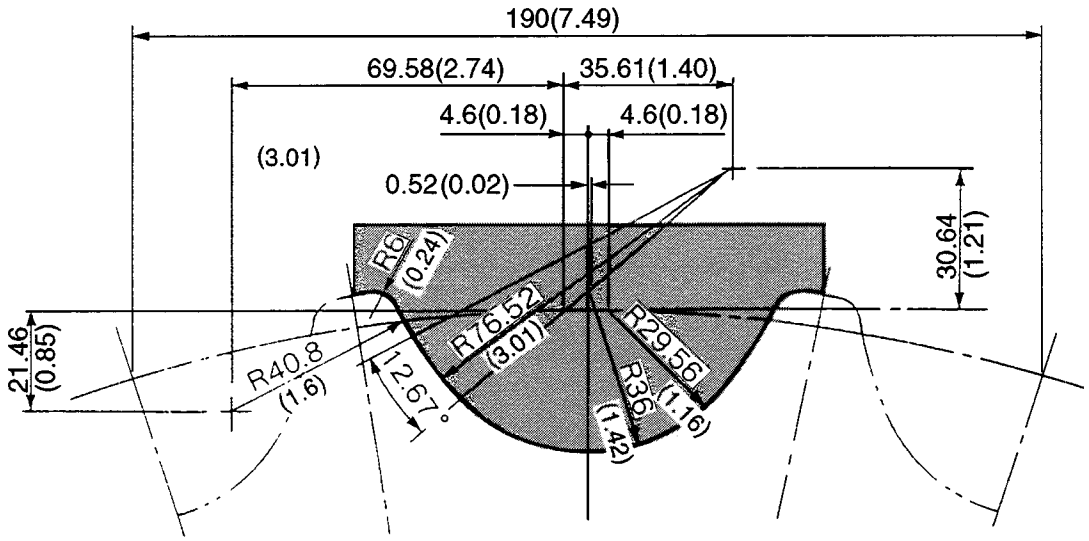
NOTE: *Refer to Gauge Table for measurement gauges to be used.*

Weights

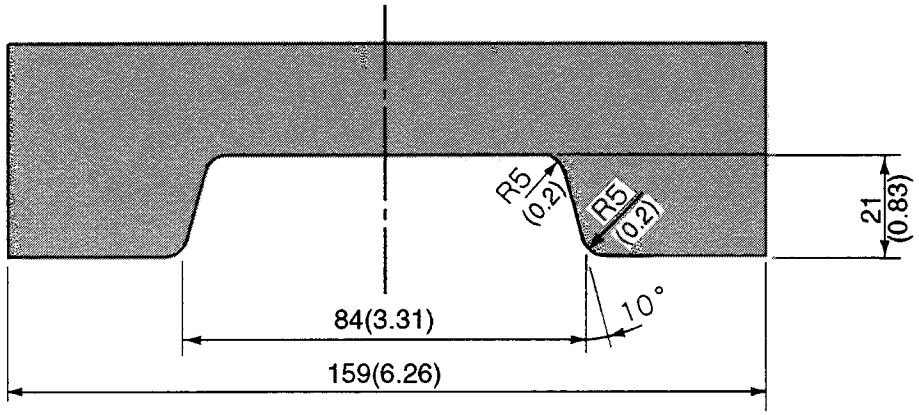
Operating Weight	20200 kg	44540 lb
Counterweight	3710 kg	8180 lb
Engine	423 kg	933 lb
Turntable Bearing	216 kg	476 lb
Attachments		
Boom with Cylinder	2050 kg	4520 lb
Arm with Links and Cylinder	974 kg	2148 lb
Buckets		
No side cutter:		
75. 5 cm (29.75 inch) Bucket	507 kg	1118 lb
108 cm (42.75 inch) Bucket	635 kg	1400 lb
121.5 cm (47.8 inch) Bucket	678 kg	1495 lb
134.5 cm (53 inch) Bucket	730 kg	1610 lb
147.5 cm (58.1 inch) Bucket	743 kg	1638 lb
109.1 cm (43 inch) Heavy Digging Bucket	722 kg	1592 lb
With side cutter:		
85.5 cm (33.7 inch) Bucket	507 kg	1118 lb
118.5 cm (46.7 inch) Bucket	635 kg	1400 lb
131.5 cm (51.8 inch) Bucket	678 kg	1495 lb
144.5 cm (57 inch) Bucket	730 kg	1610 lb
119.1 cm (47 inch) Heavy Digging Bucket	722 kg	1592 lb
Cylinders		
Boom Cylinder (each)	179 kg	395 lb
Arm Cylinder	277 kg	611 lb
Bucket Cylinder	148 kg	326 lb

GAUGE TABLE

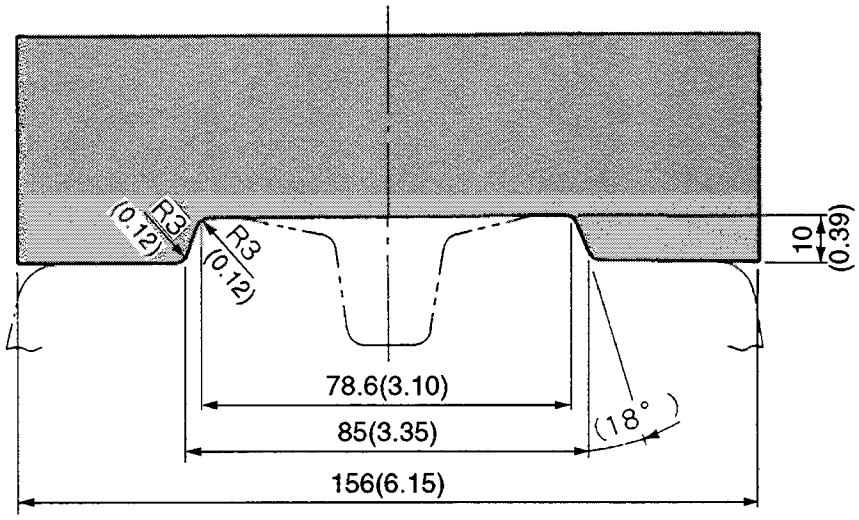
NOTE: *Units = mm (in.)*



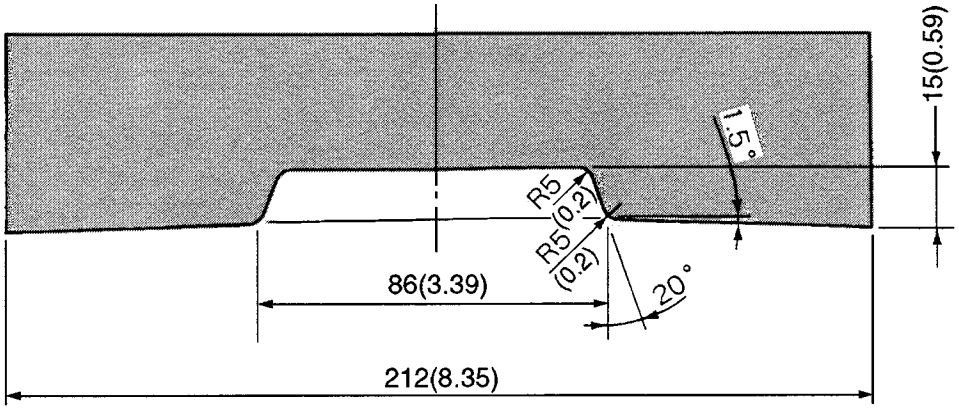
For Drive Sprocket 1002-9



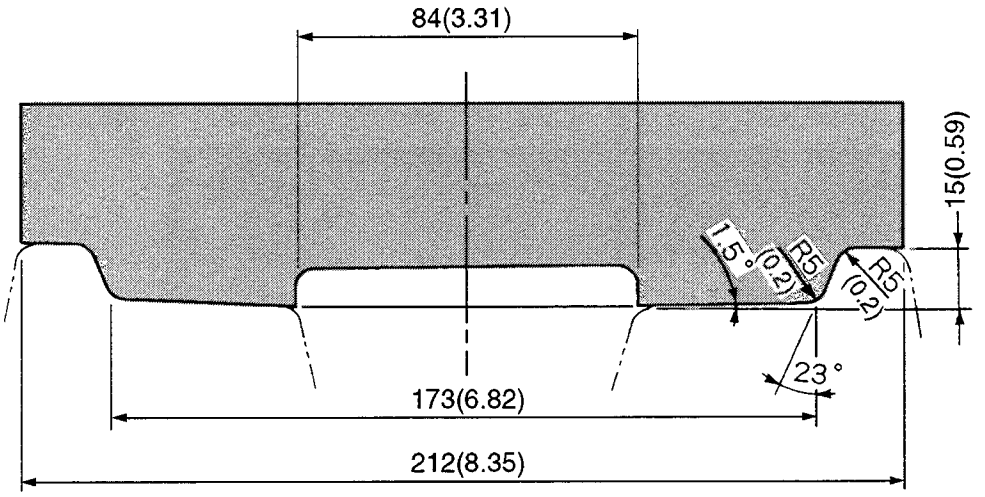
For Take-Up Roller 1002-10



For Upper Roller 1002-11



For Lower Roller (inside) 1002-12



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For Lower Roller (outside)

RUN-IN INSTRUCTIONS

Engine Lubrication

Fill the engine crankcase with CE/SF or CF-4 service classification oil that has the correct viscosity rating for the ambient air temperature. Refer to Engine Lubrication on page 16. Install new oil filters, after the engine has been rebuilt.

Run-In Procedure For Rebuilt Engine

STEP 1

Disconnect the wire to the electric shut-off on the injection pump so that the engine will not start. Crank the engine for 30 seconds until there is oil pressure, then reconnect the wire.

STEP 2

Remove the air from the cooling system at the temperature sending unit.

STEP 3

Run the engine at 1000 rpm minimum load for 5 minutes and check for oil leaks.

STEP 4

During the Run-In, continue to check the oil pressure, coolant level, and coolant temperature.

Run-In Procedure For Rebuilt Engine (With A Dynamometer)

The following procedure must be followed when using a PTO dynamometer to Run-In the engine. The dynamometer will control the engine load at each speed and will remove stress on new parts during Run-In.

During the Run-In, continue to check the oil pressure, coolant level and coolant temperature.

STEP	TIME	ENGINE SPEED	DYNAMOMETER SCALE LOAD
1	5 Minutes	1000 rpm	50
2	5 Minutes	1100 rpm	1/2
3	5 Minutes	2200 rpm	Full

Run-In Procedure For Rebuilt Engines (Without A Dynamometer)

STEP	TIME	ENGINE SPEED	LOAD
1	5 Minutes	1000 rpm	No Load
2	5 Minutes	1100 rpm	Light Load
3	5 Minutes	2200 rpm	Light Load

Run-In Procedure

For the first 8 hours, operate the engine at full throttle maintaining a normal load. DO NOT "baby" the engine, but avoid converter or hydraulic stall. The engine must not be "lugged" below the rated engine rpm (Do not stall the engine more than 10 seconds).

Engine Cooling System

Coolant Solution ..... 45% Water and 55% Ethylene Glycol

IMPORTANT: *When using ethylene glycol solutions, always have a minimum of 55% ethylene glycol in the system. Do not put more than 55% ethylene glycol in the cooling system unless the ambient air temperature will be less than -37°C (-34°F). If the air temperature is less than -37°C (-34°F), add additional ethylene glycol according to the manufacturer's instructions.*

Thermostat ..... Starts to open at 83°C (182°F)
Fully open at 95°C (203°F)
Radiator Cap..... 1.03 Bar (15 psi)

Engine Lubrication

Engine Oil Type

Case IH No. 1 engine oil is recommended for use in the Case engine. Case IH engine oil will lubricate the engine under all operating conditions. If Case IH No. 1 Multi-Viscosity engine oil is not available, Case IH No. 1 Single Grade engine oil can be used.

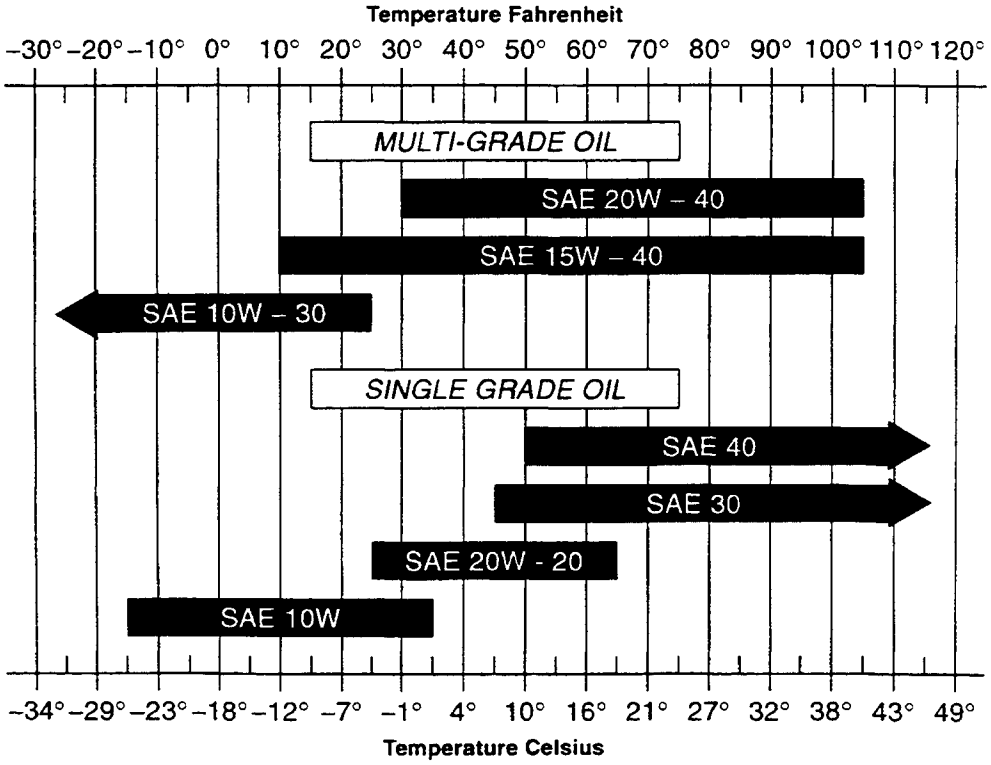
If Case IH No. 1 Multi-Viscosity or Single Grade engine oil is not available, use only oil meeting API engine oil service category CE.

See the chart below for recommended viscosity at ambient air temperature ranges.

NOTE: *DO NOT put performance additives or other oil additive products into the engine crankcase.*

Engine Lubrication Oil Viscosity

Engine Oil Viscosity Chart



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GENERAL ENGINE SPECIFICATIONS

General

Make and Model		JI Case, 6T-590
Type		6 cylinder, turbocharged 4 stroke cycle
Horsepower	128 hp at 2000 rpm	95 kw at 2000 rpm
Firing Order		1, 5, 3, 6, 2, 4
Bore and Stroke	102 mm x 120 mm	4.02 in. x 4.72 in.
Piston Displacement	5.9 liters	359 in^3
Compression Ratio		17.3 to 1
Valve Tappet Clearance		
Exhaust (Cold)	0.508 mm	0.020 in.
Intake (Cold)	0.254 mm	0.010 in.
Engine Speeds		
No Load Governed Speed		2140 to 2280 rpm
Rated Engine Speed		2000 rpm
Stall Speed, Full Load (minimum)		2040 rpm
Engine Idle Speed		900 rpm

Pistons and Connecting Rods

Rings per Piston	3
Number of Compression Rings	2
Number of Oil Rings (two piece)	1
Type of Pins	Full Float
Type of Bearings	Steel Back Leaded Bronze

Main Bearings

Number of Bearings	7
Type of Bearings	Replaceable

Engine Lubricating System

Type of System		Pressure and Spray Lubrication
Oil Pressure (when engine warm and operating at rated speed)	2.97 to 3.73 Bar	43 to 54 psi
Oil Pump		Rotor Type
Oil Filter		Full Flow Turn-on Type
Oil Capacity		
(with filter change)	15.1 liters	16 US quarts
(without filter change)	14.2 liters	15 US quarts

Fuel System

Fuel Injection Pump		Robert Bosch
Pump Timing		Top Dead Center
Fuel Injectors		Bosch 7 mm
Opening Pressure (New)	245 to 253 Bar	3553 to 3670 psi
Opening Pressure (Used)	188 to 213 Bar	2722 to 3084 psi
Maximum Pressure Difference	10.34 Bar	150 psi
Number of Orifices		4
Spray Orifice Size		0.29 mm
Governor		Variable Speed, Part of the Injection Pump
First Stage Fuel Filter		Turn-on Type
Second Stage Fuel Filter		Turn-on Type
Lift Pump	0.34 to 0.48 Bar	5 to 7 psi

DETAILED ENGINE SPECIFICATIONS

Cylinder Block

Type	Non-Sleeved
Material	Cast Iron
ID of Cylinder	102.00 to 102.04 mm
Maximum Service Limit	102.116 mm
Cylinder Out of Round (Maximum)	0.038 mm
Cylinder Taper (Maximum)	0.076 mm
0.5 mm Oversize Piston	
Machine Cylinder Bore to	102.40 to 102.44 mm
Hone to (Finished Diameter)	102.50 to 102.54 mm
1.00 mm Oversize Piston	
Machine Cylinder Bore to	102.90 to 102.94 mm
Hone to (Finished Diameter)	103.00 to 103.04 mm
Warpage (Maximum)	0.075 mm
Maximum Material Removal	0.50 mm

Pistons

Type	Cam Ground
Material	Aluminum alloy
OD at 12 mm From the Bottom, 90 Degrees From Piston Pin	
Standard Size Piston	101.873 to 101.887 mm
Minimum Service Limit	101.823 mm
0.5 mm Oversize Piston	102.373 to 102.387 mm
Minimum Service Limit	101.323 mm
1.0 mm Oversize Piston	102.873 to 102.887 mm
Minimum Service Limit	102.823 mm
ID of Piston Pin Bore	40.006 to 40.012 mm
Maximum Service Limit	40.025 mm
Width of 1st Ring Groove (Top)	2.465 to 2.485 mm
Width of 2nd Ring Groove (Intermediate)	2.425 to 2.445 mm
Width of 3rd Ring Groove (Oil Ring)	4.040 to 4.060 mm
Protrusion Above Cylinder Block (Maximum)	0.660 mm

Piston Pins

Type	Full Float
OD of Pin	39.997 to 40.003 mm
Minimum Service Limit	39.990 mm

Piston Rings

No. 1 Compression (6T-590 Engine)	Key Stone Type (Barrel Face)
End Gap in 102.02 ID	0.40 to 0.70 mm
No. 2 Compression	Rectangular Type (Taper Face)
End Gap in 102.02 ID	0.25 to 0.55 mm
Maximum Service Limit	0.806 mm
Side Clearance	0.075 to 0.120 mm
Maximum Service Limit	0.15 mm
No. 3 Oil Control Rings	Two Piece
End Gap in 102.02 ID	0.25 to 0.55 mm
Maximum Service Limit	0.806 mm
Side Clearance	0.130 mm

Cylinder Head

Warpage (Maximum)	0.20 mm
Maximum Material Removal	1.00 mm
Minimum Head Height	93.75 mm
Engines Manufactured in U.S.A.:	
Prior to Engine Serial Number 45511034	Injector Nozzle 9 mm
Engine Serial Number 45511034 and After	Injector Nozzle 7 mm
Engines Manufactured in Darlington England:	
Prior to Engine Serial Number 21092870	Injector Nozzle 9 mm
Engine Serial Number 21092870 and After	Injector Nozzle 7 mm
Engines Manufactured in Neuss Germany:	
Prior to Engine Serial Number 52107489	Injector Nozzle 9 mm
Engine Serial Number 52107489 and After	Injector Nozzle 7 mm

Lifters

Material	Hardened Iron
OD of Lifter	15.961 to 15.977 mm
Minimum Service Limit	15.960 mm
Bore Diameter in Block	16.00 to 16.030 mm
Maximum Service Limit	16.055 mm

Connecting Rods

Bushing	Steel Backed Leaded Bronze
Bushing ID Installed (Ream to Size)	40.053 to 40.067 mm
Maximum Service Limit	40.092 mm
Bearing Liners	Replaceable
Journal ID Without Bearing Liners	72.987 to 73.013 mm
Bearing Oil Clearance	0.038 to 0.116 mm
Maximum Service Limit	0.129 mm
Side Clearance	0.100 to 0.300 mm
Maximum Service Limit	0.330 mm
Connecting Rod Bend (Maximum)	
Without Bushing	0.200 mm
With Bushing	0.150 mm
Connecting Rod Twist (Maximum)	
Without Bushing	0.500 mm
With Bushing	0.300 mm
Connecting Rod Bolt Maximum Length	59.25 mm

Crankshaft

Type	Hardened Steel, Balanced
Main Bearing Liners	Replaceable
Crankshaft End Clearance Center Main Bearing Cap	0.13 to 0.25 mm
Center Main Bearing Thrust Surface Thickness	2.50 mm
Connecting Rod Journal	
OD, Standard	65.987 to 69.013 mm
Maximum Service Limit	68.962 mm
0.25 mm OD Undersize, Grind to	68.737 to 68.763 mm
Maximum Service Limit	68.712 mm
0.50 mm OD Undersize, Grind to	68.487 to 68.513 mm
Maximum Service Limit	68.462 mm
0.75 mm OD Undersize, Grind to	68.237 to 68.263 mm
Maximum Service Limit	68.212 mm
1.00 mm OD Undersize, Grind to	67.987 to 68.013 mm
Maximum Service Limit	67.962 mm
Connecting Rod Journal Maximum Taper	0.013 mm
Journals Out of Round Maximum	0.050 mm
Undersize Main Bearing Liners For Service	0.25, 0.50, 0.75, and 1.00 mm
Main Bearing Oil Clearance	0.041 to 0.119 mm
Maximum Service Limit	0.140 mm
Main Bearing Journal	
OD, Standard	82.987 to 83.013 mm
Maximum Service Limit	82.962 mm
0.25 mm OD Undersize, Grind to	82.737 to 82.763 mm
Maximum Service Limit	82.712 mm
0.50 mm OD Undersize, Grind to	82.487 to 82.513 mm
Maximum Service Limit	82.462 mm
0.75 mm OD Undersize, Grind to	82.237 to 82.263 mm
Maximum Service Limit	82.212 mm
1.00 mm OD Undersize, Grind to	81.987 to 82.013 mm
Maximum Service Limit	81.962 mm
Main Bearing Journal Bore ID No Liners	87.982 to 88.018 mm
Maximum Service Limit	88.031 mm
Main Journal Width	
1st, 2nd, 3rd, and 5th	37.424 to 37.576 mm
4th	37.475 to 37.525 mm
Connecting Rod Journals Width	38.950 to 39.050 mm

Camshaft

Type	Hardened Iron
Bushing (Front Only)	1, Replaceable
Bushing Lubrication:	
Front Bushing	Pressure Lubricated
Intermediate	Pressure Lubricated
Rear	Pressure Lubricated
Oil Clearance	0.076 to 0.152 mm
ID of No. 1 Bushing, Installed	54.107 to 54.133 mm
Maximum Service Limit	54.146 mm
ID of No. 1 Oversize (57.24 mm OD) Service Bushing	54.089 to 54.139 mm
Maximum Service Limit	54.146 mm
ID of No. 2, 3, 4 and 5 Service Bushing	54.089 to 54.139 mm
Maximum Service Limit	54.146 mm
Width of No. 1 Bushing	25.15 to 25.65 mm
Width of No. 2, 3, 4 and 5 Service Bushing	17.75 to 18.25 mm
Camshaft Bushing Journal OD	53.987 to 54.013 mm
Camshaft Bore Diameter in Block	
No. 1 Bushing	57.222 to 57.258 mm
No. 1 Oversize Bushing, Machine to	57.722 to 57.758 mm
No. 2, 3, 4 and 5, Less Bushings	54.089 to 54.139 mm
No. 2, 3, 4 and 5 Oversize for Bushings, Machine to	57.222 to 57.258 mm
Camshaft Thrust Thickness	9.42 to 9.58 mm
Minimum Service Limit	9.34 mm
Camshaft Thrust Clearance	0.130 to 0.340 mm
Maximum Service Limit	0.470 mm
Camshaft Lobes:	
Minimum Diameter at Peak Intake	47.265 mm
Minimum Diameter at Peak Exhaust	46.994 mm

Turbocharger

Horizontal Travel of Turbine Shaft	0.10 to 0.16 mm

Gear Train

Backlash:	
Crankshaft Gear to Camshaft Gear	0.08 to 0.33 mm
Crankshaft Gear to Idler Gear	0.08 to 0.33 mm
Camshaft to Fuel Pump Gear	0.08 to 0.33 mm
Idler Gear to Oil Pump	0.08 to 0.33 mm
Camshaft to Auxiliary	0.08 to 0.33 mm
Maximum Service Limit (All Gears)	0.45 mm

Rocker Arm Assembly

OD of Shaft	18.963 to 18.975 mm
Minimum Service Limit	18.938 mm
ID of Arm Bore	19.000 to 19.026 mm
Maximum Service Limit	19.051 mm
Lubrication	Pressure From Oil Gallery
Shaft Oil Holes	Down

Intake Valves

Tappet Clearance (Cold)	0.254 mm
Face Angle	29 Degrees
Face Run-Out	0.038 mm
Valve Head Edge Thickness, Minimum	1.50 mm
Length	128.84 to 129.46 mm
OD of Stem	7.960 to 7.980 mm
Minimum Service Limit	7.940 mm
OD of Head	44.870 to 45.130 mm
Seat Angle	30 Degrees
Seat Contact Width	1.32 to 1.92 mm
Seat Run-Out	0.10 mm
Insert Height	6.84 to 6.96 mm
OD of Insert	47.063 to 47.089 mm
ID of Insert	Tapered
Valve Recession Below Head Surface	0.99 to 1.52 mm
Maximum Service Limit	1.52 mm
ID of Valve Guide Bore	8.019 to 8.039 mm
Maximum Service Limit	8.089 mm

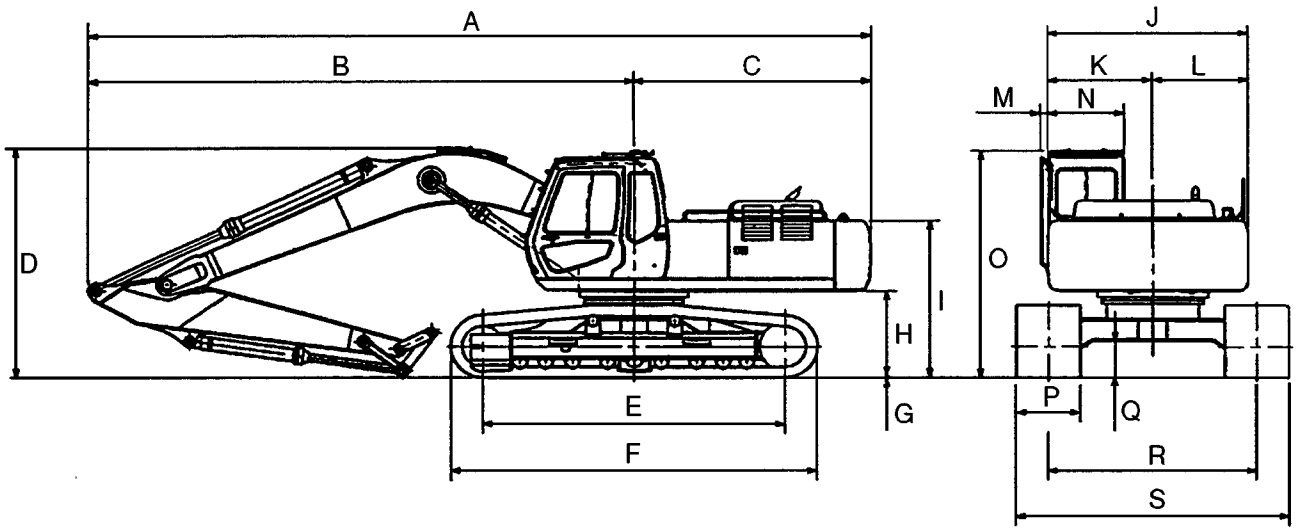
Exhaust Valves

Tappet Clearance (Cold)	0.508 mm
Face Angle	44 Degrees
Face Run-Out	0.038 mm
Valve Head Edge Thickness, Minimum	1.50 mm
OD of Head	41.870 to 42.130 mm
OD of Stem	7.960 to 7.980 mm
Minimum Service Limit	7.940 mm
Length	128.74 to 129.36 mm
Insert Seat Angle	45 Degrees
Seat Contact Width	1.47 to 2.07 mm
Seat Run-Out	0.10 mm
Insert Height	6.65 to 6.77 mm
OD of Insert	43.713 to 43.739 mm
ID of Insert	Tapered
Valve Recession Below Head Surface	0.99 to 1.52 mm
Maximum Service Limit	1.52 mm
ID of Valve Guide Bore	8.019 to 8.039 mm
Maximum Service Limit	8.089 mm

Valve Springs

Free Length	55.63 mm
Total Coils	7.25
Wire Diameter	4.830 to 4.930 mm
Compressed to 38.53 mm	(Valve Open) 785 to 839 N
Maximum Service Limit	765 N
Compressed to 49.25 mm	(Valve Closed) 285 to 321 N
Minimum Service Limit	270 N

9030B TRANSPORTING DIMENSION (3.0M / 9 FT. 10 IN. ARM)



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A	9.44 m	30 ft. 11.7 in.
B	6.67 m	21 ft. 10.6 in.
C	2.77 m	9 ft. 1.0 in.
D	2.86 m	9 ft. 4.6 in.
E	3.66 m	12 ft. 0.1 in.
F	4.46 m	14 ft. 7.6 in.
G	0.026 m	0 ft. 1.0 in.
H	1.04 m	3 ft. 4.9 in.
I	2.006 m	6 ft. 7.0 in.
J	2.50 m	8 ft. 2.5 in.
K	1.31 m	4 ft. 3.6 in.
L	1.19 m	3 ft. 10.9 in.
M	0.10 m	0 ft 3.9 in.
N	0.945 m	3 ft. 1.2 in.
O	2.93 m	9 ft. 7.4 in.
P	0.80 m	2 ft. 7.5 in.
Q	0.46 m	1 ft. 6.1 in
R	2.39 m	7 ft. 10.1 in.
S	3.19 m	10 ft. 5.6 in.

2000

Section 2000

ENGINE

CASE CORPORATION

Rac 7-62950

Printed in U.S.A.
February 1995

TABLE OF CONTENTS

SPECIFICATIONS

Weight of the engine ..... 933 pounds (423 Kg)

SPECIAL TORQUES

Cap screws that hold the engine mounts to the frame ..... 198 to 231 lb-ft (268 to 313 Nm)

ENGINE

Removal

NOTE: *Allow the machine to cool before starting any maintenance work.*

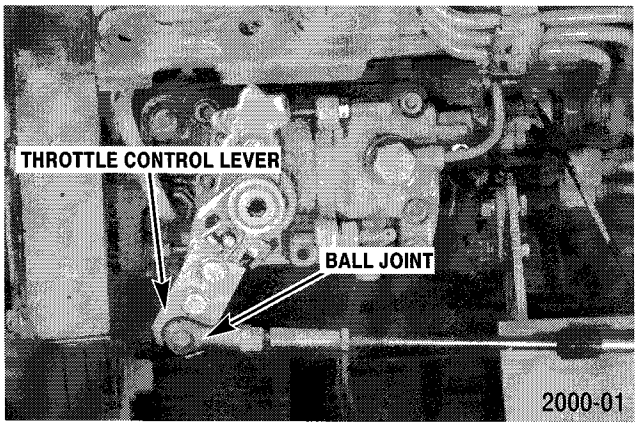
STEP 1

Remove the hydraulic pump. (See Section 8002.)

STEP 2

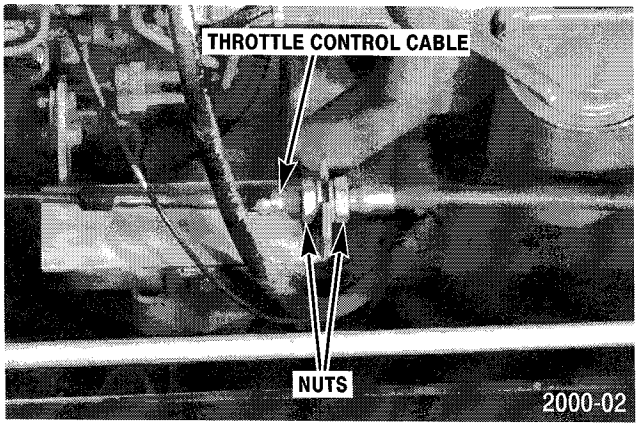
Remove the radiator, oil cooler, and the cooling system reservoir. (See Section 2001.)

STEP 3



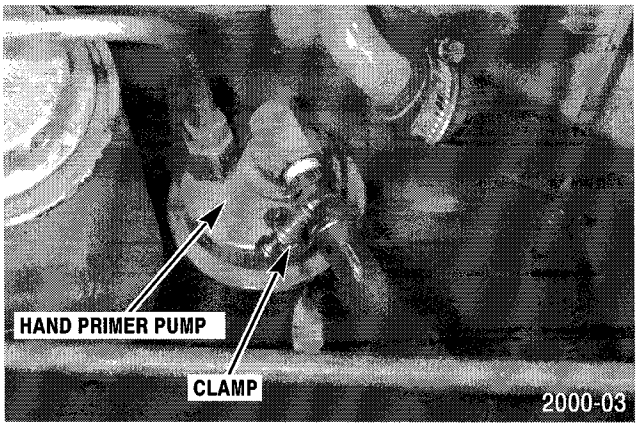
At the fuel injection pump throttle control lever, remove the nut securing the ball joint. Disconnect the ball joint from the throttle control lever.

STEP 4



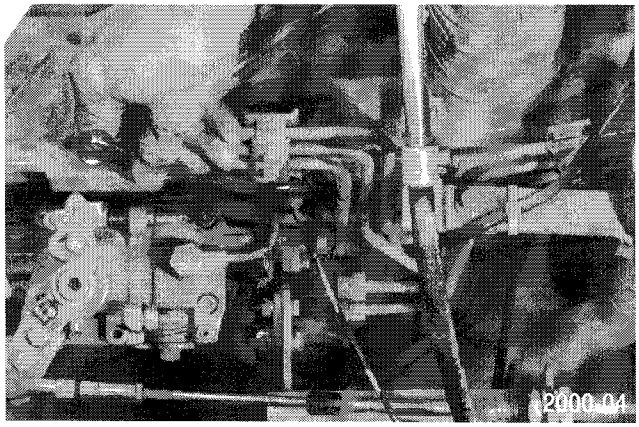
Loosen the two nuts on the throttle control cable. Remove the throttle control cable from the bracket.

STEP 5



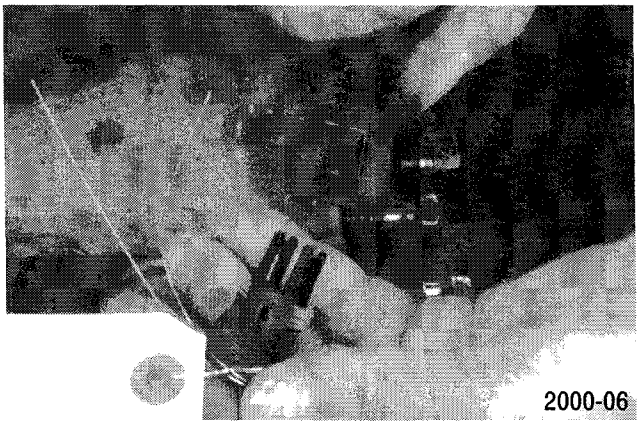
At the hand primer pump, loosen the clamp securing the fuel hose. Disconnect the hose from the fitting. Plug the hose and cap the fitting.

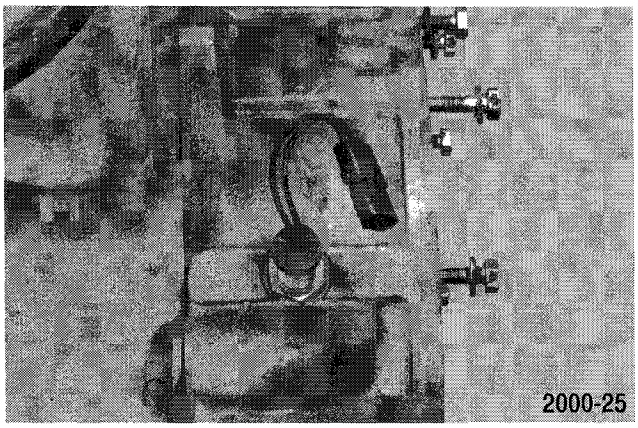
STEP 6



Loosen the nut securing the quick start kit tube to the fitting in the intake manifold. Disconnect the tube from the fitting.

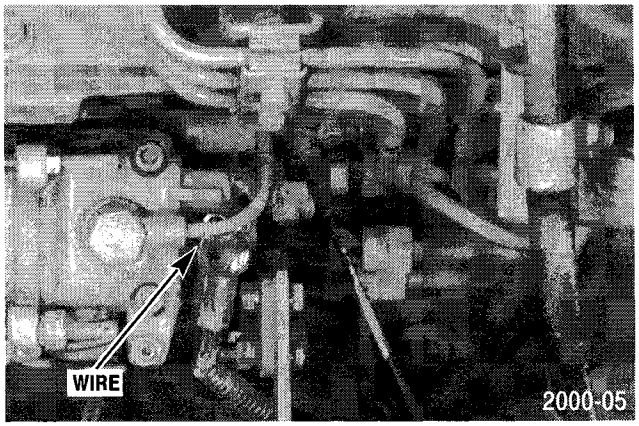
STEP 7





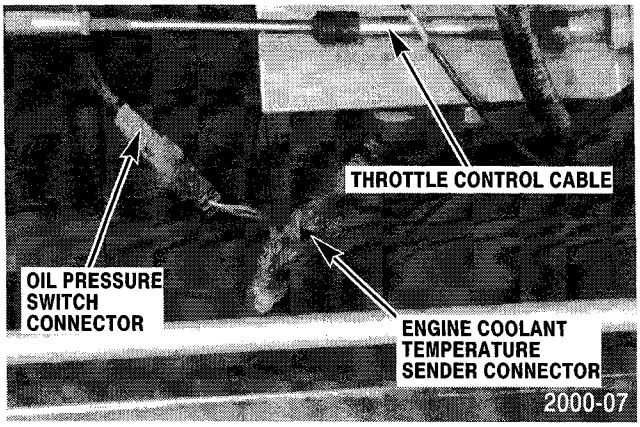
Tag and disconnect the connector connected to the RPM sensor installed in the flywheel housing.

STEP 8



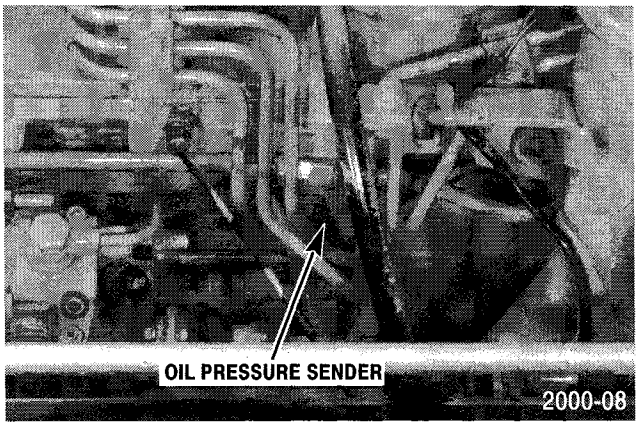
Tag and disconnect the wire connected to the fuel injection pump fuel shutoff solenoid.

STEP 9



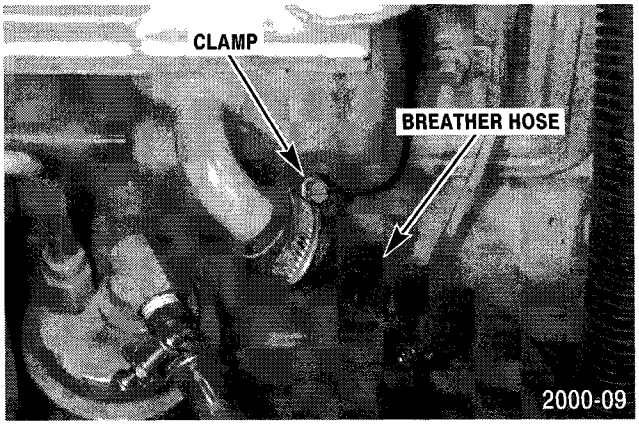
Tag and disconnect the oil pressure switch connector and engine coolant temperature sender connector from the wiring harness connectors.

STEP 10



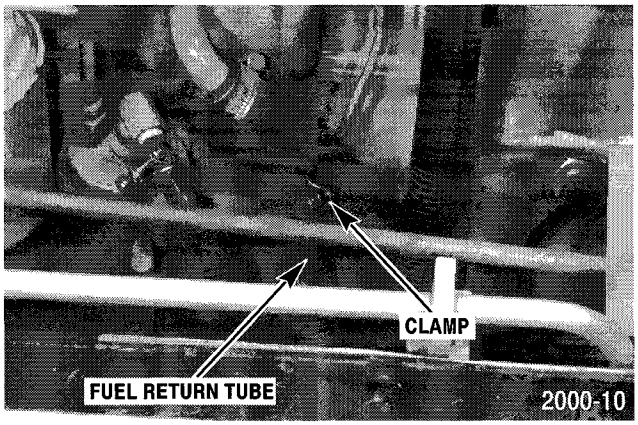
Tag and disconnect the wiring harness wire connected to the oil pressure sender.

STEP 11



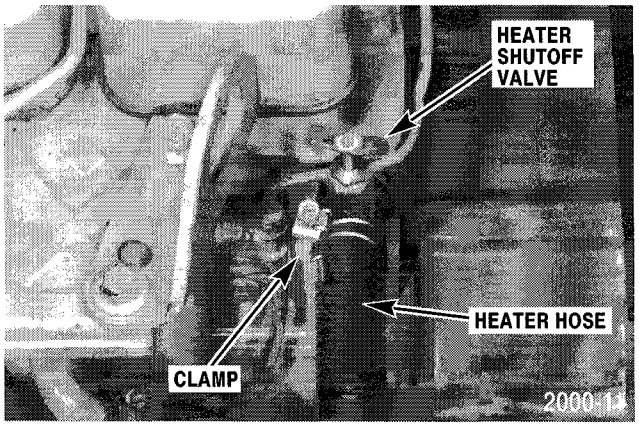
Loosen the clamp on the breather hose connected to the tappet cover elbow. Disconnect the hose from the tappet cover elbow.

STEP 12



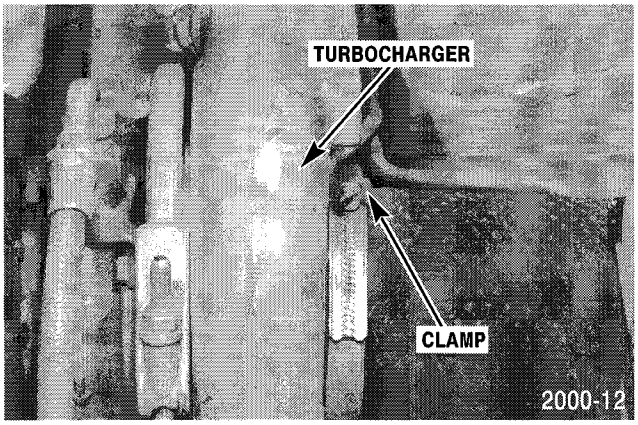
Loosen the clamp securing the fuel return tube to the fuel leak-off line. Disconnect the tube from the line.

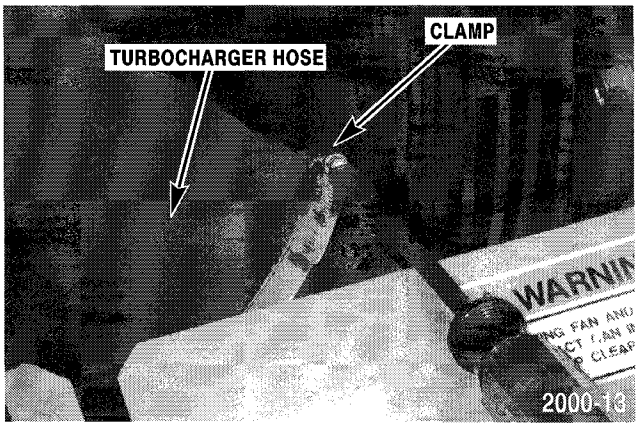
STEP 13



Loosen the clamp on the hose connected to the heater shutoff valve. Disconnect the heater hose from the heater shutoff valve.

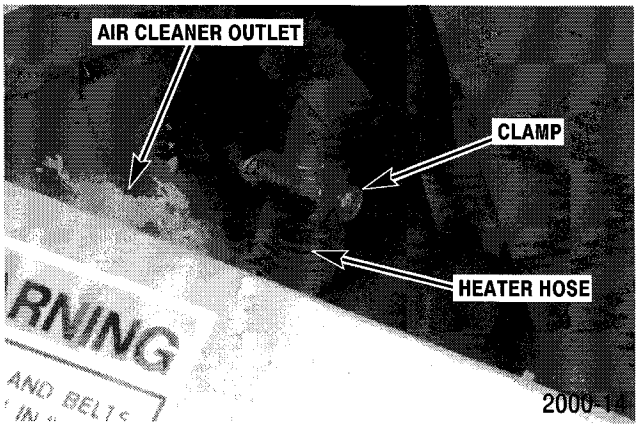
STEP 14





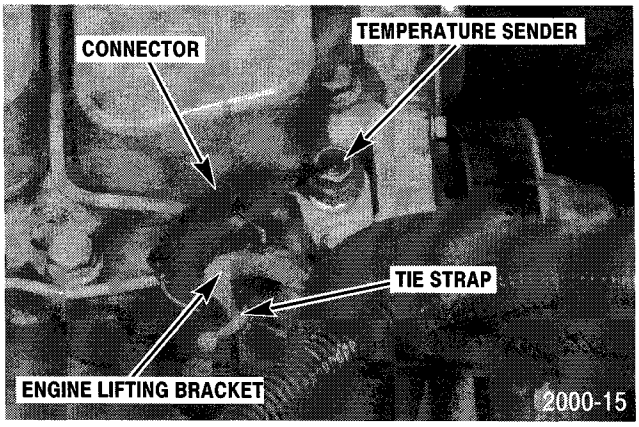
Loosen the two clamps securing the turbocharger hose to the turbocharger and air cleaner outlet. Remove the turbocharger hose and the two clamps.

STEP 15



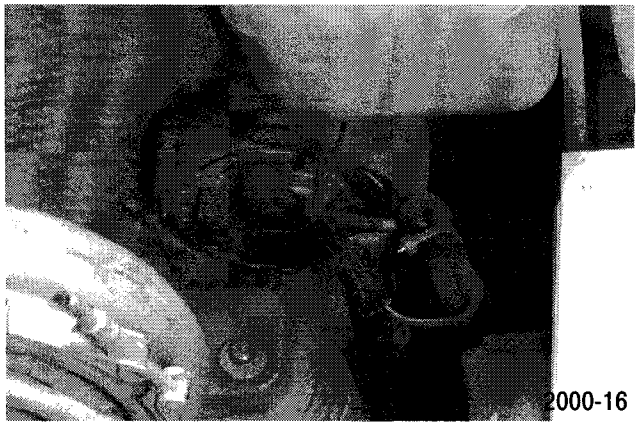
Loosen the clamp securing the heater hose to the engine water inlet. Disconnect the heater hose from the engine water inlet.

STEP 16



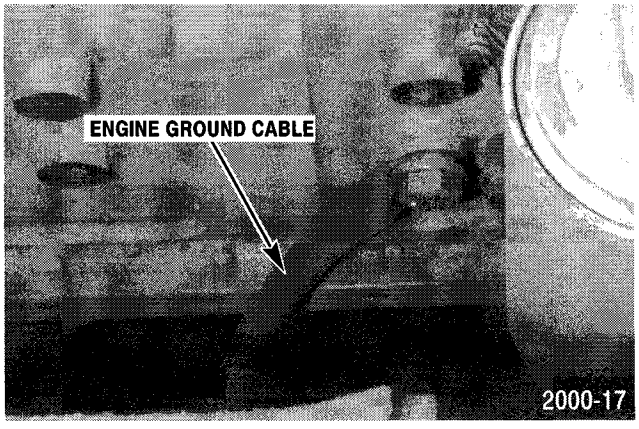
Cut, remove, and discard the tie strap securing the wiring harness to the engine lifting bracket. Disconnect the temperature sender connector from the wiring harness connector.

STEP 17



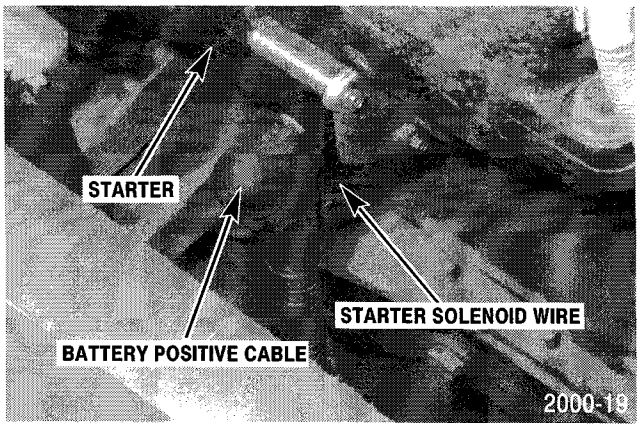
Tag and disconnect the wires from the alternator.

STEP 18



Disconnect the engine ground cable from the engine.

STEP 19

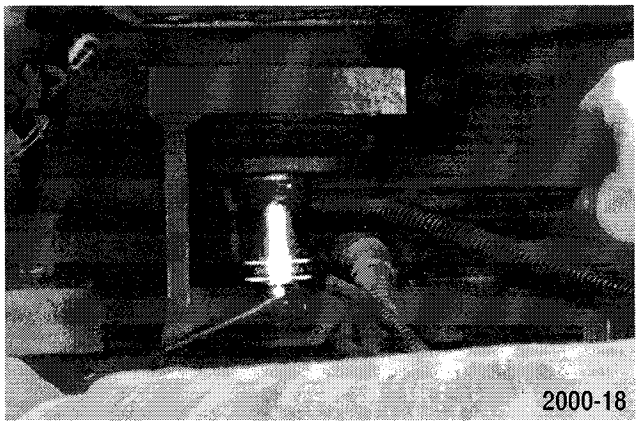


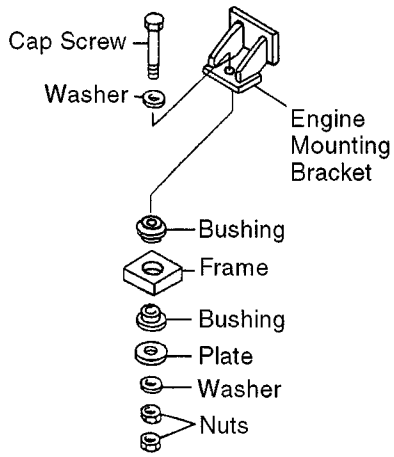
Tag and disconnect the battery positive cable and the starter solenoid wire from the starter.

STEP 20

Connect suitable lifting equipment to the engine. The weight of the engine is 933 pounds (423 kg).

STEP 21





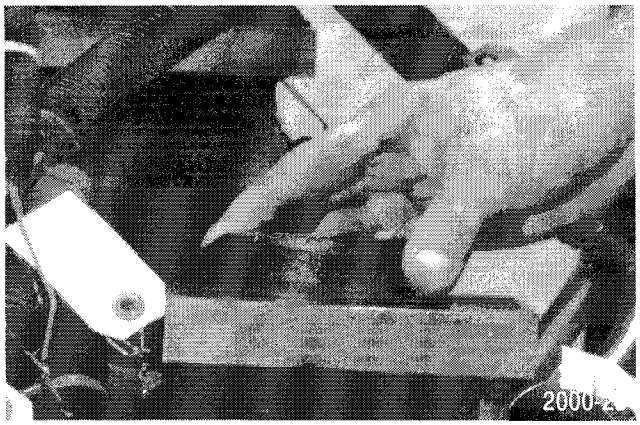
2000-20

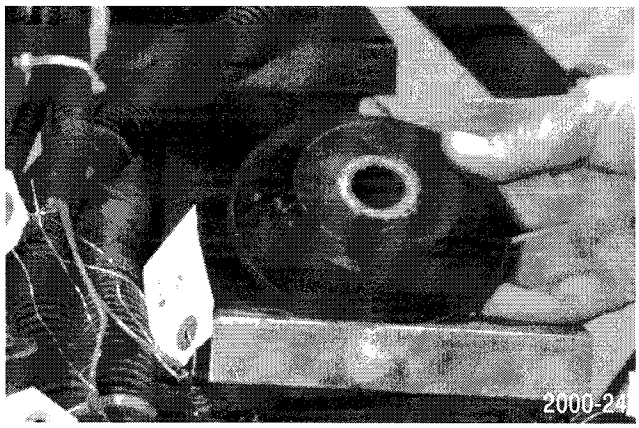
Remove two nuts, two washers, plate, rubber bushing, and cap screw. Repeat this step for remaining three engine mounts.

STEP 22

Raise the engine from the mounts. Move the engine forward and away from the machine.

STEP 23

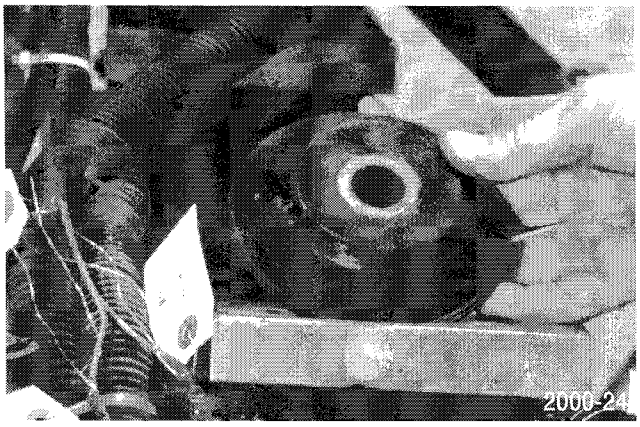


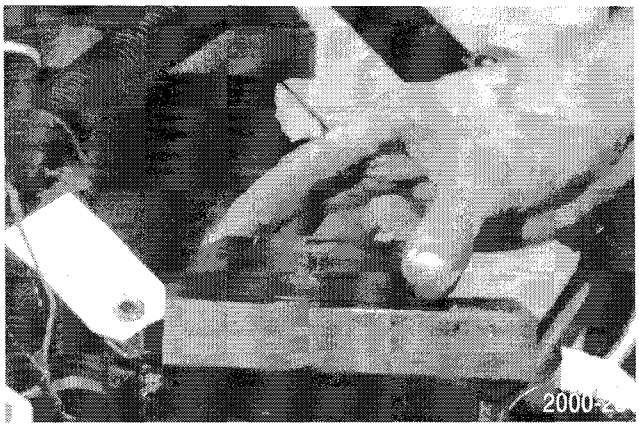


Remove the rubber motor insulators from the four engine mounts.

Installation

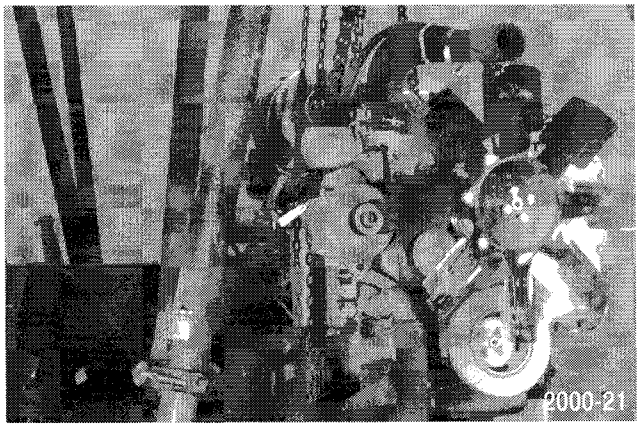
STEP 1





Inspect the rubber motor insulators for cracks, deterioration, or damage. Replace insulators if cracked, deteriorated, or damaged. Install the rubber motor insulators on the four engine mounts.

STEP 2

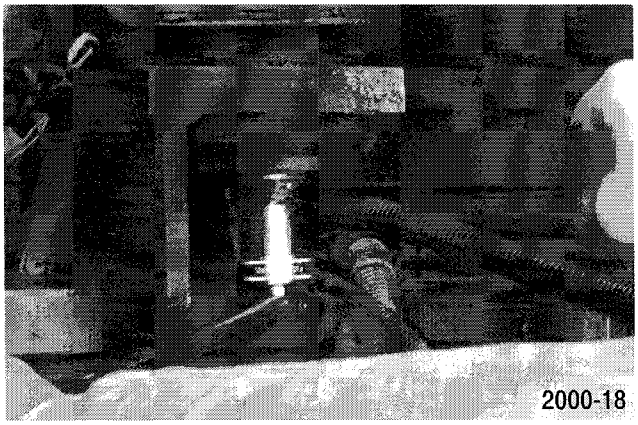


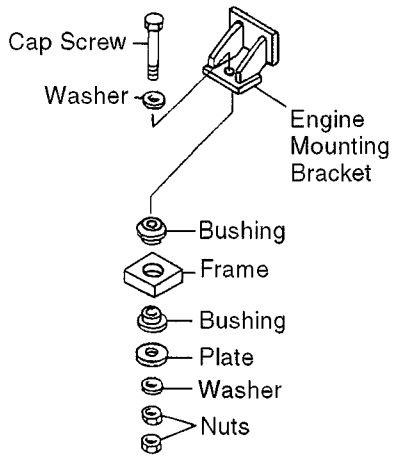
Connect suitable lifting equipment to the engine

STEP 3

Move the engine into position and lower onto the engine mounts.

STEP 4





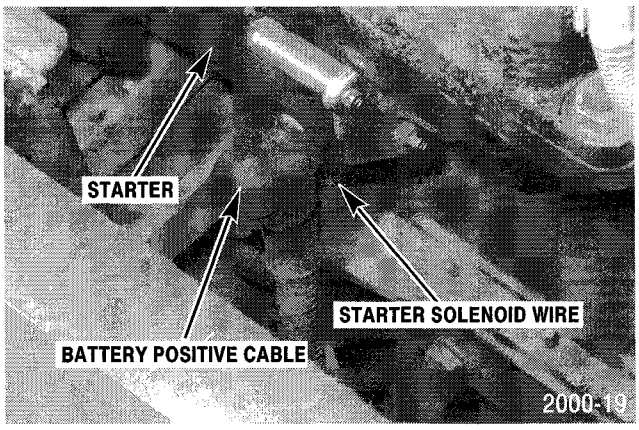
2000-20

Install nut, two washers, plate, rubber bushing and cap screw. Tighten the cap screw to 198 to 231 lb-ft (268 to 313 Nm). Install the second nut and tighten securely against the first nut. Repeat this step for the remaining three engine mounts.

STEP 5

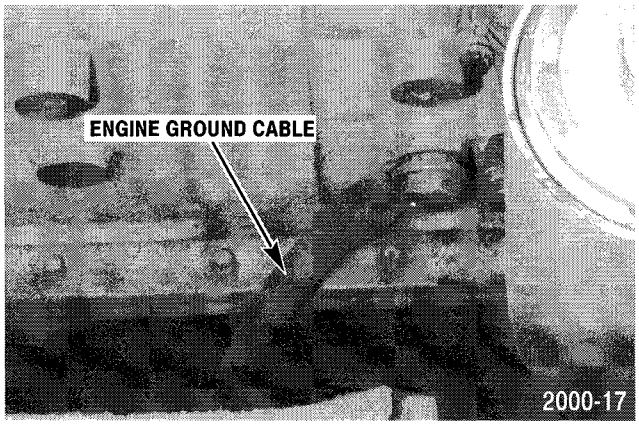
Disconnect lifting equipment from engine.

STEP 6



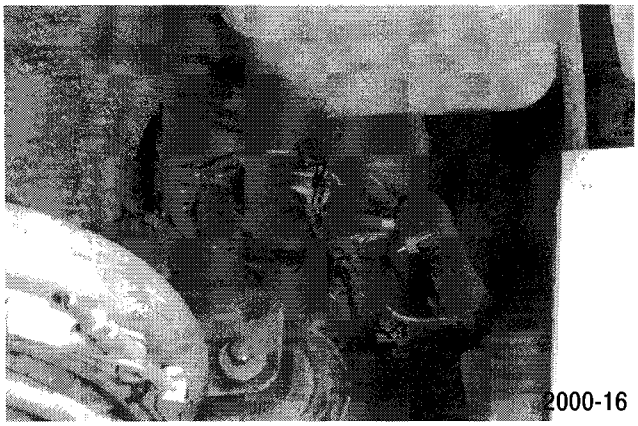
Connect the starter solenoid wire and the battery positive cable to the starter following tags installed during removal. Remove tags.

STEP 7



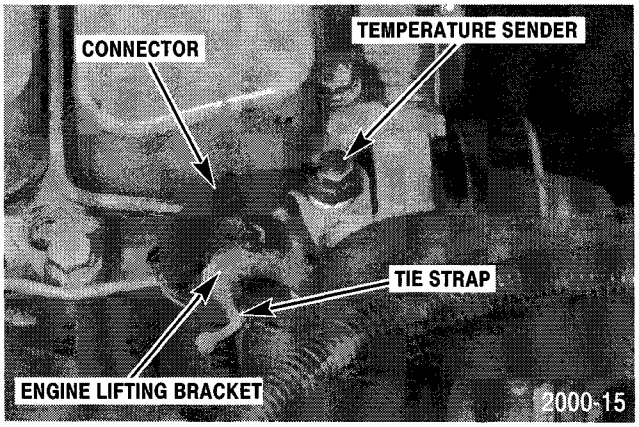
Connect the engine ground cable to the engine.

STEP 8



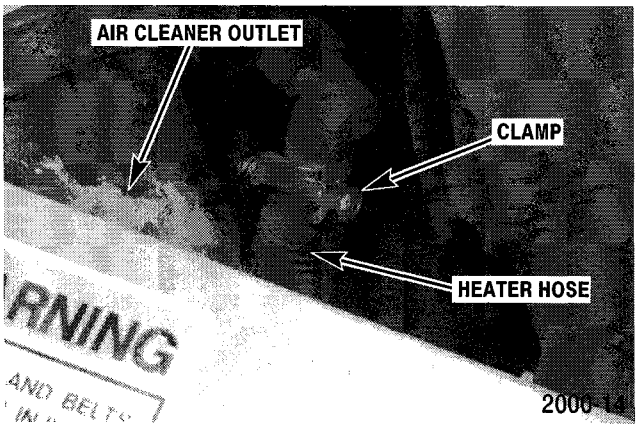
Connect the wires to the alternator following the tags installed during removal. Remove the tags.

STEP 9



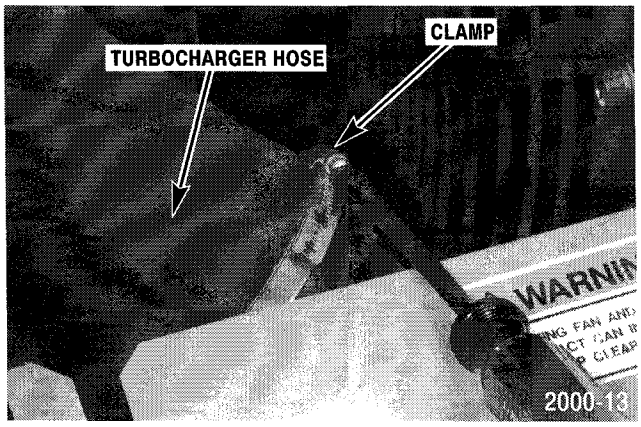
Connect the temperature sender connector to the wiring harness connector. Install a tie strap to secure the wiring harness to the engine lifting bracket.

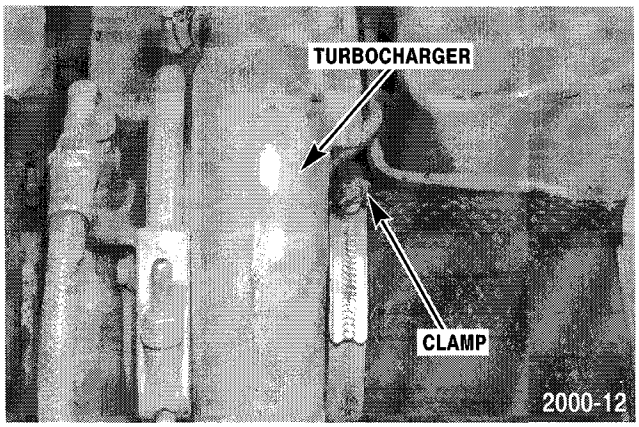
STEP 10



Connect the heater hose to the engine water inlet. Tighten the clamp to secure the hose.

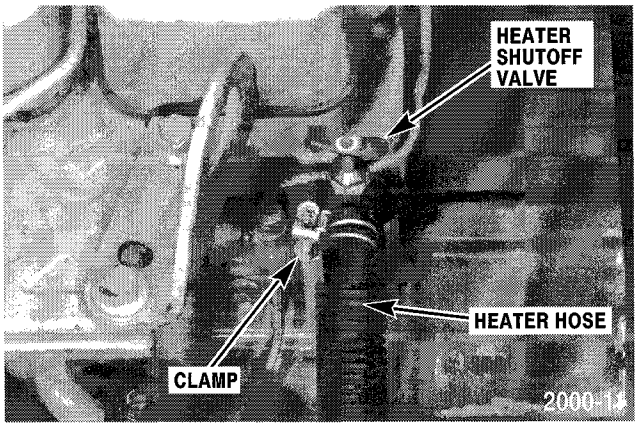
STEP 11





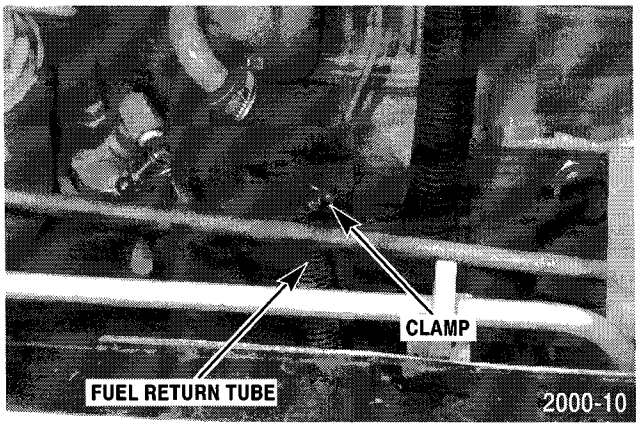
Install the turbocharger hose with two clamps between the turbocharger and the air cleaner outlet. Tighten the two clamps.

STEP 12



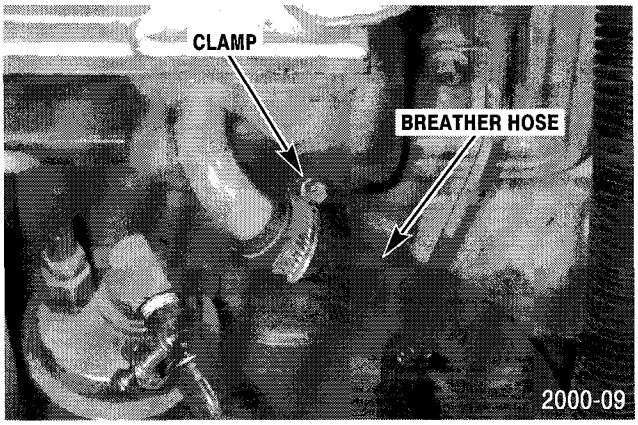
Connect the heater hose to the heater shutoff valve. Tighten the clamp.

STEP 13



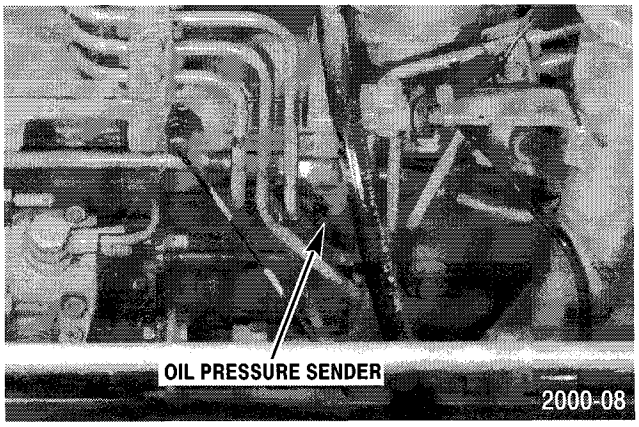
Connect the fuel return tube to the fuel leak-off line. Tighten the clamp to secure the tube to the line.

STEP 14



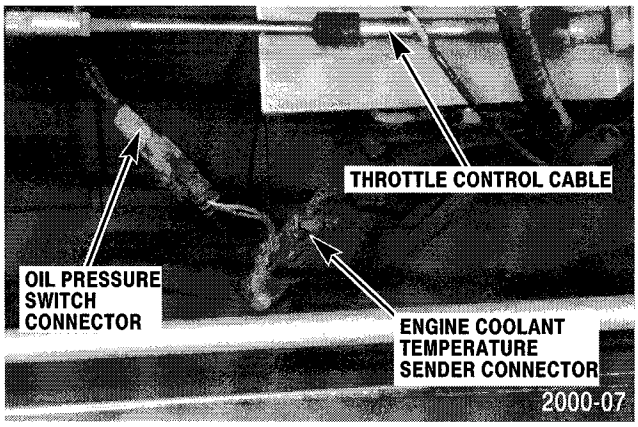
Connect the breather hose to the tappet cover elbow. Tighten the clamp.

STEP 15



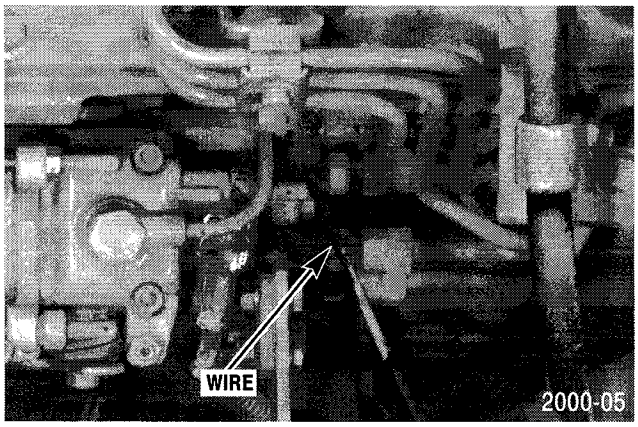
Connect the wiring harness wire to the oil pressure sender following the tag installed during removal. Push the rubber boot over the connection. Remove the tag.

STEP 16



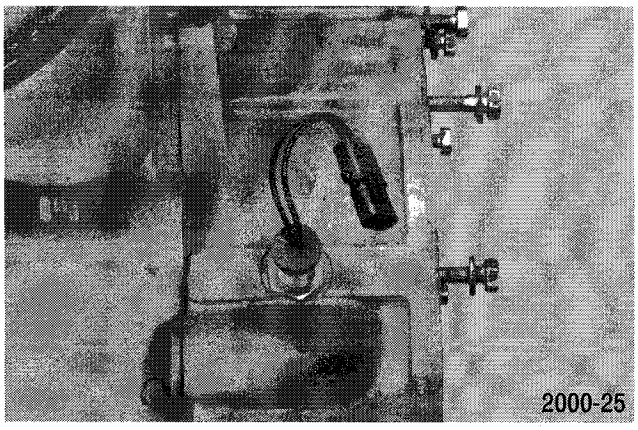
Connect the engine coolant temperature sender and oil pressure switch connectors to wiring harness connectors following tags installed during removal. Remove the tags.

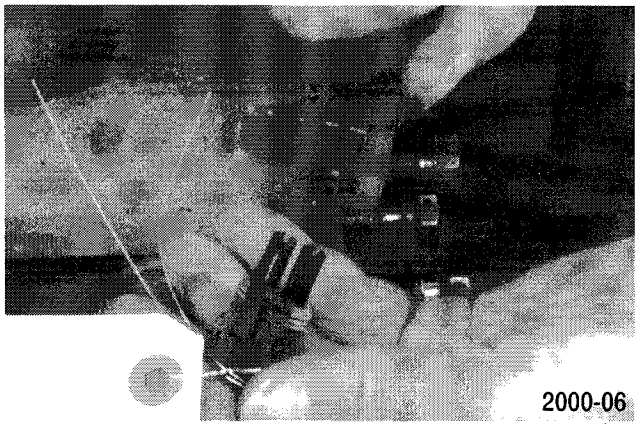
STEP 17



Connect the wiring harness wire to the fuel injection pump fuel shutoff solenoid following the tag installed during removal. Push the rubber boot over the connection. Remove the tag.

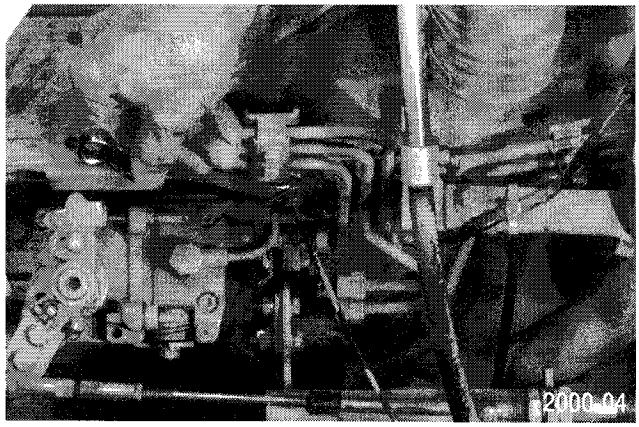
STEP 18





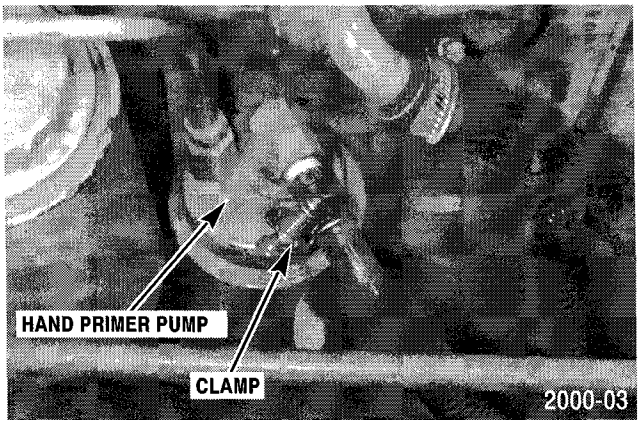
Connect the connector to the RPM sensor installed in the flywheel housing. Remove the tag.

STEP 19



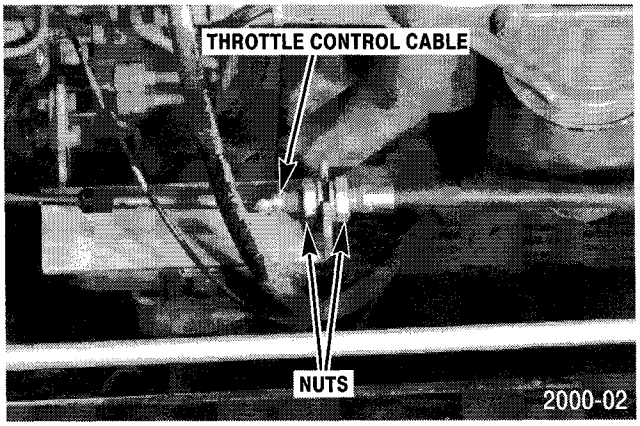
Connect the quick start kit tube to the fitting installed in the intake manifold. Tighten the nut to secure the tube to the fitting.

STEP 20



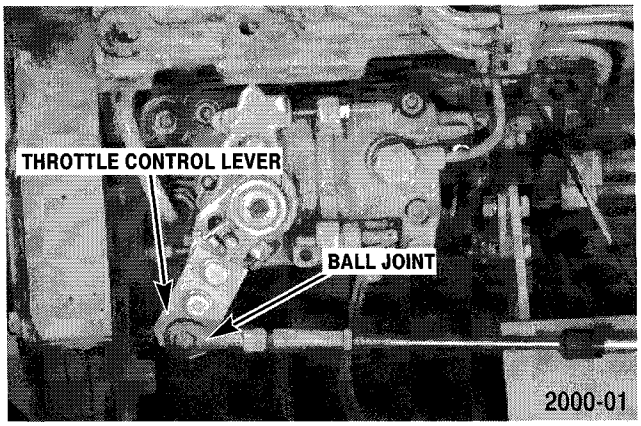
Remove the plug from the fuel hose and the cap from the fitting installed in the hand primer pump. Connect the fuel hose to the hand primer pump fitting. Tighten the clamp to secure the fuel hose.

STEP 21



Install the throttle control cable on the bracket and tighten the two nuts.

STEP 22



Connect the throttle control cable ball joint to the fuel injection pump throttle control lever. Install and tighten the nut to secure the ball joint.

STEP 23

Install the radiator, oil cooler, and cooling system reservoir. (See Section 2001.)

STEP 24

Install the hydraulic pump. (See Section 8002.)

STEP 25

Refer to the Operators Manual and remove air from the fuel system.

2001

Section

2001

ENGINE RADIATOR AND OIL COOLER AND COOLING SYSTEM RESERVOIR

:ASE CORPORATION

Rac 7-63100

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February 1995

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