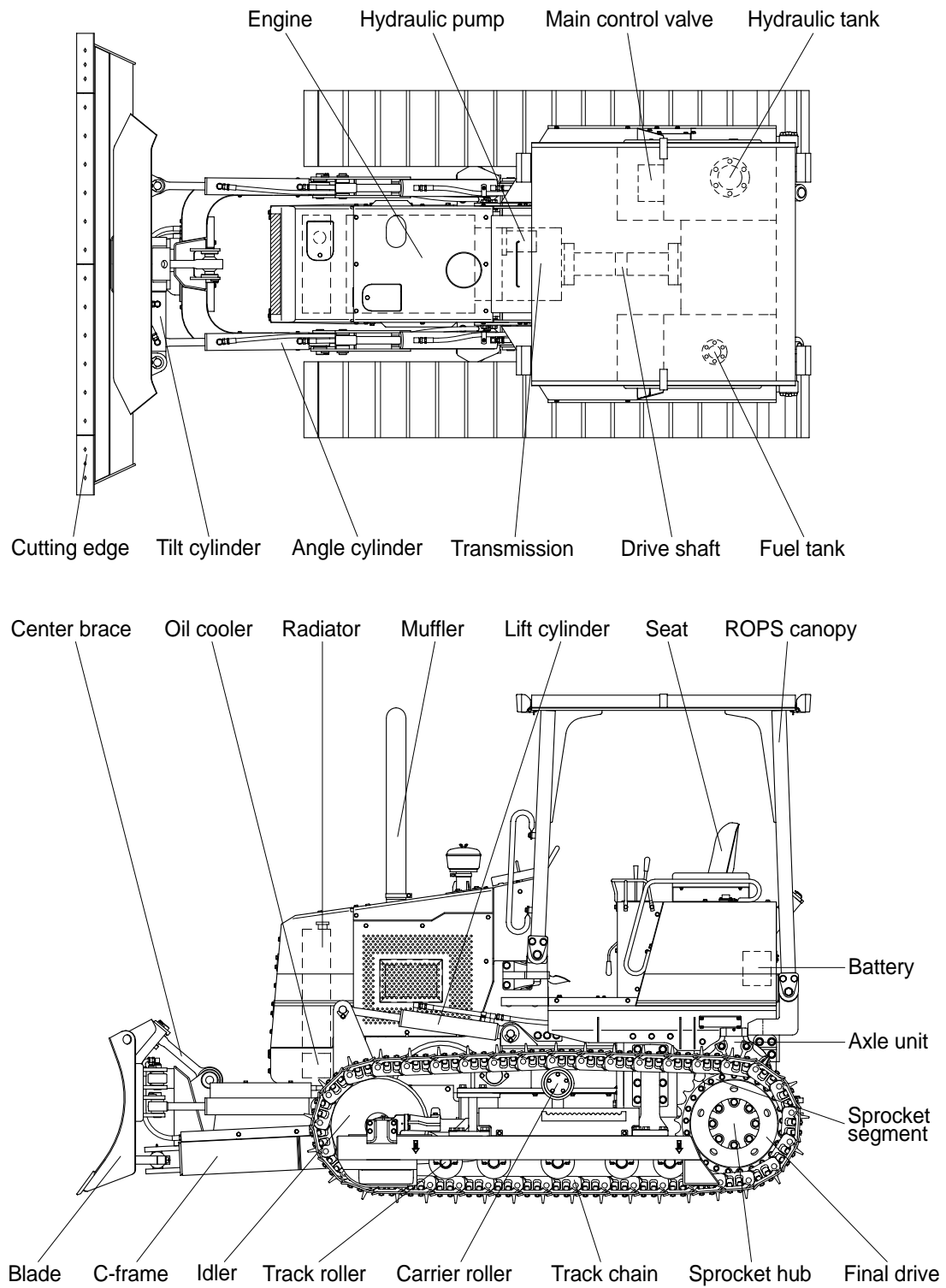


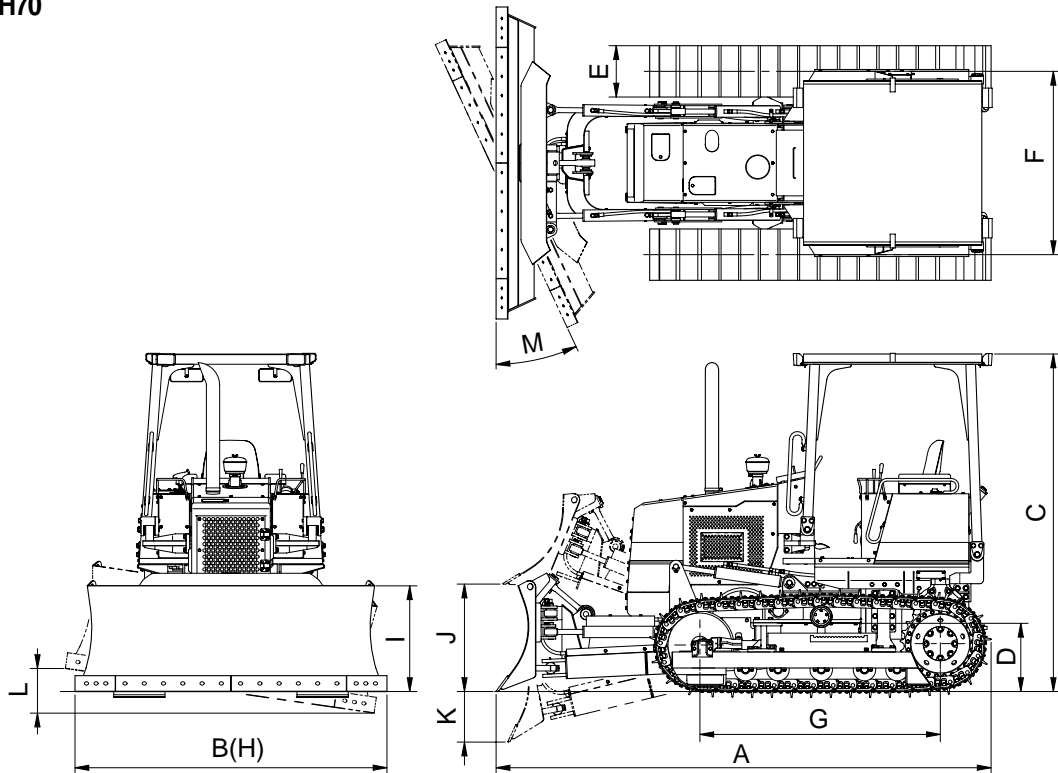
GROUP 2 SPECIFICATIONS

1. MAJOR COMPONENT



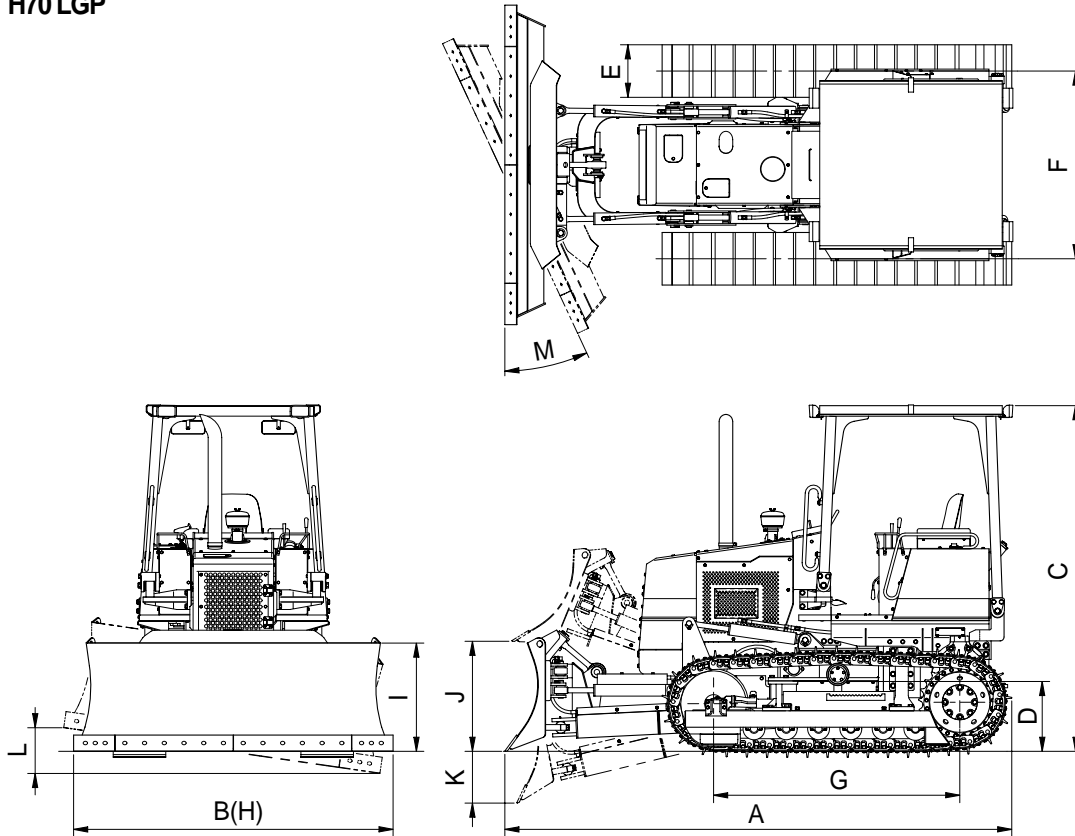
2. SPECIFICATIONS

1) H70



Description		Unit	Specification
Operating weight		kg(lb)	7050(15540)
Overall length	A	mm(ft-in)	3916(12' 10")
Overall width	B		2468(8' 1")
Overall height of canopy	C		2670(8' 9")
Minimum ground clearance	D		394(1' 4")
Track shoe width	E		406(1' 4")
Track gauge	F		1450(4' 9")
Distance between tumblers	G		1902(6' 3")
Blade width	H		2468(8' 1")
Blade height	I		837(2' 9")
Blade lifting height	J		850(2' 9")
Blade lowering depth	K		400(1' 4")
Blade max tilt	L		353(1' 2")
Blade max angle	M	Degree	25°
Gradeability		Degree(%)	45° (100%)
Ground pressure(406mm shoe)		kg/cm ² (psi)	0.45(6.4)
Blade capacity		m ³ (yd ³)	1.38(1.81)
Travel speed(Forward and reverse)	1st	km/h(mph)	3.1(1.9)
	2nd		5.9(3.7)
	3rd		11.7(7.2)

2) H70 LGP



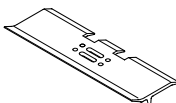
Description		Unit	Specification
Operating weight		kg(lb)	7650(16870)
Overall length	A	mm(ft-in)	4050(13' 4")
Overall width	B		3092(10' 2")
Overall height of canopy	C		2670(8' 9")
Minimum ground clearance	D		394(1' 4")
Track shoe width	E		635(2' 1")
Track gauge	F		1678(5' 6")
Distance between tumblers	G		2055(6' 9")
Blade width	H		3092(10' 2")
Blade height	I		820(2' 8")
Blade lifting height	J		892(2' 11")
Blade lowering depth	K		430(1' 5")
Blade max tilt	L		470(1' 7")
Blade max angle	M	Degree	25°
Gradeability		Degree(%)	45° (100%)
Ground pressure(635mm shoe)		kg/cm ² (psi)	0.29(4.1)
Blade capacity		m ³ (yd ³)	1.65(2.16)
Travel speed(Forward and reverse)	1st	km/h(mph)	3.1(1.9)
	2nd		5.9(3.7)
	3rd		11.7(7.2)

3. WEIGHT

Item	H70		H70 LGP	
	kg	lb	kg	lb
Front frame weld assembly	264	582	—	
Engine assembly	335	739	—	
Hydraulic pump assembly	6	13	—	
Main control valve assembly	18	40	—	
Transmission assembly	147	324	—	
Hydraulic oil tank assembly	129	284	—	
Fuel tank assembly	134	295	—	
Axle unit assembly	1100	2425	—	
ROPS canopy assembly	415	915	—	
Track frame weld assembly	425	937	453	999
Drive shaft	13	29	—	
C-frame weld assembly	360	794	397	875
Sprocket	40	88	—	
Track recoil spring	48	106	—	
Idler	86	190	—	
Carrier roller	15	33	—	
Track roller	23	51	—	
Track chain assembly(406mm standard shoe)	487	1074	-	-
Track chain assembly(635mm option shoe)	-	-	672	1482
Operator's seat assembly	33	73	—	
Blade assembly	390	860	435	959
Cutting edge(4 piece)	48	106	—	
Lift cylinder assembly	22	49	—	
Angle cylinder assembly	25	55	—	
Tilt cylinder assembly	18	40	—	
Drawbar assembly	11	24	—	

4. UNDERCARRIAGE

1) TYPES OF SHOES

Shapes		Single grouser	
			
		H70	H70 LGP
Shoe width	mm(in)	406(16)	635(25)
Operating weight	kg(lb)	7050(15540)	7650(16870)
Ground pressure	kg/cm ² (psi)	0.45(6.4)	0.29(4.1)
Undercarriage width	mm(ft-in)	1856(6' 1")	2313(7' 7")

2) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity	
	H70	H70 LGP
Carrier rollers	1EA	1EA
Track rollers	5EA	6EA
Track shoes	37EA	39EA

5. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins B3.9-C
Type	4-cycle low emission diesel engine
Cooling method	Water cooling
Number of cylinders and arrangement	4 cylinders, in-line
Firing order	1-3-4-2
Combustion chamber type	Direct injection type
Cylinder bore × stroke	102 × 120mm(4.02" × 4.72")
Piston displacement	3920cc(239cu in)
Compression ratio	18.5 : 1
Rated gross horse power(SAE J1349)	80Hp at 2500rpm(60kW at 2500rpm)
Maximum torque at 1200rpm	26.7kgf · m(193lbf · ft)
Engine oil quantity	9.0 l (2.4U.S. gal)
Dry weight	308kg(680lb)
High idling speed	2750 ± 50rpm
Low idling speed	950 ± 100rpm
Rated fuel consumption	190.2g/Hp · hr
Starting motor	Delco Remy 28MT(24V)
Alternator	BOSCH(24V - 45AMP)
Battery	2 × 12V × 72Ah

2) HYDRAULIC PUMP

Item	Specification
Type	2 basic unidirectional pump
Capacity(Front/Rear)	17.0/8.4cc/rev
Maximum continuous pressure P1(Front/Rear)	180kgf/cm ² (2610psi)/125kgf/cm ² (1813psi)
Maximum speed at pressure P1	3500rev/min
Minimum speed at pressure P1	500rev/min
Shaft seal type	Double nitrile
Rated oil flow	46.7 l /min
Pressure	175kg/cm ² (2500psi)

3) MAIN CONTROL VALVE

Item	Specification
Type	3 spools five block
Operating method	Mechanical system
Main relief valve pressure	175kgf/cm ² (2500psi)

4) CYLINDER

Item	Specification
Lift cylinder	Bore dia × Rod dia × Stroke ø 75 × ø 40 × 335mm
Tilt cylinder	Bore dia × Rod dia × Stroke ø 75 × ø 40 × 125mm
Angle cylinder	Bore dia × Rod dia × Stroke ø 75 × ø 40 × 372mm

5) SHOE

Model	Width	Ground pressure	Shoe quantity	Undercarriage width
H70	406mm(16")	0.45kgf/cm ² (6.4psi)	37	1856mm(6' 1")
H70 LGP	635mm(25")	0.29kgf/cm ² (4.12psi)	39	2313mm(7' 7")

6) POWER TRAIN

Item	Specification
Power transfer	1-stage torque converter
Transmission	Counter shaft
Brake	Wet, multi disk
Final drive	Single reduction

6. TIGHTENING TORQUE OF MAJOR COMPONENT

No.	Descriptions		Bolt size	Torque	
				kgf · m	lbf · ft
1	Engine	Engine mounting bolt(Front)	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
2		Engine mounting bolt(Rear)	M16 × 2.0	30.6 ± 4.6	221 ± 33.3
3		Radiator mounting bolt(Lower)	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
4		Radiator mounting bolt(Upper)	M10 × 1.5	6.9 ± 1.4	50 ± 10.1
5	Hydraulic system	Main pump mounting bolt	3/8-16 UNC	4.6 ± 0.7	33.3 ± 5.1
6		Main control valve mounting bolt	M10 × 1.5	6.9 ± 1.4	50 ± 10.1
7		Fuel tank mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
8		Hydraulic oil tank mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
9		Clutch and brake control mounting bolt, nut	M10 × 1.5	6.9 ± 1.4	50 ± 10.1
10	Power train system	Transmission mounting bolt	M10 × 1.5	4.6 ± 0.9	33.3 ± 6.5
11		Torque converter mounting bolt	3/8-24 UNF	3.8 ± 0.2	27.5 ± 1.4
12		Drive shaft mounting bolt(Front)	3/8-24 UNF	3.8 ± 0.2	27.5 ± 1.4
13		Drive shaft mounting bolt(Rear)	M10 × 1.5	4.6 ± 0.9	33.3 ± 6.5
14		Axle unit mounting bolt	M20 × 2.5	57.6 ± 8.4	417 ± 60.8
15		Sprocket segment mounting bolt, nut	M14 × 2.0	24.3 ± 3.6	176 ± 26.0
16		Sprocket-hub mounting bolt	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
17	Under carriage	Carrier roller mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
18		Track roller mounting bolt	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
19		Track tension device mounting bolt	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
20		Track tension device stopper mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
21		Track shoe mounting bolt, nut	9/16-18 UNF	23.9 ± 2.0	173 ± 14.1
22	Others	Rops canopy bracket mounting bolt(Front)	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
23		Rops canopy mounting bolt(Front)	M24 × 3.0	100 ± 15	723 ± 109
24		Rops canopy bracket mounting bolt(Rear)	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
25		Rops canopy mounting bolt(Rear)	M24 × 3.0	100 ± 15	723 ± 109
26		Operator's seat mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
27		Draw bar mounting bolt	M24 × 3.0	100 ± 15	723 ± 109
28		Arm rest mounting bolt	M10 × 1.5	6.9 ± 1.4	50 ± 10.1
29		Front frame mounting bolt	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
30		Front cross bar mounting bolt	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
31		Rear support mounting bolt	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
32		Cutting edge and end bit mounting bolt, nut	M20 × 2.5	57.9 ± 8.7	419 ± 62.9

7. TORQUE CHART

Use following table for unspecified torque.

1) BOLT AND NUT

(1) Coarse thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 6 × 1.0	0.85 ~ 1.25	6.15 ~ 9.04	1.14 ~ 1.74	8.2 ~ 12.6
M 8 × 1.25	2.0 ~ 3.0	14.5 ~ 21.7	2.73 ~ 4.12	19.7 ~ 29.8
M10 × 1.5	4.0 ~ 6.0	28.9 ~ 43.4	5.5 ~ 8.3	39.8 ~ 60
M12 × 1.75	7.4 ~ 11.2	53.5 ~ 79.5	9.8 ~ 15.8	71 ~ 114
M14 × 2.0	12.2 ~ 16.6	88.2 ~ 120	16.7 ~ 22.5	121 ~ 167
M16 × 2.0	18.6 ~ 25.2	135 ~ 182	25.2 ~ 34.2	182 ~ 247
M18 × 2.5	25.8 ~ 35.0	187 ~ 253	35.1 ~ 47.5	254 ~ 343
M20 × 2.5	36.2 ~ 49.0	262 ~ 354	49.2 ~ 66.6	356 ~ 482
M22 × 2.5	48.3 ~ 63.3	350 ~ 457	65.8 ~ 98.0	476 ~ 709
M24 × 3.0	62.5 ~ 84.5	452 ~ 611	85.0 ~ 115	615 ~ 832
M30 × 3.5	124 ~ 168	898 ~ 1214	169 ~ 229	1223 ~ 1655
M36 × 4.0	174 ~ 236	1261 ~ 1703	250 ~ 310	1808 ~ 2242

(2) Fine thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 8 × 1.0	2.17 ~ 3.37	15.7 ~ 24.3	3.04 ~ 4.44	22.0 ~ 32.0
M10 × 1.25	4.46 ~ 6.66	32.3 ~ 48.2	5.93 ~ 8.93	42.9 ~ 64.6
M12 × 1.25	7.78 ~ 11.58	76.3 ~ 83.7	10.6 ~ 16.0	76.6 ~ 115
M14 × 1.5	13.3 ~ 18.1	96.2 ~ 130	17.9 ~ 24.1	130 ~ 174
M16 × 1.5	19.9 ~ 26.9	144 ~ 194	26.6 ~ 36.0	193 ~ 260
M18 × 1.5	28.6 ~ 43.6	207 ~ 315	38.4 ~ 52.0	278 ~ 376
M20 × 1.5	40.0 ~ 54.0	289 ~ 390	53.4 ~ 72.2	386 ~ 522
M22 × 1.5	52.7 ~ 71.3	381 ~ 515	70.7 ~ 95.7	512 ~ 692
M24 × 2.0	67.9 ~ 91.9	491 ~ 664	90.9 ~ 123	658 ~ 890
M30 × 2.0	137 ~ 185	990 ~ 1338	182 ~ 248	1314 ~ 1795
M36 × 3.0	192 ~ 260	1389 ~ 1879	262 ~ 354	1893 ~ 2561

2) PIPE AND HOSE

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	3	21.7
3/8"	22	4	28.9
1/2"	27	5	36.2
3/4"	36	12	86.8
1"	41	14	101

3) FITTING

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	6	43.4
3/4"	36	13	94.0
1"	41	15	109

8. RECOMMENDED LUBRICANTS

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	9(2.4)				SAE 30			
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Transmission case	Gear oil	16.7(4.4)	DEXRON II D						
Main case	Gear oil	39(10.3)			SAE 30				
Final drive housing	Gear oil	13 × 2(3.4 × 2)	SAE 80W-90						
Hydraulic tank	Hydraulic oil	Tank: 54.3(14.3) System: 62.4(13.7)	ISO VG 32						
				ISO VG 46					
				ISO VG 68					
Fuel tank	Diesel fuel	124(32.8)	ASTM D975 NO.1						
				ASTM D975 NO.2					
Fitting (Grease nipple)	Grease	As required	NLGI NO.1						
				NLGI NO.2					
Radiator	Mixture of antifreeze and water 50 : 50	23(6.1)		Ethylene glycol base permanent type					