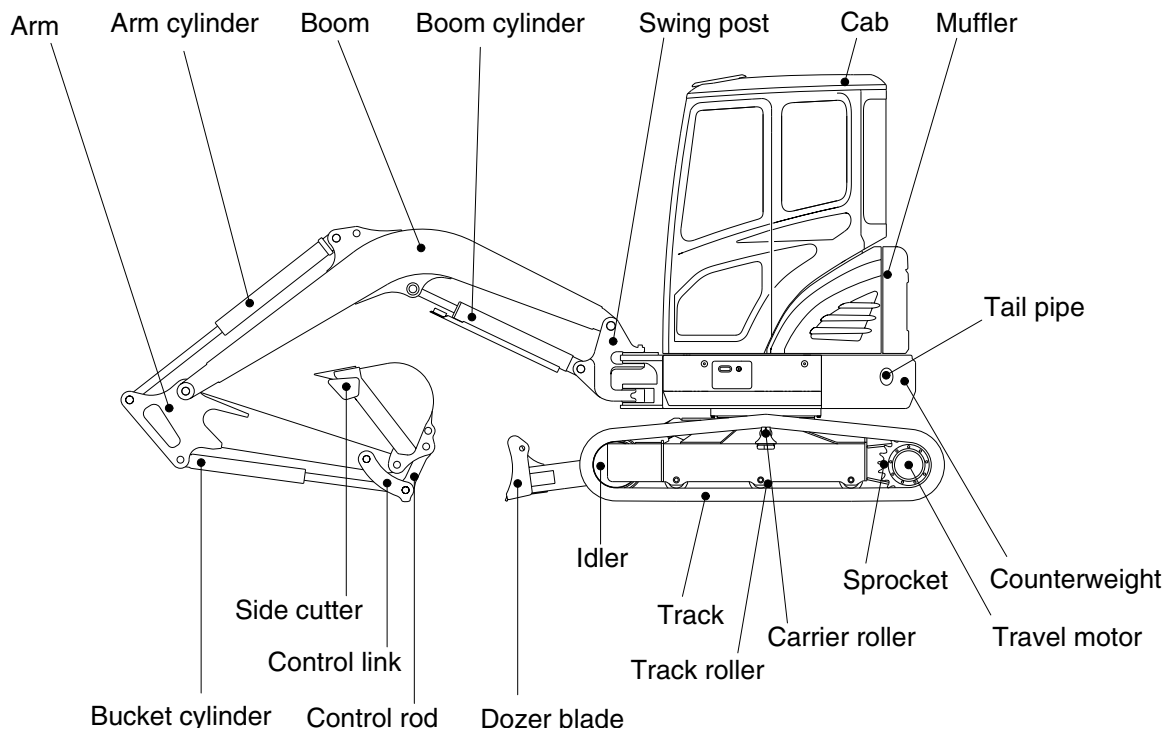
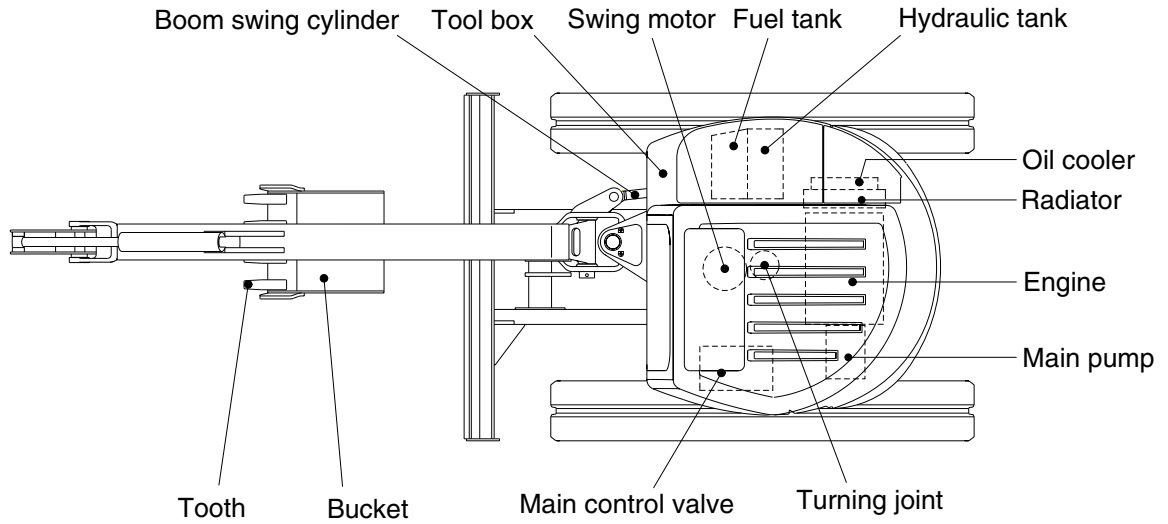


# GROUP 2 SPECIFICATIONS

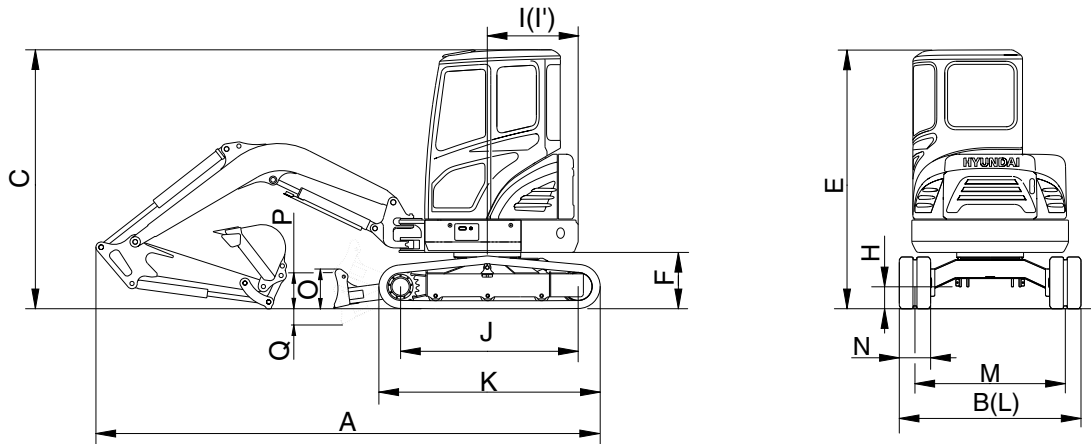
## 1. MAJOR COMPONENT



R27Z92SP01

## 2. SPECIFICATIONS

### 1) 2.03 m ( 6' 8") MONO BOOM, 1.12 m ( 3' 8") ARM, WITH BOOM SWING POST

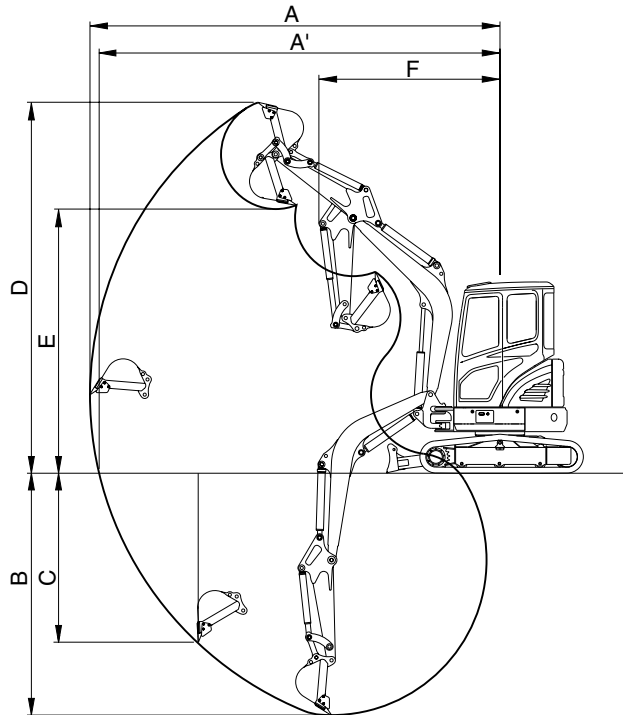


R27Z92SP02

Description		Unit	Specification
Operating weight (cabin / canopy)		kg (lb)	2880 (6350) / 2730 (6020)
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	0.08 (0.10)
Overall length	A	mm (ft-in)	4180 (13' 9")
Overall width, with 300 mm shoe	B		1550 ( 5' 1")
Overall height	C		2500 ( 8' 2")
Overall height of cab	E		2500 ( 8' 2")
Ground clearance of counterweight	F		540 ( 1' 9")
Minimum ground clearance	H		290 ( 0' 11")
Rear-end distance	I		775 ( 2' 7")
Rear-end swing radius	I'		775 ( 2' 7")
Distance between tumblers	J		1550 ( 5' 1")
Undercarriage length	K		1970 ( 6' 6")
Undercarriage width	L		1550 ( 5' 1")
Track gauge	M		1250 ( 4' 1")
Track shoe width, standard	N		300 (12")
Height of blade	O		300 ( 1' 0")
Ground clearance of blade up	P		370 ( 1' 3")
Depth of blade down	Q		450 ( 1' 6")
Travel speed (low/high)		km/hr (mph)	2.4/4.4 (1.5/2.7)
Swing speed		rpm	9.0
Gradeability		Degree (%)	30 (58)
Ground pressure 300 mm rubber shoe (cab / canopy)		kgf/cm <sup>2</sup> (psi)	0.29 (4.12) / 0.27 (3.84)

### 3. WORKING RANGE

#### 1) 2.03 m (6' 8") MONO BOOM WITH BOOM SWING POST



R27Z92SP03

Description		1.12 m (3' 8") Arm	
Max digging reach	A	4650 mm (15' 3")	
Max digging reach on ground	A'	4515 mm (14'10")	
Max digging depth	B	2500 mm ( 8' 2")	
Max vertical wall digging depth	C	2085 mm ( 6'10")	
Max digging height	D	4270 mm (14'10")	
Max dumping height	E	2890 mm ( 9' 6")	
Min swing radius	F	2055 mm ( 6' 9")	
Boom swing radius (left/right)		75°/50°	
Bucket digging force	SAE	17.9 kN	
		1830 kgf	
		4030 lbf	
	ISO	20.1 kN	
		2050 kgf	
		4520 lbf	
Arm crowd force	SAE	13.1 kN	
		1340 kgf	
		2950 lbf	
	ISO	13.7 kN	
		1400 kgf	
		3090 lbf	

#### 4. WEIGHT











Item	kg	lb
Upperstructure assembly	1640	3615
Main frame weld assembly	360	795
Engine assembly	136	300
Main pump assembly	19	42
Main control valve assembly	25	55
Swing motor assembly	34	75
Hydraulic oil tank assembly	50	110
Fuel tank assembly	30	70
Boom swing post	80	180
Counterweight	220	485
Cab assembly	210	460
Lower chassis assembly	910	2010
Track frame weld assembly	400	880
Swing bearing	50	110
Travel motor assembly	36	80
Turning joint	10	22
Track recoil spring	16	35
Idler	19	42
Carrier roller	3	7
Track roller	6	13
Sprocket	7	15
Rubber track (300 mm)	118	260
Dozer blade assembly	125	275
Front attachment assembly	330	730
(2.03 m boom, 1.12 m arm, 0.08 m <sup>3</sup> SAE heaped bucket)	140	310
2.5 m boom assembly	100	220
1.12 m arm assembly	50	110
0.08 m <sup>3</sup> SAE heaped bucket	60	130
Boom cylinder assembly	31	68
Arm cylinder assembly	25	55
Bucket cylinder assembly	18	40
Bucket control link assembly	20	45
Dozer cylinder assembly	24	53
Boom swing cylinder assembly	23	51

## 5. LIFTING CAPACITIES

1) 2.03 m ( 6' 8") boom, 1.12 m ( 3' 8") arm equipped with 0.08 m<sup>3</sup> (SAE heaped) bucket and 300 mm (12") rubber track, the dozer blade up with 220 kg (485 lb) counterweight.



•  : Rating over-front











•  : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (10.0 ft)		3.5 m (11.5 ft)		Capacity		Reach
												m (ft)
3.5 m (11.5 ft)	kg lb									610 1340	460 1010	3.07 (10.1)
3.0 m (10.0 ft)	kg lb					610 1340	450 990			460 1010	340 750	3.63 (11.9)
2.5 m (8.2 ft)	kg lb					610 1340	450 990	460 1010	340 750	380 840	290 640	3.99 (13.1)
2.0 m (6.6 ft)	kg lb			830 1830	610 1340	600 1320	450 990	460 1010	340 750	350 770	250 550	4.22 (13.8)
1.5 m (5.0 ft)	kg lb			800 1760	590 1300	590 1300	440 970	460 1010	340 750	320 710	240 530	4.35 (14.3)
1.0 m (3.3 ft)	kg lb			770 1700	560 1230	580 1280	420 930	450 990	330 730	320 710	230 510	4.39 (14.4)
0.5 m (1.6 ft)	kg lb			750 1650	540 1190	570 1260	410 900	440 970	320 710	320 710	230 510	4.35 (14.3)
Ground Line	kg lb	1080 2380	750 1650	740 1630	530 1170	560 1230	400 880	440 970	320 710	330 730	240 530	4.22 (13.8)
-0.5 m (-1.6 ft)	kg lb	1080 2380	750 1650	740 1630	530 1170	550 1210	400 880	440 970	320 710	360 790	260 570	4.00 (13.1)
-1.0 m (-3.3 ft)	kg lb	1090 2400	760 1680	740 1630	530 1170	560 1230	400 880			420 930	300 660	3.64 (11.9)
-1.5 m (-5.0 ft)	kg lb	1110 2450	780 1720	760 1680	550 1210					550 1210	400 880	3.09 (10.1)
-2.5 m (-8.2 ft)	kg lb									570 1260	420 930	3.06 (10.0)

- Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
  2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  3. The load point is a hook located on the back of the bucket.
  4. \*indicates load limited by hydraulic capacity.

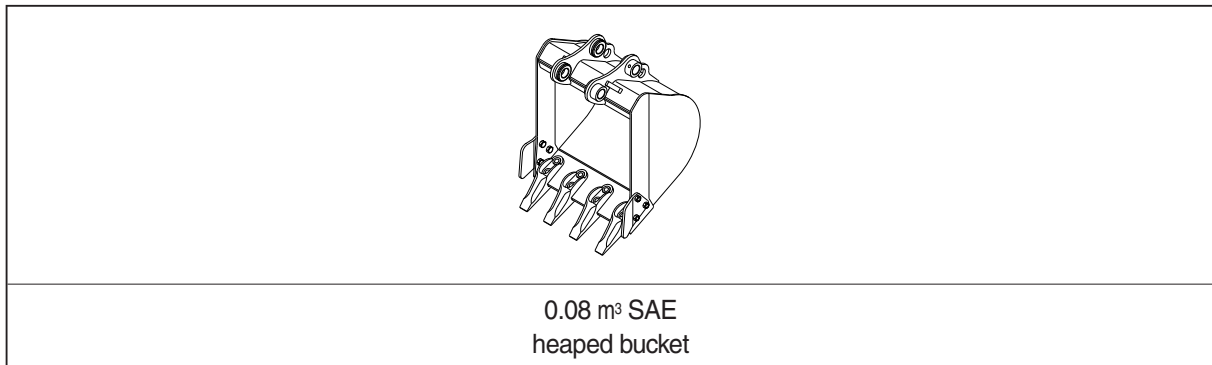
2) 2.03 m ( 6' 8") boom, 1.12 m ( 3' 8") arm equipped with 0.08 m<sup>3</sup> (SAE heaped) bucket and 300 mm (12") rubber track, the dozer blade down with 220 kg (485 lb) counterweight.

-  : Rating over-front
-  : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (10.0 ft)		3.5 m (11.5 ft)		Capacity		Reach m (ft)
												
3.5 m (11.5 ft)	kg lb									*670 *1480	490 1080	3.07 (10.1)
3.0 m (10.0 ft)	kg lb					*760 *1680	480 1060			*600 *1320	360 790	3.63 (11.9)
2.5 m (8.2 ft)	kg lb					*970 *2140	490 1080	*570 *1260	370 820	*570 *1260	310 680	3.99 (13.1)
2.0 m (6.6 ft)	kg lb			*1270 *2800	650 1430	*1170 *2580	480 1060	*900 *1980	370 820	*570 *1260	270 600	4.22 (13.8)
1.5 m (5.0 ft)	kg lb			*2200 *4850	630 1390	*1640 *3620	470 1040	*1140 *2510	360 790	*570 *1260	260 570	4.35 (14.3)
1.0 m (3.3 ft)	kg lb			*2710 *5970	600 1320	1880 4140	450 990	1380 3040	350 770	*600 *1320	250 550	4.39 (14.4)
0.5 m (1.6 ft)	kg lb			2840 6260	580 1280	1860 4100	440 970	1370 3020	350 770	*630 *1390	250 550	4.35 (14.3)
Ground Line	kg lb	*1490 *3280	810 1790	2820 6220	570 1260	1850 4080	430 950	1360 3000	340 750	*690 *1520	260 570	4.22 (13.8)
-0.5 m (-1.6 ft)	kg lb	*2090 *4610	810 1790	2810 6190	570 1260	1840 4060	430 950	*1070 *2360	340 750	*790 *1740	280 620	4.00 (13.1)
-1.0 m (-3.3 ft)	kg lb	*3030 *6680	820 1810	*2750 *6060	570 1260	1850 4080	440 970			*950 *2090	330 730	3.64 (11.9)
-1.5 m (-5.0 ft)	kg lb	*2850 *6280	840 1850	*2040 *4500	590 1300					*1320 *2910	430 950	3.09 (10.1)
-2.5 m (-8.2 ft)	kg lb									*1040 *2290	450 990	3.06 (10.0)

- Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
  2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  3. The load point is a hook located on the back of the bucket.
  4. \*indicates load limited by hydraulic capacity.

## 6. BUCKET SELECTION GUIDE



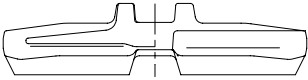
Capacity		Width		Weight	Recommendation
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.03 m (6' 8") boom
					1.12 m (3' 8") arm
0.08m <sup>3</sup> (0.10 yd <sup>3</sup> )	0.09 m <sup>3</sup> (0.12 yd <sup>3</sup> )	450 mm (17.7")	510 mm (20")	80 kg (176 lb)	Applicable for materials with density of 1600 kgf/m <sup>3</sup> (2700 lb /yd <sup>3</sup> ) or less

## 7. UNDERCARRIAGE

### (1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

### (2) TYPES OF SHOES

Model	Shapes		Rubber track
			
R27Z-9	Shoe width	mm (in)	300 (12")
	Operating weight	kg (lb)	2880 (6350)
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.29 (4.12)
	Overall width	mm (ft-in)	1550 (5' 1")

### (3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	1 EA
Track rollers	3 EA

## 8. SPECIFICATIONS FOR MAJOR COMPONENTS

### 1) ENGINE

Item	Specification
Model	Mitsubishi S3L2
Type	4-cycle vertical overhead valve, diesel fuel
Cooling method	Water cooling
Number of cylinders and arrangement	3 cylinders, in-line
Firing order	1-3-2
Combustion chamber type	Swirl chamber type
Cylinder bore × stroke	78 × 92 mm (3.07" × 3.62")
Piston displacement	1318 cc (80.4 cu in)
Compression ratio	22 : 1
Rated gross horse power (SAE J1995)	24.7 Hp at 2300 rpm (18.4 kW at 2300 rpm)
Maximum torque at 1800 rpm	8 kgf · m (57.8 lbf · ft)
Engine oil quantity	5.9 l (1.6 U.S. gal)
Dry weight	136 kg (300 lb)
High idling speed	2500+ 30 rpm
Low idling speed	1160 ± 25 rpm
Rated fuel consumption	198 g/HP · hr at 2300 rpm (265 g/kW · hr at 2300 rpm)
Starting motor	12V-1.7 kW
Alternator	12V-40 A
Battery	1 × 12 V × 58 Ah (5h rating)

### 2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 12 cc/rev
Rated oil flow	2 × 27.6 l /min (7.3 U.S. gpm / 6.1 U.K. gpm)
Rated speed	2300 rpm

### 3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	8.5/4.5 cc/rev
Rated oil flow	19.6/10.4 l /min (5.2/2.7 U.S. gpm / 4.3/2.3 U.K. gpm)

### 4) MAIN CONTROL VALVE

Item	Specification
Type	Sectional, 9 spools (12 blocks)
Operating method	Hydraulic pilot system
Main relief valve pressure	220 kgf/cm <sup>2</sup> (3130 psi)
Overload relief valve pressure	240 kgf/cm <sup>2</sup> (3410 psi)

### 5) SWING MOTOR

Item	Specification
Type	Fixed displacement axial piston motor
Capacity	12.5 cc/rev
Relief pressure	170 kgf/cm <sup>2</sup> (2420 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	7.0 kgf · m (50.6 lbf · ft)
Brake release pressure	25~50 kgf/cm <sup>2</sup> (356~710 psi)
Reduction gear type	2 - stage planetary

### 6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	220 kgf/cm <sup>2</sup> (3130 psi)
Reduction gear type	2-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	19 kgf/cm <sup>2</sup> (270 psi)
Braking torque	5.7 kgf · m (41 lbf · ft)

## 7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	∅ 75 × ∅ 45 × 565 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	∅ 65 × ∅ 40 × 500 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	∅ 60 × ∅ 35 × 420 mm
	Cushion	-
Boom swing cylinder	Bore dia × Rod dia × Stroke	∅ 85 × ∅ 45 × 140 mm
	Cushion	-
Dozer cylinder	Bore dia × Rod dia × Stroke	∅ 70 × ∅ 40 × 400 mm
	Cushion	-

※ Discoloration of cylinder rod can occur when the friction reduction additive of lubrication oil spreads on the rod surface.

※ Discoloration does not cause any harmful effect on the cylinder performance.

## 8) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
Standard	0.08 m <sup>3</sup> (0.10 yd <sup>3</sup> )	0.09 m <sup>3</sup> (0.12 yd <sup>3</sup> )	4	450 mm (17.7")	510 mm (20")

## 9. RECOMMENDED OILS

Use only oils listed below or equivalent.  
Do not mix different brand oil.

Service point	Kind of fluid	Capacity l (U.S. gal)	Ambient temperature °C ( °F)								
			-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)		
Engine oil pan	Engine oil	5.9 (1.6)				SAE 30					
			SAE 10W								
			SAE 10W-30								
						SAE 15W-40					
Final drive	Gear oil	0.6×2 (0.16×2)		SAE 85W-140							
Hydraulic tank	Hydraulic oil	Tank: 32 (8.5) System: 60 (15.9)	ISO VG 32								
						ISO VG 46					
						ISO VG 68					
Fuel tank	Diesel fuel	38 (10)	ASTM D975 NO.1								
						ASTM D975 NO.2					
Fitting (Grease nipple)	Grease	As required	NLGI NO.1								
						NLGI NO.2					
Radiator (Reservoir tank)	Mixture of antifreeze and water 50 : 50	5 (1.3)	Ethylene glycol base permanent type								

**SAE** : Society of Automotive Engineers

**API** : American Petroleum Institute

**ISO** : International Organization for Standardization

**NLGI** : National Lubricating Grease Institute

**ASTM** : American Society of Testing and Material