1825 Uni-Loader

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CASE CORPORATION

1001

SAFETY RULES
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CASE CORPORATION

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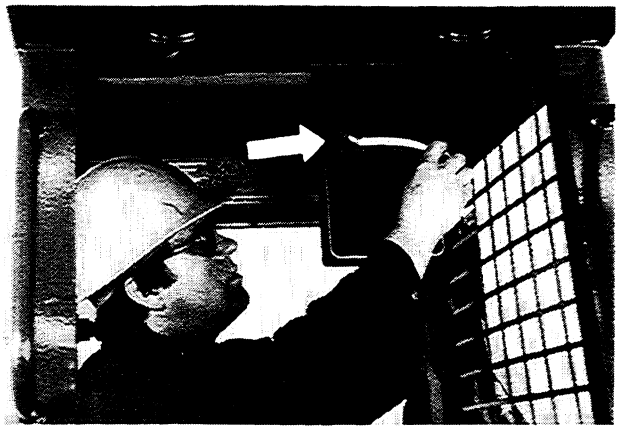
SAFETY RULES

Most accidents involving machine operation and maintenance can be avoided by following basic safety rules and precautions. Read and understand all the safety messages in this manual, the safety manual, and the safety signs on the machine before you operate or service the machine.

Read the operators manual and make sure you understand the operation of the machine.



Operators Manual Storage 876245

The safety information given in this manual does not replace safety codes, insurance needs, federal, state, and local laws.

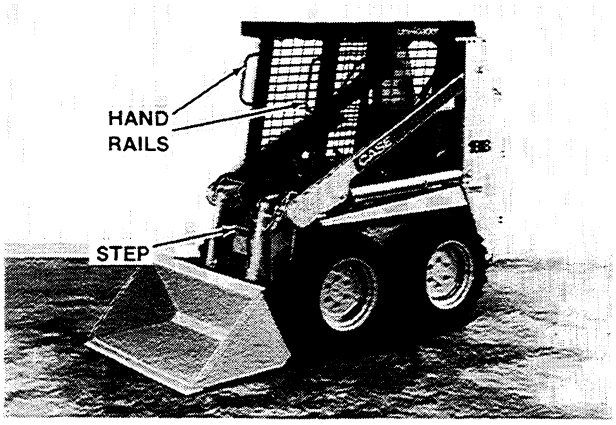
IMPORTANT: *Safety messages in this section point out situations which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.*

Additional safety messages are used in the text of the manual to show specific safety hazards.

BEFORE OPERATION

Do not wear loose clothing or jewelry that can catch on controls, etc. Safety shoes, heavy gloves, ear protection, etc., can also be required for your protection.

Foreign material or grease on the steps and hand rails can cause an accident. Keep the steps and hand rails clean.



Remove all loose objects from the operators area and from the machine. Loose objects can jam controls and cause accidents.

Engine exhaust fumes can cause death. If you operate this machine in an enclosed area, use good ventilation to replace the exhaust fumes with fresh air.

Make sure all persons are away from the machine before you start the engine.

Before you start the engine, always fasten the seat belt and pull down the operators protection bars.

Use hand rails and step provided. Do not rush.

MACHINE OPERATION

Check all controls in a clear area and make sure the machine is operating correctly.

Do not allow another person to ride on the machine. This other person can fall or can cause an accident.

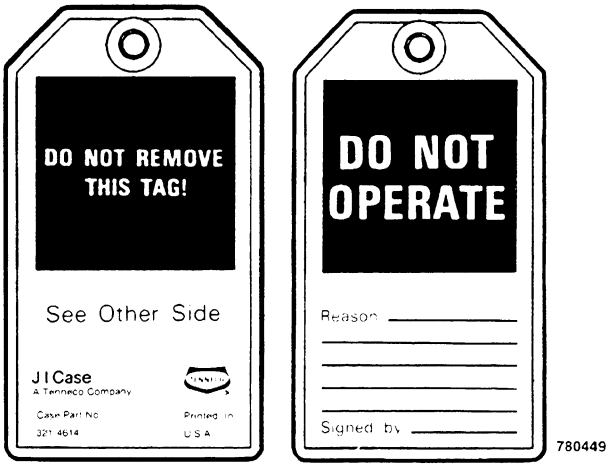
Be alert, always know the location of all workers in your area. Keep all other persons completely away from your machine. Injury or death can result if you do not follow these instructions.

PARKING THE MACHINE

When you park the machine and before you leave the operators area, lower the loader bucket to the ground or support the loader lift arms with the support strut and stop the engine.

MAINTENANCE

When you service the machine, put a Do Not Operate tag on the instrument panel. A Do Not Operate tag (Case part number 321-4614) is included with each new machine. Extra tags are available from your Case dealer.



Improper service or repair can cause injury or death. If you do not understand a service or adjustment procedure, see the correct section in this manual.

Unauthorized modifications to this machine can cause injury or death. Do not make unauthorized modifications to this machine.

If you must service this machine with the engine running, have another person help you. Follow the instructions in this manual. Do not leave the operators seat with the engine running.

Metal chips or debris can cause eye injury. Always wear eye or face protection when you use a hammer on this machine. Use a hammer with a soft face, such as brass, to drive hardened pins.

When adding air to a tire, always stand behind the tread of the tire and use a self-adjusting chuck. Explosive separation of the tire can result if you overinflate. When tire service is necessary, have a qualified tire mechanic service the tire.

Hydraulic fluid or grease injected into your skin can cause severe injury or death. Keep your hands and body away from any pressurized leak. If fluid is injected into your skin, see a doctor immediately and have the fluid removed.

FIRE OR EXPLOSION PREVENTION

Engine fuel can cause an explosion or fire. Do not fill the fuel tank with the engine running, if you are near an open fire, or if you are welding, smoking, etc.

Use nonflammable cleaning solvent to clean parts.

Sparks or flame can cause the hydrogen gas in a battery to explode. To prevent an explosion, do the following:

1. When disconnecting the battery cables, disconnect the negative (-) cable first; when connecting the battery cables, connect the negative (-) cable last.

2. When connecting jumper cables to start the engine, use the procedure shown in this manual.

3. Do not short circuit the battery posts with metal items.

4. Do not weld, grind, or smoke near a battery.

Sparks from the electrical system or engine exhaust can cause a fire or an explosion. Before you operate this machine in an area with flammable dust or vapors, use good ventilation to remove all flammable dust or vapors.

A fire can cause injury or death. Always have a fire extinguisher near the machine. Make sure the fire extinguisher is serviced according to the manufacturers instructions.

Remove all trash or debris from the machine. Make sure that oily rags or other flammable materials are not stored on the machine.

Check for fuel, oil, and hydraulic fluid leaks. Replace worn or damaged hoses/lines. After repairs are made, clean the machine before you operate.

BURN PREVENTION

Battery acid causes severe burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote - EXTERNAL: flush with water. INTERNAL: drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call a doctor immediately. EYES: flush with water for 15 minutes and get prompt medical attention.

When the battery electrolyte is frozen, the battery can explode if, (1) you try to charge the battery, (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.

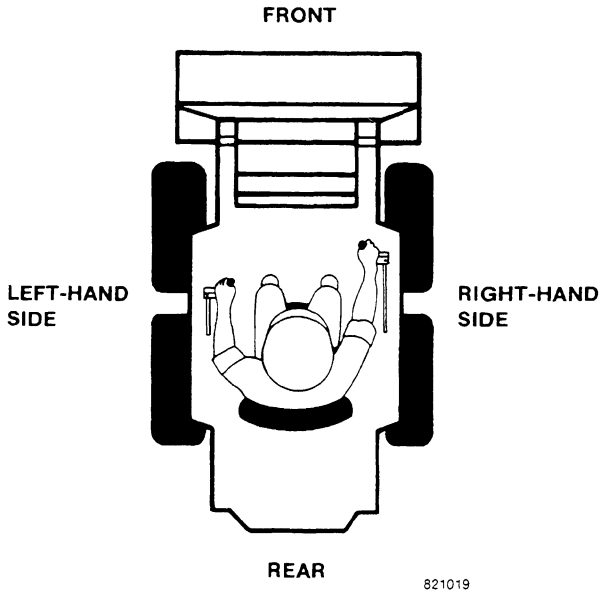
Hot coolant can spray out if the radiator cap is removed. To remove the radiator cap, let the cooling system cool, turn to the first notch, then wait until the pressure is released.

SERVICE MANUAL INTRODUCTION

This service manual has been prepared with the latest service information available. Troubleshooting, removal, disassembly, inspection and installation procedures, and complete specifications and tightening references can be found in most sections. Some sections have drawings but no written procedure because the job is so easily done. This service manual is one of the most important tools available to the service technician.

Right, Left, Front, and Rear

The terms right-hand and left-hand and front and rear as used in this manual indicate the right and left sides, and front and rear of the machine as seen from the operator's seat for correct operation of the machine or attachment.



Text

If the service manual is for more than one machine or different models of components (planetary axles, gear boxes, control valves, etc.) the procedures have the steps necessary to service each model.

Table of Contents

A Table of Contents is in the front of this manual. The Table of Contents shows the main divisions and the sections that are in each division. The individual sections, where necessary, have a Table of Contents on the cover or second page of that section.

Page Numbers

All page numbers are made of two numbers the separated by a dash, such as 4002-9. The number dash before the dash is the section number. The number following is the page number in that section. Page numbers will be found at the upper right or left of each page.

Illustrations

Illustrations are put as near as possible to the text and are to be used as part of the text.

Special Tools

Special tools are needed to remove and install, disassemble and assemble, check, and adjust some components parts of this machine. Some special tools can be easily made locally and the necessary information to make the tool is in this service manual. Other special tools are more difficult to make locally and are available from Service Tools in the U.S. and from Jobborn Manufacturing in Canada. Use these tools according to the instructions in this service manual for your personal safety and to do the job correctly.

Order special tools from either of the following companies:

Service Tools
P.O. Box 314
Owatonna, Minnesota 55060

Jobborn Manufacturing Co.
97 Frid Street
Hamilton, Ontario L8P 4M3
Canada

TORQUE SPECIFICATIONS - DECIMAL HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine oil. Not applicable if special graphites, molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs

Size	Pound-Feet	Newton metres
1/4 in	9-11	12-15
5/16 in	17-21	23-28
3/8 in	35-42	48-57
7/16 in	54-64	73-87
1/2 in	80-96	109-130
9/16 in	110-132	149-179
5/8 in	150-180	203-244
3/4 in	270-324	366-439
7/8 in	400-480	542-651
1.0 in	580-696	787-944
1-1/8 in	800-880	1085-1193
1-1/4 in	1120-1240	1519-1681
1-3/8 in	1460-1680	1980-2278
1-1/2 in	1940-2200	2631-2983

Grade 8 Bolts, Nuts, and Studs

Size	Pound-Feet	Newton metres
1/4 in	12-15	16-20
5/16 in	24-29	33-39
3/8 in	45-54	61-73
7/16 in	70-84	95-114
1/2 in	110-132	149-179
9/16 in	160-192	217-260
5/8 in	220-264	298-358
3/4 in	380-456	515-618
7/8 in	600-720	814-976
1.0 in	900-1080	1220-1465
1-1/8 in	1280-1440	1736-1953
1-1/4 in	1820-2000	2468-2712
1-3/8 in	2380-2720	3227-3688
1-1/2 in	3160-3560	4285-4827

NOTE: *Use thick nuts with Grade 8 bolts.*

811360B

TORQUE SPECIFICATIONS - METRIC HARDWARE

Use the following toques when special torques are not given

These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or molydisulfide grease or oil if used.

Grade 8.8 Bolts, Nuts, and Studs

8.8

Size	Pound-Feet	Newton metres
M4	2-3	3-4
M5	5-6	6.5-8
M6	8-9	10.5-12
M8	19-23	26-31
M10	38-45	52-61
M12	66-79	90-107
M14	106-127	144-172
M16	160-200	217-271
M20	320-380	434-515
M24	500-600	675-815
M30	920-1100	1250-1500
M36	1600-1950	2175-2600

Grade 10.9 Bolts, Nuts, and Studs

10.9

Size	Pound-Feet	Newton metres
M4	3-4	4-5
M5	7-8	9.5-11
M6	11-13	15-17 5
M8	27-32	37-43
M10	54-64	73-87
M12	93-112	125-150
M14	149-179	200-245
M16	230-280	310-380
M20	450-540	610-730
M24	780-940	1050-1275
M30	1470-1770	2000-2400
M36	2580-3090	3500-4200

Grade 12.9 Bolts, Nuts, and Studs

12.9

Usually the torque values specified for grade 10.9 fasteners can be used satisfactorily on grade 12.9 fasteners.

TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS

Tube OD Hose ID	Thread Size	Pound-Feet	Newton metres
37 Degree Flare Fittings			
1/4 in 6.4 mm	7/16-20	6-12	8-16
5/16 in 7.9 mm	1/2-20	8-16	11-21
3/8 in 9.5 mm	9/16-18	10-25	14-33
1/2 in 12.7 mm	3/4-16	15-42	20-56
5/8 in 15.9 mm	7/8-14	25-58	34-78
3/4 in 19.0 mm	1-1/16-12	40-80	54-108
7/8 in 22.2 mm	1-3/16-12	60-100	81-135
1.0 in 25.4 mm	1-5/16-12	75-117	102-158
1-1/4 in 31.8 mm	1-5/8-12	125-165	169-223
1-1/2 in 38.1 mm	1-7/8-12	210-250	285-338

Tube OD Hose ID	Thread Size	Pound-Feet	Newton metres
Straight Threads with O-ring			
1/4 in 6.4 mm	7/16-20	12-19	16-25
5/16 in 7.9 mm	1/2-20	16-25	22-23
3/8 in 9.5 mm	9/16-18	25-40	34-54
1/2 in 12.7 mm	3/4-16	42-67	57-90
5/8 in 15.9 mm	7/8-14	58-92	79-124
3/4 in 19.0 mm	1-1/16-12	80-128	108-174
7/8 in 22.2 mm	1-3/16-12	100-160	136-216
1.0 in 25.4 mm	1-5/16-12	117-187	159-253
1-1/4 in 31 8 mm	1-5/8-12	165-264	224-357
1-1/2 in 38.1 mm	1-7/8-12	250-400	339-542

Split Flange Mounting Bolts		
Size	Pound-Feet	Newton metres
5/16-18	15-20	20-27
3/8-16	20-25	26-33
7/16-14	35-45	47-61
1/2-13	55-65	74-88
5/8-11	140-150	190-203

Section

1002

FLUIDS AND LUBRICANTS

Bur 8-17680

Printed in
Issued

CAPACITIES AND LUBRICANTS

Fuel Tank
- Capacity ..... 8.5 U.S. gallons (32.2 litres)

Diesel Engine Crankcase
- Capacity - with filter change ..... 6 U.S. quarts (5.7 litres)
- Type of oil ..... See Engine Oil Recommendations on page 3

Gasoline Engine Crankcase
- Capacity - with filter change ..... 3.5 U.S. quarts (3.3 litres)
- Type of oil ..... See Engine Oil Recommendations on page 3

Gasoline Engine Governor
- Capacity ..... 1.2 U.S. fluid ounces (35.5 mL)
- Type of oil ..... SAE 10W30 engine oil

Hydraulic Reservoir
- Capacity - with filter change ..... 5.75 U.S. gallons (21.8 litres)
- Capacity - without filter change ..... 5.5 U.S. gallons (20.8 litres)
- Capacity - total system ..... 7.5 U.S. gallons (28.4 litres)
- Type of oil ..... SAE 10W30 engine oil with additive, see below

When you change the hydraulic oil, add one U.S. quart of Case HTO (Hydrostatic Transmission Oil Additive) Case part number B17508.

When you add oil to the hydraulic reservoir between oil changes, use a mixture of SAE 10W30 engine oil and HTO additive. Mix one U.S. quart of HTO additive with five U.S. gallons (19 litres) of 10W30 engine oil. (20 to 1 ratio).

Drive Chain Compartments
- Capacity - each side ..... 3 U.S. quarts (2.8 litres)
- Type of oil ..... SAE 10W30 engine oil

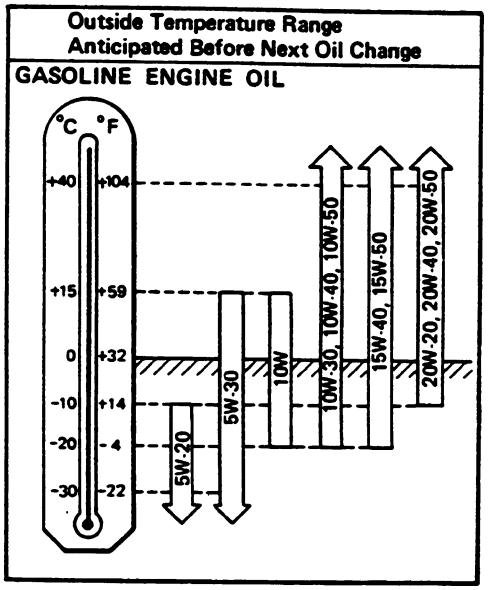
Engine Cooling System
- Capacity ..... 7 U.S. quarts (6.6 litres)
- Type of coolant ..... Ethylene glycol type antifreeze and water that is mixed for lowest ambient temperature at least 50/50 mix

Grease Fittings
- Type of lubricant ..... Case IH molydisulfide grease

Hydrostatic Motor Shaft Spline
- Type of lubricant ..... Molykote, Type G grease

GASOLINE ENGINE OIL RECOMMENDATIONS

Use Case IH Engine Oil of the correct viscosity. See the chart for the temperatures and the recommended viscosity. API classification of SD, SE or SF must be used.



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DIESEL ENGINE OIL RECOMMENDATIONS

Use Case IH Engine Oil of the correct viscosity. See the chart for the temperatures and the recommended viscosity. API classification of CD, SE/CD, or SF/CD must be used.

Above 77°F (25°C) ..... SAE 30
32 to 77°F (0 to 25°C)..... SAE 20W or SAE 10W30
Below 32°F (0°C)..... SAE 10W or SAE 10W30

FUEL

Gasoline Engines

Use clean, unleaded regular grade gasoline. Do not use leaded gasoline in the engine.

Diesel Engines

Use the diesel fuel recommended for the temperatures in your area. If the ambient temperature lowers to the "cloud point" of the fuel, wax particles will form in the fuel. The wax particles can cause a restriction in the fuel filters decreasing engine power. See your fuel dealer.

Section 1010

ENGINE SPECIFICATIONS

Nissan A12 Gasoline Engine

Pub 8-58790

Printed in U.S.A.
October, 1987

CASE CORPORATION

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GENERAL SPECIFICATIONS

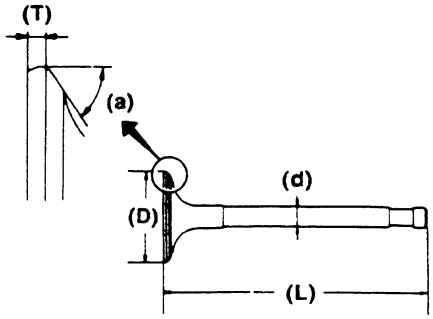
Type		Gasoline	
Stroke		4	
No. Of Cylinders		4	
Valve Arrangement		OHV (Over Head Valve)	
Bore x Stroke		2.87 x 2.76 inch	73.0 x 70.0 mm
Displacement		71.45 inch	1.171 cm^3
Compression Ratio		9:0	
Number Of Piston Rings			
Compression		2	
Oil		1	
Number Of Main Bearings		5	
Valve Clearance (Hot)			
Intake And Exhaust		0.014 inch	0.35 mm
Engine Idle Speed		650 rpm	
Ignition Timing At Idle Speed			
BTDC		12° at 650 rpm	
Engine Oil Capacity			
With Oil Filter	3.37 US Quarts	2.87 UK Quarts	3.2 L
Without Oil Filter	2.87 US Quarts	2.37 UK Quarts	2.7 L
Oil Pump Type		Trochoid Gear	
Oil Filter Type		Paper Element (Cartridge)	
Water Pump Type		Centrifugal	
Thermostat Operating Temperature			
Tropical Area		170°F	76°C
Cold Area		180 to 190°F	82 to 88°C
Carburetor Type		Downdraft	
Air Cleaner Type		Dry Paper	
Alternator Model		Mitsubishi A1T24371	
Capacity		12 Volt 35 Amp	
Voltage Regulator Model		Mitsubishi RQB220B5	
Starter Motor Model		Mitsubishi M2T20181	
Capacity		0.8 kW	
Ignition System			
Firing Order		1 - 3 - 4 - 2	
Ignition Coil Model		Mitsubishi HP-BE10	
Distributor		Mitsubishi T3T03571	
Spark Plug Type		NGK B4ES	

DETAILED SPECIFICATIONS

Cylinder Head

Maximum Warpage	0.0020 inch	0.05 mm
Limit	0.004 inch	0.1 mm

Valves



Valve Head Diameter (D)		
Intake	1.378 inch	35.0 mm
Exhaust	1.142 inch	29.0 mm
Valve Stem Diameter (d)		
Intake	0.3134 to 0.3140 inch	7.960 to 7.975 mm
Exhaust	0.3128 to 0.3134 inch	7.945 to 7.960 mm
Valve Length (L)	4.0748 to 4.0945 inch	103.5 to 104.0 mm
Valve Seat Angle (a)	45° 30'	45° 30'
Valve Margin (T)		
Standard	0.051 inch	1.3 mm
Limit	0.020 inch	0.5 mm
Valve Stem End Surface Grinding Limit	0.020 inch	0.5 mm
Valve Clearance (In.& Ex)		
Hot	0.014 inch	0.35 mm
Cold	0.010 inch	0.25 mm

Valve Spring

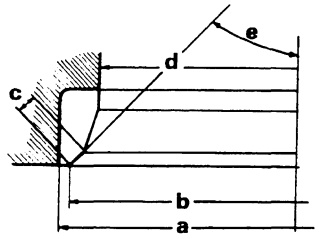
Free Height	1.831 inch	46.5 mm
Pressure Height	1.189 inch	30.2 mm
Pressure	120 to 138 lb	54.4 to 62.6 mm
Out Of Square Limit	0.063 inch	1.6 mm

Valve Guide

Outside Diameter		
Standard	0.4737 mm to 0.4742 inch	12.033 to 12.044 mm
Oversize	0.4816 mm to 0.4820 inch	12.233 to 12.244 mm
Inside Diameter	0.3150 to 0.3157 inch	8.000 to 8.020 mm
Cylinder Head Valve Guide Hole Diameter		
Standard	0.4724 to 0.4729 inch	12.000 to 12.011 mm
Oversize	0.4803 to 0.4807 inch	12.200 to 12.211 mm
Interference Fit Of Valve Guide	0.0009 to 0.0017 inch	0.022 to 0.044 mm
Valve Stem Clearance (Standard)		
Intake	0.0010 to 0.0024 inch	0.025 to 0.060 mm
Exhaust	0.0016 to 0.0030 inch	0.040 to 0.075 mm
Limit	0.0039 inch	0.10 mm
Valve Deflection Limit	0.008 inch	0.2 mm

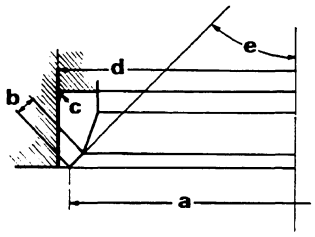
Valve Seat

Intake Valve Seat
(Standard)



Diameter	(a)	1.46 inch	37 mm
Diameter	(b)	1.36 inch	34.6 mm
	(c)	0.047 inch	1.2 mm
Diameter	(d)	1.18 inch	30 mm
	(e)	45°	45°

Intake Valve Seat
(Oversize)



Diameter	(a)	1.36 inch	34.6 mm
	(b)	0.047 inch	1.2 mm
Radius	(c)	0.020 inch	0.5 mm
Diameter	(d)	1.4764 to 1.4770 inch	37.500 to 37.516 mm
	(e)	45°	45°

Suggest:

If the above button click is invalid.

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first, and then click the above link

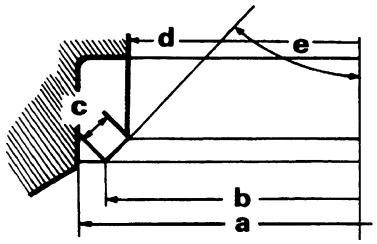
to download the complete manual.

Thank you so much for reading

SPECIFICATIONS

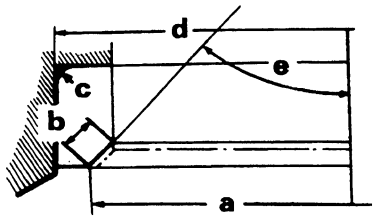
Valve Seat (Con't)

Exhaust Valve Seat
Standard



Diameter	(a)	1.30 inch	33 mm
Diameter	(b)	1.126 inch	328.6 mm
	(c)	0.075 inch	1.9 mm
Diameter	(d)	1.02 inch	26 mm
	(e)	45°	45°

Intake Valve Seat
Oversize



Diameter	(a)	1.126 inch	28.6 mm
	(b)	0.075 inch	1.9 mm
Radius	(c)	0.020 inch	0.5 mm
Diameter	(d)	1.3189 to 1.3195 inch	33.500 to 33.516 mm
	(e)	45°	45°

Camshaft

Journal Diameter	No 1	1.7237 to 1.7242 inch	43.783 to 43.796 mm
	Nº 2	1.7041 to 1.7046 inch	43.283 to 43.296 mm
	Nº 3	1.6844 to 1.6849 inch	42.783 to 42.796 mm
	Nº 4	1.6647 to 1.6652 inch	42.283 to 42.296 mm
	Nº 5	1.6224 to 1.6229 inch	41.208 to 41.221 mm

Finished Bearing Inside Diameter (After Line Boring)	No 1	1.7257 to 1.7261 inch	43.833 to 43.843 mm
	Nº 2	1.7056 to 1.7060 inch	43.323 to 43.333 mm
	Nº 3	1.6865 to 1.6868 inch	42.836 to 42.846 mm
	Nº 4	1.6663 to 1.6667 inch	42.323 to 42.333 mm
	Nº 5	1.6243 to 1.6247 inch	41.258 to 41.268 mm

Camshafts and camshaft bearings are available in the following undersizes:

1st Undersize	0.0098 inch	0.25 mm
2nd Undersize	0.0197 inch	0.50 mm
3rd Undersize	0.0295 inch	0.75 mm