SERVICE MANUAL

7630 [Z7CA27168 -]
8030 [Z7CA27168 -]

Contents

INTRODUCTION

Contents

INTRODUCTION

Advice

All repair and maintenance works listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given; and using, whenever appropriate, the special tools.

Anyone who carries out the above operations without complying with the instructions shall be responsible for the subsequent damages.

The manufacturer and all the organizations of it's distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages due to the anomalous behavior of parts and/or components not approved by the manufacturer himself, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages due to an anomalous behavior of parts and/or components not approved by the manufacturer.

The information in this manual is up-to-date at the date of the publication. It is the policy of the manufacturer for continuous improvement. Some information may not be updated due to modifications of a technical or commercial type, as well as to suit the laws and regulations of different countries.

In case of questions, refer to your Sales and Service Networks.

Foreword - Ecology And The Environment

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances which are required by advanced technology, common sense should govern the use and disposal of products of a chemical and petrochemical nature.

NOTE: *The following are recommendations which may be of assistance:*

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use and dispose of these substances.
- Agricultural consultants will, in many cases, be able to help you as well.

HELPFUL HINTS

- Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems which may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
- Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil but should be collected and disposed of properly.
- Repair any leaks or defects in the engine cooling or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

International symbols

As a guide to the operation of the machine, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.

 Heater plug for cold start	 Turning signal	 Power Take-Off (PTO)	 Reaction control
 Alternator charging	 Activated memory	 Transmission in neutral	 Accessories socket
 Fuel level	 Turn signals	 Creeper selection	 Implement socket
 Automatic fuel shut-off	 Turn signals - one trailer	 Low speed selection	 Percentage slip
 Engine speed (rpm x 100)	 Turn signals - two trailers	 High speed selection	 Raising of the hydraulic lift
 Hour meter	 Wind shield washer	 Road speed	 Rear hitch lower
 Engine oil pressure	 Windscreen wash wipe	 Differential Lock	 Hydraulic lift height threshold
 Engine coolant temperature	 Heating temperature control	 Rear axle oil temperature	 Hydraulic lift disabled
 Coolant level	 Cab recirculation fan	 Transmission oil pressure	 Transmission filters and hydraulic filters
 Machine lights	 Air conditioner	 Auxiliary Front Wheel Drive (AFWD) operated	 Remote control valve extension
 Main beam head	 Air Filter Restriction	 Warning!	 Remote control valve command retraction
 Low beam	 Parking brake	 Danger warning lights	 Remote control valve flotation
 Work lamps	 Brake fluid level	 Variable control	 Malfunction! See Operator's
 Stop lamp	 Trailer brake	 Pressurized! Open carefully	 Malfunction! (alternative symbol)
 Klaxon	 Warning! Corrosive substance	 Position control	 Brake fluid level

Safety rules and signal word definitions

Personal safety

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual and on machine decals, you will find the signal words Danger, Warning, and Caution followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

⚠ DANGER ⚠

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

M1169A

⚠ WARNING ⚠

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

M1170A

⚠ CAUTION ⚠

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with Caution is YELLOW.

M1171A

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation which, if not avoided, could result in machine or property damage. The color associated with Notice is BLUE.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information which clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Torque

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 graphite lubricants, Molydisulfide greases, or other extreme pressure lubricants are used.

Decimal hardware

Grade 5 bolts, nuts, and studs

Size	Nm	lb in/lb ft
1/4 in	12 - 15 Nm	108 - 132 lb in
5/16 in	23 - 28 Nm	204 - 252 lb in
3/8 in	48 - 57 Nm	420 - 504 lb in
7/16 in	73 - 87 Nm	54 - 64 lb ft
1/2 in	109 - 130 Nm	80 - 96 lb ft
9/16 in	149 - 179 Nm	110 - 132 lb ft
5/8 in	203 - 244 Nm	150 - 180 lb ft
3/4 in	366 - 439 Nm	270 - 324 lb ft
7/8 in	542 - 651 Nm	400 - 480 lb ft
1 in	787 - 944 Nm	580 - 696 lb ft
1-1/8 in	1085 - 1193 Nm	800 - 880 lb ft
1-1/4 in	1519 - 1681 Nm	1120 - 1240 lb ft
1-3/8 in	1980 - 2278 Nm	1460 - 1680 lb ft
1-1/2 in	2631 - 2983 Nm	1940 - 2200 lb ft

Markings for Grade 5 hardware

Grade 8 bolts, nuts, and studs

Size	Nm	lb in/lb ft
1/4 in	16 - 20 Nm	144 - 180 lb in
5/16 in	33 - 39 Nm	288 - 348 lb in
3/8 in	61 - 73 Nm	540 - 648 lb in
7/16 in	95 - 114 Nm	70 - 84 lb ft
1/2 in	149 - 179 Nm	110 - 132 lb ft
9/16 in	217 - 260 Nm	160 - 192 lb ft
5/8 in	298 - 358 Nm	220 - 264 lb ft
3/4 in	515 - 618 Nm	380 - 456 lb ft
7/8 in	814 - 976 Nm	600 - 720 lb ft
1 in	1220 - 1465 Nm	900 - 1080 lb ft
1-1/8 in	1736 - 1953 Nm	1280 - 1440 lb ft
1-1/4 in	2468 - 2712 Nm	1820 - 2000 lb ft
1-3/8 in	3227 - 3688 Nm	2380 - 2720 lb ft
1-1/2 in	4285 - 4827 Nm	3160 - 3560 lb ft

Markings for Grade 8 hardware

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

Metric hardware

Grade 8.8 bolts, nuts, and studs

Size	Nm	lb in/lb ft
4 mm	3 - 4 Nm	24 - 36 lb in
5 mm	7 - 8 Nm	60 - 72 lb in
6 mm	11 - 12 Nm	96 - 108 lb in
8 mm	26 - 31 Nm	228 - 276 lb in
10 mm	52 - 61 Nm	456 - 540 lb in
12 mm	90 - 107 Nm	66 - 79 lb ft
14 mm	144 - 172 Nm	106 - 127 lb ft
16 mm	217 - 271 Nm	160 - 200 lb ft
20 mm	434 - 515 Nm	320 - 380 lb ft
24 mm	675 - 815 Nm	500 - 600 lb ft
30 mm	1250 - 1500 Nm	920 - 1100 lb ft
36 mm	2175 - 2600 Nm	1600 - 1950 lb ft

Markings for Grade 8.8 hardware

Grade 10.9 bolts, nuts and studs

Size	Nm	lb in/lb ft
4 mm	4 - 5 Nm	36 - 48 lb in
5 mm	9 - 11 Nm	84 - 96 lb in
6 mm	15 - 18 Nm	132 - 156 lb in
8 mm	37 - 43 Nm	324 - 384 lb in
10 mm	73 - 87 Nm	54 - 64 lb ft
12 mm	125 - 150 Nm	93 - 112 lb ft
14 mm	200 - 245 Nm	149 - 179 lb ft
16 mm	310 - 380 Nm	230 - 280 lb ft
20 mm	610 - 730 Nm	450 - 540 lb ft
24 mm	1050 - 1275 Nm	780 - 940 lb ft
30 mm	2000 - 2400 Nm	1470 - 1770 lb ft
36 mm	3500 - 4200 Nm	2580 - 3090 lb ft

Markings for Grade 10.9 hardware

Grade 12.9 bolts, nuts, and studs

Size	Nm	lb in/lb ft
Typically the torque values specified for grade 10.9 hardware can be used satisfactorily on grade 12.9 hardware.		

Markings for Grade 12.9 hardware

Steel hydraulic fittings

37° flare fitting

Tube outside diameter/Hose inside diameter		Thread size	Nm	lb in/lb ft
mm	inch			
6.4 mm	1/4 in	7/16-20 in	8 - 16 Nm	72 - 144 lb in
7.9 mm	5/16 in	1/2-20 in	11 - 22 Nm	96 - 192 lb in
9.5 mm	3/8 in	9/16-18 in	14 - 34 Nm	120 - 300 lb in
12.7 mm	1/2 in	3/4-16 in	20 - 57 Nm	180 - 504 lb in
15.9 mm	5/6 in	7/8-14 in	34 - 79 Nm	300 - 696 lb in
19.0 mm	3/4 in	1-1/16-12 in	54 - 108 Nm	40 - 80 lb ft
22.2 mm	7/8 in	1-3/16-12 in	81 - 135 Nm	60 - 100 lb ft
25.4 mm	1 in	1-5/16-12 in	102 - 158 Nm	75 - 117 lb ft
31.8 mm	1-1/4 in	1-5/8-12 in	169 - 223 Nm	125 - 165 lb ft
38.1 mm	1-1/2 in	1-7/8-12 in	285 - 338 Nm	210 - 250 lb ft

Straight threads with O-ring

Tube outside diameter/Hose inside diameter		Thread size	Nm	lb in/lb ft
mm	inch			
6.4 mm	1/4 in	7/16-20 in	16 - 26 Nm	144 - 228 lb in
7.9 mm	5/16 in	1/2-20 in	22 - 34 Nm	192 - 300 lb in
9.5 mm	3/8 in	9/16-18 in	34 - 54 Nm	300 - 480 lb in
12.7 mm	1/2 in	3/4-16 in	57 - 91 Nm	540 - 804 lb in
15.9 mm	5/6 in	7/8-14 in	79 - 124 Nm	58 - 92 lb ft
19.0 mm	3/4 in	1-1/16-12 in	108 - 174 Nm	80 - 128 lb ft
22.2 mm	7/8 in	1-3/16-12 in	136 - 216 Nm	100 - 160 lb ft
25.4 mm	1 in	1-5/16-12 in	159 - 253 Nm	117 - 187 lb ft
31.8 mm	1-1/4 in	1-5/8-12 in	224 - 357 Nm	165 - 264 lb ft
38.1 mm	1-1/2 in	1-7/8-12 in	339 - 542 Nm	250 - 400 lb ft

Split flange mounting bolts

Size	Nm	lb in/lb ft
5/16-18 in	20 - 27 Nm	180 - 240 lb in
3/8-16 in	27 - 34 Nm	240 - 300 lb in
7/16-14 in	47 - 61 Nm	420 - 540 lb in
1/2-13 in	74 - 88 Nm	55 - 65 lb ft
5/8-11 in	190 - 203 Nm	140 - 150 lb ft

O-ring face seal end

Nominal SAE dash size	Tube outside diameter		Thread size	Nm	lb in/lb ft
	mm	in			
-4	6.4 mm	1/4 in	9/16-18 in	14 - 16 Nm	120 - 144 lb in
-6	9.5 mm	3/8 in	11/16-16 in	24 - 27 Nm	216 - 240 lb in
-8	12.7 mm	1/2 in	13/16-16 in	43 - 54 Nm	384 - 480 lb in
-10	15.9 mm	5/8 in	1-14 in	62 - 76 Nm	552 - 672 lb in
-12	19.0 mm	3/4 in	1-3/16-12 in	90 - 110 Nm	65 - 80 lb ft
-14	22.2 mm	7/8 in	1-3/16-12 in	90 - 110 Nm	65 - 80 lb ft
-16	25.41 mm	1.0 in	1-7/16-12 in	125 - 140 Nm	92 - 105 lb ft
-20	31.8 mm	1-1/4 in	1-11/16-12 in	170 - 190 Nm	125 - 140 lb ft
-24	38.1 mm	1-1/2 in	2-12 in	200 - 254 Nm	150 - 180 lb ft

O-ring boss end fitting or lock nut

Nominal SAE dash size	Tube outside diameter		Thread size	Nm	lb in/lb ft
	mm	in			
-4	**6.4 mm**	**1/4 in**	**7/16-20 in**	**23 - 27 Nm**	**204 - 240 lb in**
-6	**9.5 mm**	**3/8 in**	**9/16-18 in**	**34 - 41 Nm**	**300 - 360 lb in**
-8	**12.7 mm**	**1/2 in**	**3/4-16 in**	**61 - 68 Nm**	**540 - 600 lb in**
-10	**15.9 mm**	**5/8 in**	**7/8-14 in**	**81 - 88 Nm**	**60 - 65 lb ft**
-12	**19.0 mm**	**3/4 in**	**1-1/16-12 in**	**115 - 122 Nm**	**85 - 90 lb ft**
-14	**22.2 mm**	**7/8 in**	**1-13/16-12 in**	**129 - 136 Nm**	**95 - 100 lb ft**
-16	**25.41 mm**	**1.0 in**	**1-5/16-12 in**	**156 - 169 Nm**	**115 - 125 lb ft**
-20	**31.8 mm**	**1-1/4 in**	**1`-5/6-12 in**	**201 - 217 Nm**	**150 - 160 lb ft**
-24	**38.1 mm**	**1-1/2 in**	**1-7/8-12 in**	**258 - 271 Nm**	**190 - 200 lb ft**

Abbreviation Measurements

Typical applications	Metric unit		Imperial unit	
	Name	Symbol	Name	Symbol
Area (Land area)				
	hectare	**ha**	acre	**ac**
	square meter	**m²**	square foot	**ft²**
			square inch	**in²**
	square millimeter	**mm²**	square inch	**in²**
Electricity				
	ampere	**A**	ampere	**A**
	volt	**V**	volt	**V**
	microfarad	**µF**	microfarad	**µF**
	ohm	**Ω**	ohm	**Ω**
Force				
	kilonewton	**kN**	pound	**lb**
	newton	**N**	pound	**lb**
Force per length				
	newton per meter	**N/m**	pound per foot	**lb/ft**
			pound per inch	**lb/in**
Frequency				
	megahertz	**MHz**	megahertz	**MHz**
	kilohertz	**kHz**	kilohertz	**kHz**
	hertz	**Hz**	hertz	**Hz**
Frequency − Rotational				
	revolution per minute	**r/min**	revolution per minute	**r/min** [a]
		rpm		**rpm**
Length				
	kilometer	**km**	mile	**mi**
	meter	**m**	foot	**ft**
	centimeter	**cm**	inch	**in**
	millimeter	**mm**	inch	**in**
	micrometer	**µm**		
Mass				
	kilogram	**kg**	pound	**lb**
	gram	**g**	ounce	**oz**
	milligram	**mg**		
Power				
	kilowatt	**kW**	horsepower	**Hp**
	watt	**W**	Btu per hour	**Btu/hr**
			Btu per minute	**Btu/min**
Pressure or stress (Force per area)				
	kilopascal	**kPa**	pound per square inch	**psi**
			inch of mercury	**inHg**
	pascal	**Pa**	inch of water	**inH2O**
	megapascal	**MPa**	pound per square inch	**psi**

Typical applications	Metric unit		Imperial unit	
	Name	**Symbol**	**Name**	**Symbol**
Temperature (other than Thermodynamic)				
	degrees Celsius	**°C**	degrees Fahrenheit	**°F**
Time				
	hour	**h**	hour	**h**
	minute	**min**	minute	**min**
	second	**s**	second	**s**
Torque (includes Bending moment, Moment of force, and Moment of a couple)				
	newton meter	**N m**	pound foot	**lb ft**
			pound foot	**lb in**
Velocity				
	kilometer per hour	**km/h**	mile per hour	**mph**
	meter per second	**m/s**	foot per second	**ft/s**
	millimeter per second	**mm/s**	inch per second	**in/s**
	meter per minute	**m/min**	foot per minute	**ft/min**
Volume (includes Capacity)				
	cubic meter	**mm³**	cubic yard	**yd³**
				cu yd
	liter	**l**	cubic inch	**in³**
	liter	**l**	US gallon	**US gal**
			UK gallon	**UK gal**
			US quart	**US qt**
			UK quart	**UK qt**
	milliliter	ml	fluid ounce	**fl oz**
Volume per time (includes Discharge and Flow rate)				
	cubic meter per minute	**m³/min**	cubic foot per minute	**ft³/min**
	liter per minute	**l/min**	US gallon per minute	**US gal/min**
	milliliter per minute	**ml/min**	UK gallon per minute	**UK gal/min**
Sound power level and Sound pressure level				
	decibel	**dB**	decibel	**dB**

SERVICE MANUAL

Engine

7630 [Z7CA27168 -]
8030 [Z7CA27168 -]

Contents

Engine - 10

CONSUMABLES INDEX

Consumable	Reference	PAGE
Loctite® 5205	Engine block cover Front - Assemble	10.2 / 5
Loctite® 5205	Engine block cover Front - Assemble	10.2 / 5

Thanks very much for your reading,

Want to get more information,

Please click here, Then get the complete manual

NOTE:

If there is no response to click on the link above, please download the PDF document first, and then click on it.

Have any questions please write to me:
admin@servicemanualperfect.com