COMPACT EXCAVATOR

TB070W

WORKSHOP MANUAL

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SERIAL NUMBER
TB070W : 17n0004~

TAKEUCHI
TAKEUCHI MFG.CO.,LTD.



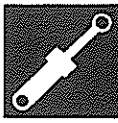
I. GENERAL



II. SPECIFICATIONS



III. MACHINE CONFIGURATION



IV. HYDRAULIC UNITS



V. TROUBLESHOOTING



VI. ENGINE

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TB070W ELECTRICAL -WIRING DIAGRAM

Note) CN-No. I~III→CONNECTOR-NUMBER

WIRING COLOUR EXAMPLE

W L

L — WIRING COLOUR(BLUE)

W — GROUND COLOUR(WHITE)

WIRING COLOUR TABLE

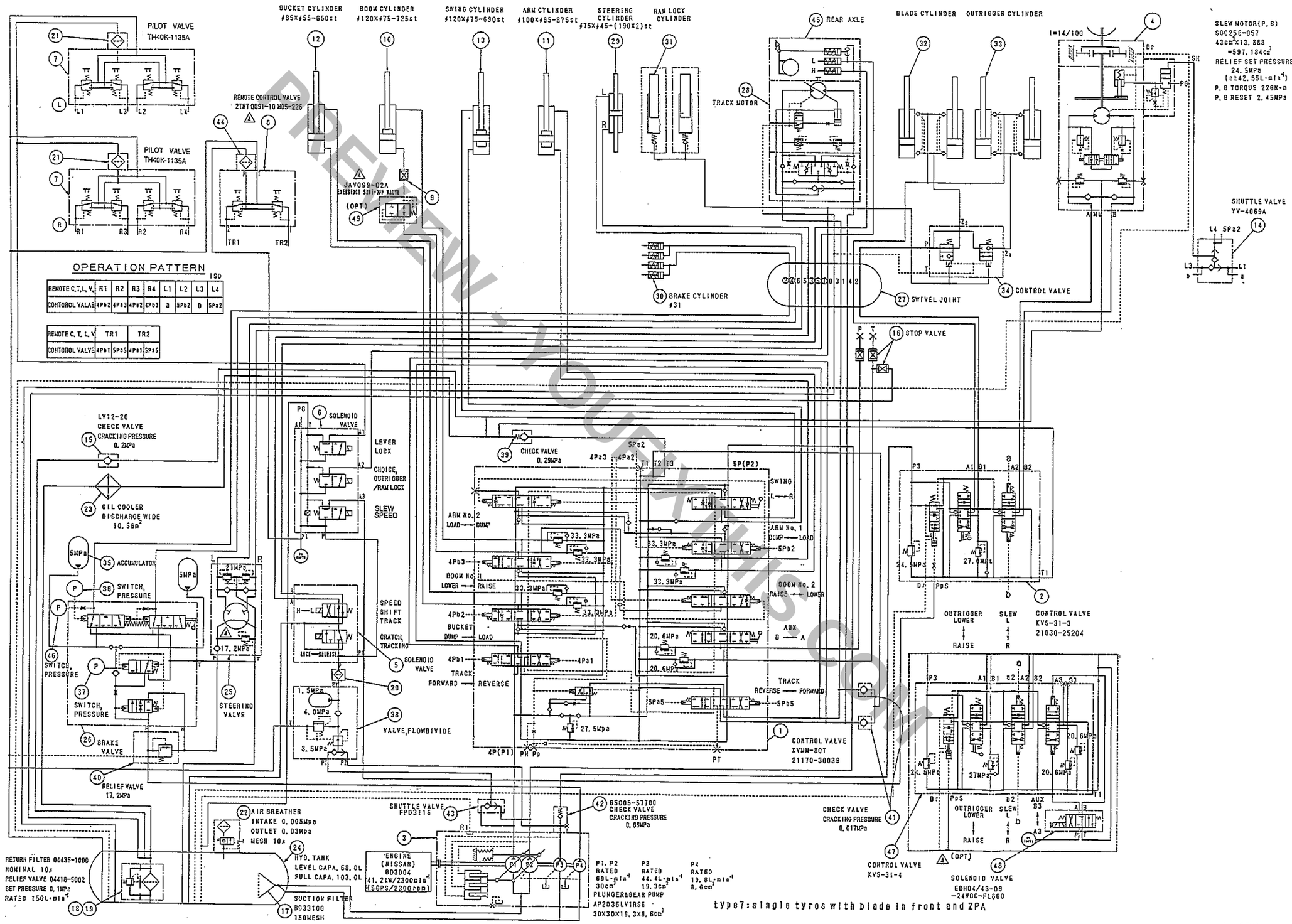
CODE	COLOUR	CODE	COLOUR	CODE	COLOUR	CODE	COLOUR
B	BLACK	W	WHITE	Br	BROWN	V	VIOLET
G	GREEN	Y	YELLOW	Lg	LIGHT GREEN	Dg	DARK GREEN
L	BLUE	P	PINK	Gr	GREY	Ch	CHOCOLATE
R	RED	O	ORANGE	Sb	SKY BLUE		

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HYDRAULIC SYSTEM

HYDRAULIC CIRCUIT DIAGRAM



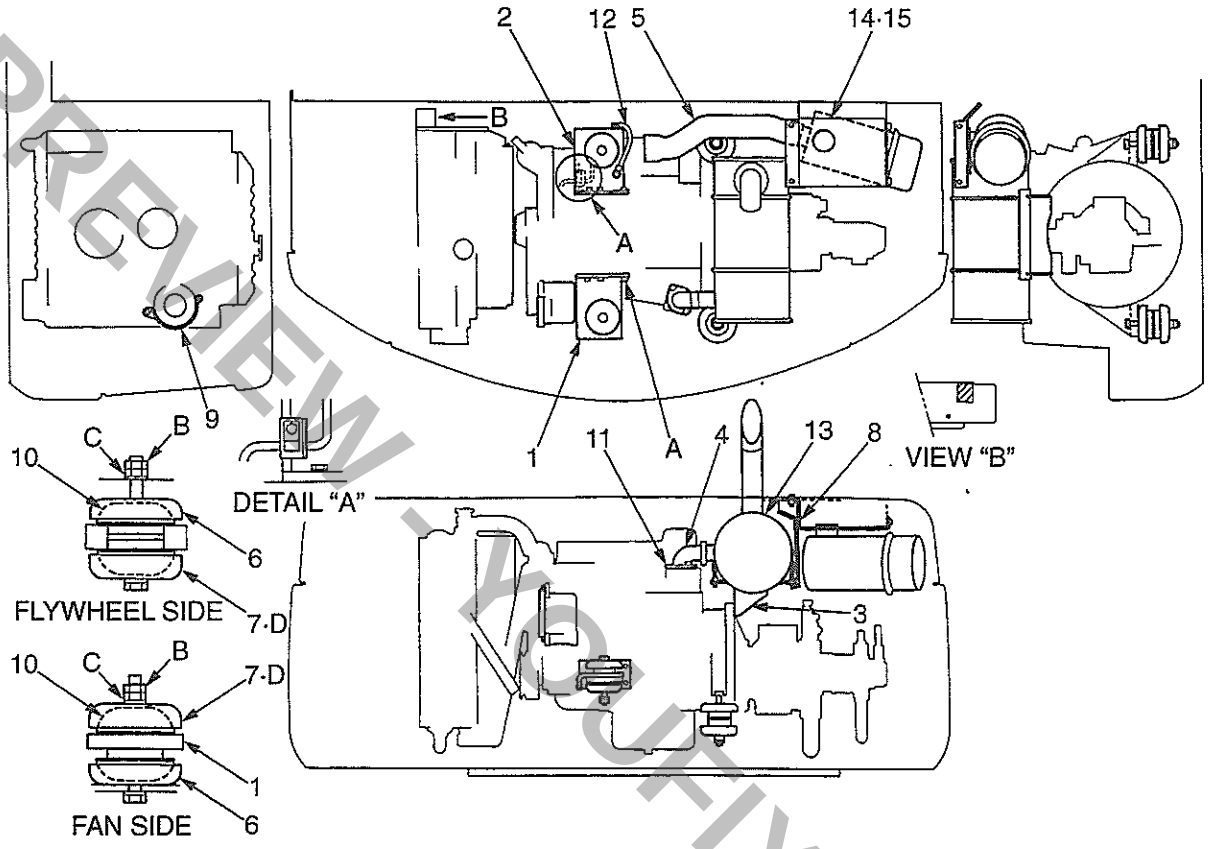
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DRIVE SYSTEM

CONSTRUCTION

Engine Mount



A: Tightening Torque 5.6kgf-m [Apply thread lock]
B: Tightening Torque 24.6kgf-m
C: Tightening Torque 19.7kgf-m
D: "A" mark

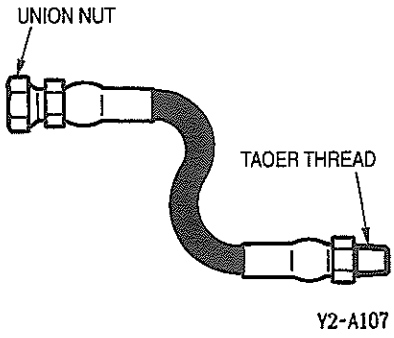
1. Engine Foot [L]
2. Engine Foot [R]
3. Bracket
4. Exhaust pipe
5. Air Cleaner Pipe
6. Stopper
7. Stopper
8. Bracket
9. Cover
10. Cushion Rubber
11. Gasket
12. Ground Cable
13. Silencer
14. Air Cleaner
15. Indicator Switch

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TIGHTENING TORQUES

Hydraulic Hoses

Hose Fitting Size	Torque			
	Union Nut (PF)		Taper Thread (PT)	
	kgf·m	ft-lb	kgf·m	ft-lb
1/8	$1.0^{+0.5}_{0}$	$7.3^{+3.5}_{0}$	1.2±0.12	8.7±0.8
1/4	$2.5^{+0.5}_{0}$	$18.1^{+3.5}_{0}$	3.0±0.30	21.7±2.1
3/8	$5.0^{+0.5}_{0}$	$36.2^{+3.5}_{0}$	5.5±0.55	39.8±3.9
1/2	$6.0^{+0.5}_{0}$	$43.4^{+3.5}_{0}$	9.0±0.90	65.1±6.4
3/4	$12.0^{+0.5}_{0}$	$86.8^{+3.5}_{0}$	15.0±1.50	108.5±10.7
1	$14.0^{+0.5}_{0}$	$101.3^{+3.5}_{0}$	20.0±2.00	144.7±14.3



Y2-A107

Bite Type Pipe Fitting for Steel Pipe

Pipe Outer Diameter (mm)	Torque	
	kgf·m	ft-lb
8	3.5±0.5	25.3±3.5
10	4.25±0.25	30.7±1.7
12	6.0±0.5	43.4±3.5
15	9.0±0.5	65.1±3.5
16	9.5±0.5	68.7±3.5
18	13.5±0.5	97.6±3.5
22	21.0±1.0	151.8±7.2
27.2	25.0±1.0	181.0±7.2
28	32.0±2.0	231.4±14.3
32	32.0±2.0	231.4±14.3
35	42.0±2.0	303.7±14.3


Y2-A108

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GENERAL CAUTIONS

1. Wear a helmet, safety shoes and work clothes.

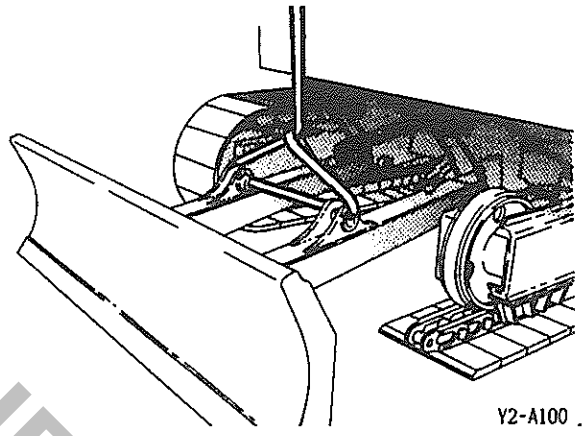
2. Be sure to check equipment and tools, particularly equipment used for hoisting.

3. If more than one person is working together, decide the job and call sign and maintain good communications during operations.

4. Crane operation and hoisting should be done by persons with the proper qualifications.

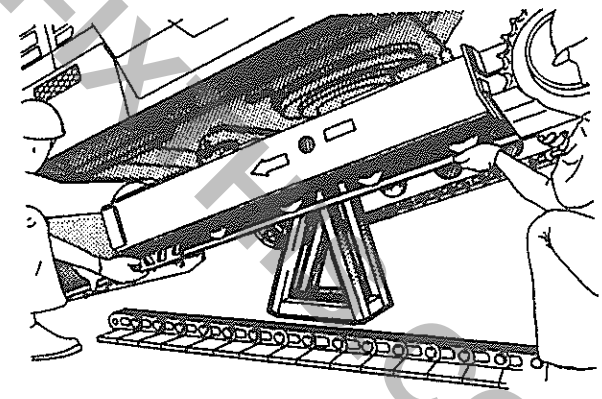
5. Keep all persons from getting underneath a suspended load.

6. Before removing the installation bolts of heavy parts, support the parts by temporary hoisting a crane.



Y2-A100

7. If lifting a machine with a hoe attachment, etc. and going underneath it, be sure to supprt it with stands etc.



Y2-A101

8. When repairing the electrical system, disconnect the cables from the battery before beginning the operation.

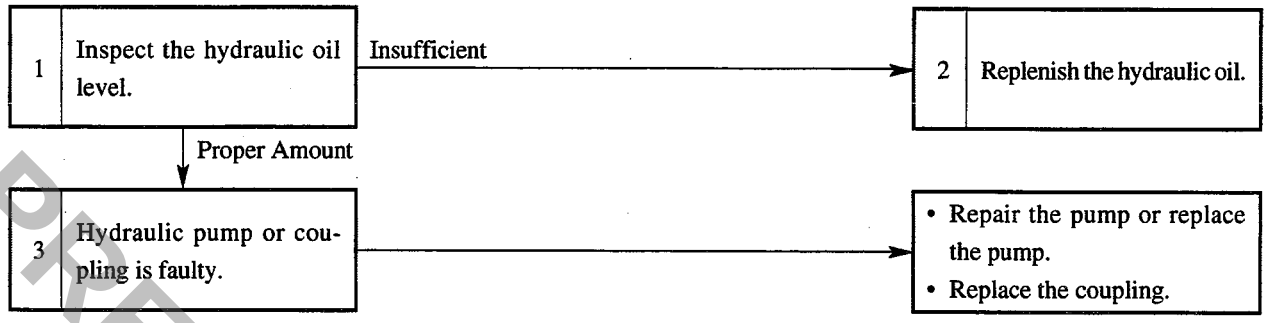
9. When welding the machine, disconnect the battery and the control connector first.

10. Maintain the standard tightening torques for piping and bolts, etc.

11. After completing repairs, run the engine at low speed, and conduct trial operation after filling it full with operating oil.

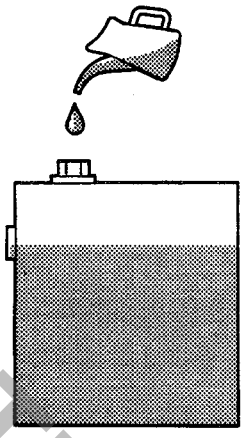
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NO OPERATIONS CAN BE DONE.



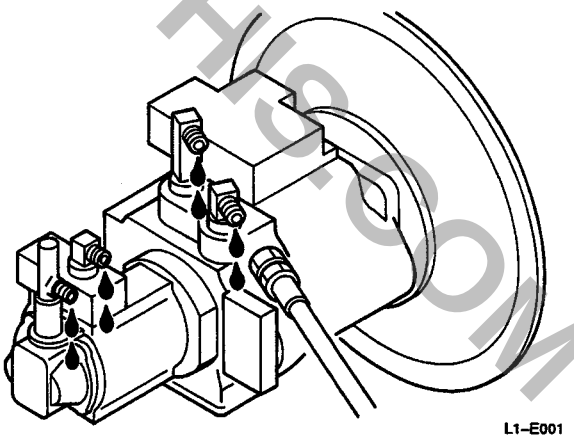
1. Inspect the hydraulic oil level.

2. Replenish the hydraulic oil.
   Replenish the hydraulic oil.
   - The hydraulic oil supplied should be the same brand as the oil currently in the tank.


Y2-E001

3. Hydraulic pump or coupling is faulty.
   a. Disconnect the discharge hose from the pump side. Also fit a plug in the disconnected hose to keep the hydraulic oil from pouring out.
   b. With the engine emergency stop knob pulled out all the way, turn the start switch to the "START" position to cause the engine to begin cranking. Check that the hydraulic oil is discharged from the pump at this time.

   If the pump is normal, hydraulic oil will be discharged from it. If hydraulic oil is not discharged, the pump or the coupling is faulty.


L1-E001

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SPECIFICATION TABLES

SPECIFICATION TABLES

Serial Number		17n0004~
Type		Twin Tire • Blade
Standard Bucket Capacity(SAE Rated)	(m^3)	0.245
Weight in Transport Condition	(kg)	7370
Dimensions	(mm)	
Overall Length (in Transport Position)		6275
Overall Width (in Transport Position)		2335
Overall Height (in Transport Position)		2920
Minimum Ground Clearance		335
Minimum Height of Upper Machinery		1140
Overall Width of Upper Machinery		2110
Track gauge		515
Wheel base		2100
Minimum Slew Radius		2685
Tail Swing Radius		1780
Dozer Blade Width		2300
Dozer Blade Height		540
Working Range	(mm)	
Maximum Digging Height		6780
Maximum Digging Depth		4055
Vertical Digging Depth		3220
Maximum Digging Reach		6945
Maximum Reach at Ground Level		6700
Maximum Dumping Height		4765
Bucket Offset: Right/Left		730 / 690
Dozer Blade Lift: Above/Below Ground		350 / 80
Performance		
Digging Force: Bucket/Arm	(kgf)	4800 / 3540
Slew Speed	(rpm)	5.5 / 10.5
Travel Speed	(km/h)	6.5 / 20
Traction Force	(kgf)	4650
Gradeability	(degree)	35 / 10.8

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FLUID CAPACITIES

Serial Number		17n0004~
Hydraulic Oil : Tank Level / Total System	(*l*)	68/132
Engine Oil : Upper Limit / Lower Limit	(*l*)	11/9
Slew Grease Bath	(cc)	8500
Slew Pinion Shaft Bearing	(cc)	200
Pump Spline	(cc)	100
Fuel Tank	(*l*)	120.2
Engine Cooling System	(*l*)	13

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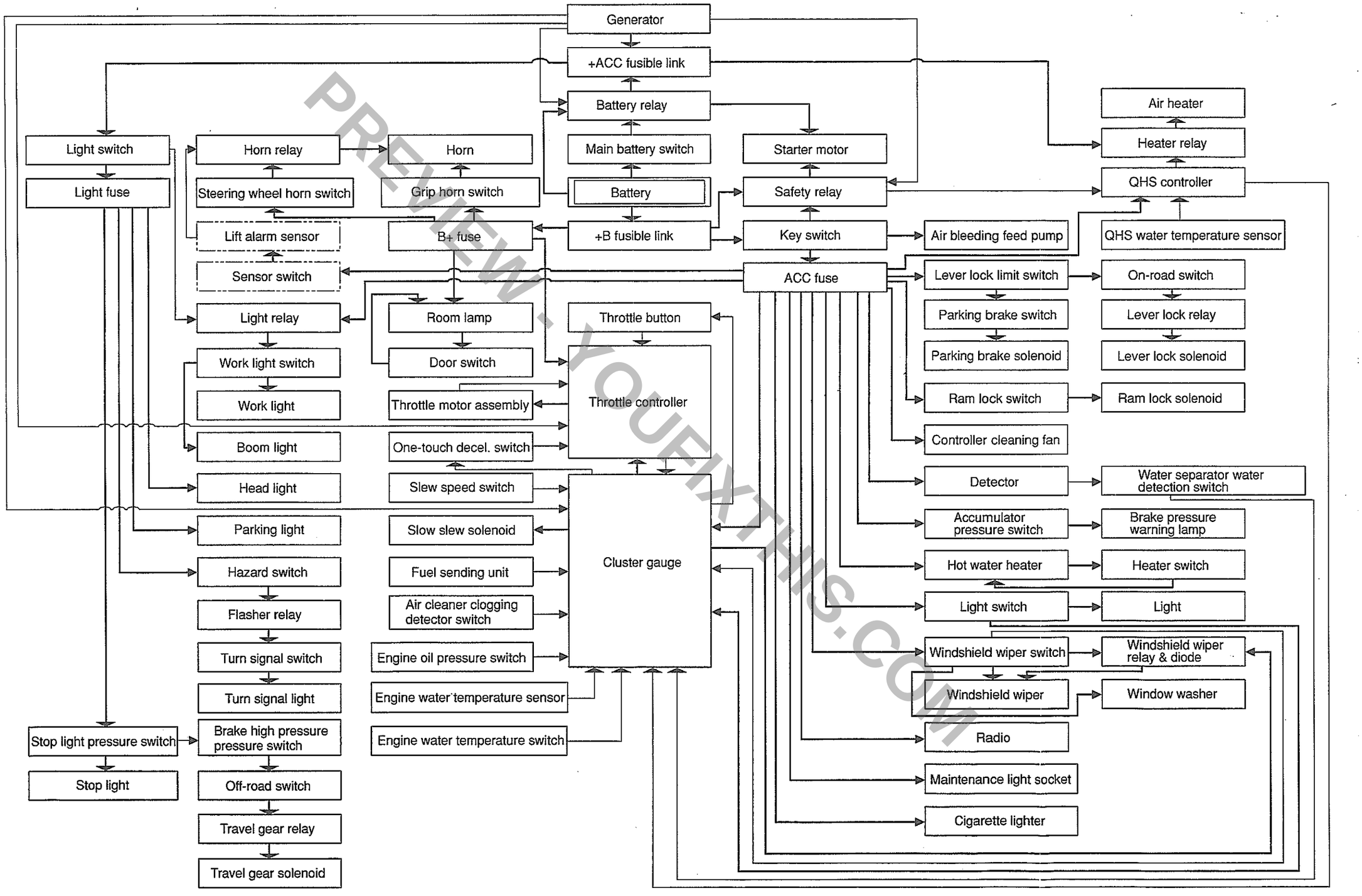
RECOMMENDED LUBRICANTS

Item	Hydraulic Oil	Grease Fitting	Slew Pinion Shaft Bearing
Interval	Every 1,000 hrs.	Every 10 hrs. Every 50 hrs.	(First 250 hrs.) Every 1,000 hrs.
	Antiwear hydraulic oil	EP-2 Lithium-base grease	
ESSO	Nuto H46	Beacon EP 2	
MOBIL	DTE 25	Mobiluxe EP 2	
GULF	Harmony 46 AW	Gulfcrown No.2 EP	
TEXACO	Regal R&O 46	Multifak EP 2	
SHELL	Tellus oil 46	Alvania EP 2	

1. When the oil is dirty or has deteriorated, replace it at shorter intervals than called for above.
2. As much as possible, when supplying oil and grease, use the same brand of lubricant. When replacing hydraulic oil, be sure to replace it all at once. Do not mix different brands of hydraulic oil.

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ELECTRICAL SYSTEM DIAGRAM



W1-C804

The thick line indicates the power line and the thin line indicates the signal flow [ ] is optional.

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OPERATION

(1) When the main battery switch is turned ON, voltage is applied to the battery relay coil and the battery relay is activated.
Furthermore, when the key switch is set to the ACC ON position, the ACC voltage activates the QHS controller (for the heater).
The QHS controller uses the special QHS water temperature sensor installed on the engine to measure the engine coolant water temperature, the appropriate heater operating time is set automatically based on this temperature, and voltage is applied to the heater relay coil. As a result, the air heater is activated.
At the same time, the glow lamp on the cluster gauge lights.
The preheating time is 1 second at 0°C and greater, 9 seconds at -10°C, 15 seconds at -20°C. As soon as the glow lamp turns off, the engine key switch turns to the start position.
Supplementary explanation
The +24V voltage from the battery is connected to the heater relay's C (common) pin via the battery relay and fusible link (large fuse).
In addition, the heater relay's NO (normal open) pin is connected to the engine's air heater pin.

(2) Furthermore. when the key switch is turned from the ON to the start position, the air heater's power is turned on automatically.

(3) When the key switch returns from the start to the ON position, the air heater automatically performs after-heating. The after-heating time is 5 seconds when the coolant water temperature is under 20°C, less than 2 seconds when the coolant water temperature is 20°C or over.

IMPORTANT The air heater's capacity is 55A. If the engine should fail to start, wait at least 30 seconds before trying again.

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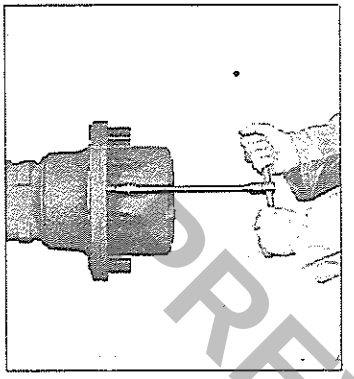
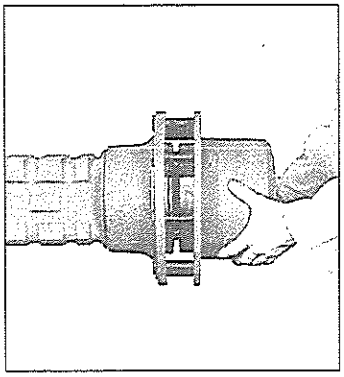
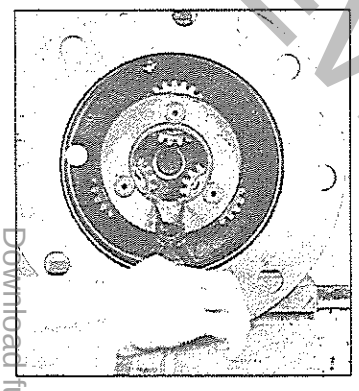
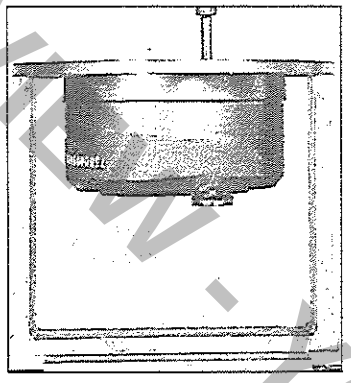
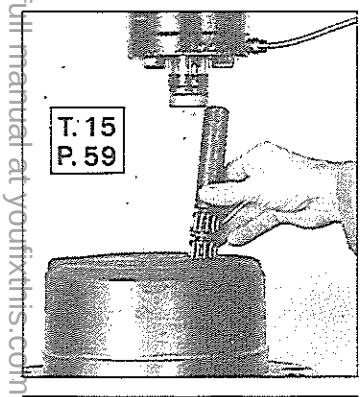
INSPECTION AND ADJUSTMENT

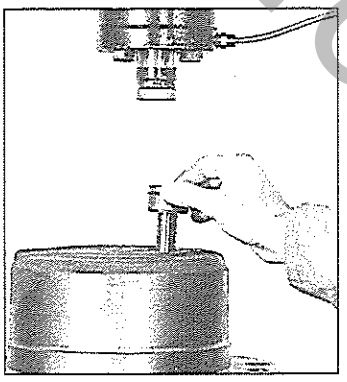
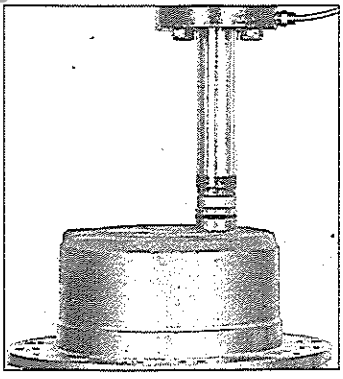
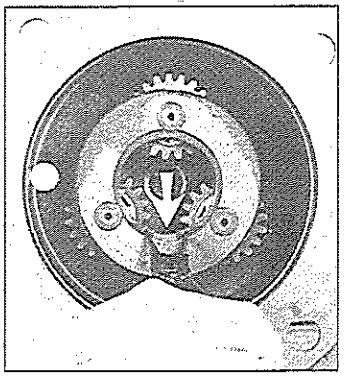
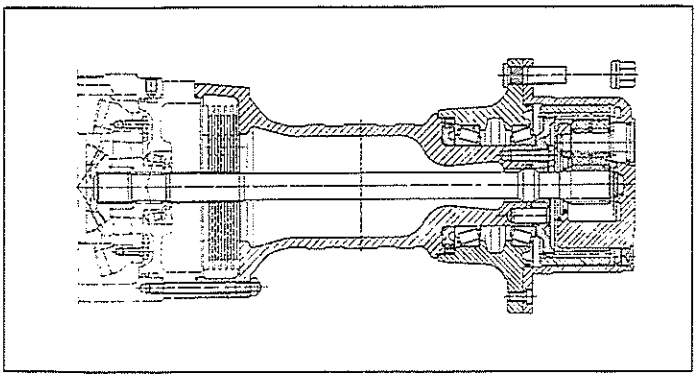
Refer to IV–41.

TROUBLESHOOTING

Refer to IV–42 ~ 43.

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SMONTAGGIO SUPP. PORTA SATELLITE
TOGLIERE TUTTI 3 I PERNI PRIMA DI ESTRARRE I SATELLITI DAL FORO CENTRALE DEL COPERCHIO.

AUSBAU DES PLANETENTRÄGERS
ALLE 3 BOLZEN ENTFERNEN, BEVOR DIE PLANETENRÄDER AUS DER ZENTRALEN DECKELSEITE.

DÉMONTAGE SUPPORT PORTE-SATELLITES
DÉPOSER LES 3 AXES AVANT D'EXTRAIRE LES SATELLITES PAR LE TROU CENTRE DU COUVERCLE.

DISASSEMBLING THE PLANET SUPPORT
REMOVE ALL 3 PINS BEFORE REMOVING THE PLANETS FROM THE CENTRAL HOLE OF THE COVER.

MONTAGGIO
FARE ATTENZIONE ALLA CENTRATURA DELLA RONDELLA DI RASAMENTO

EINBAU
BEACHTEN, DAß DIE PAßSCHEIBEN ZENTRAL MONTIERT WERDEN.

MONTAGE
FAIRE ATTENTION AU CENTRAGE DE LA RONDELLE D'AJUSTEMENT.

ASSEMBLY
TAKE CARE TO CENTER THE THRUST WASHER.

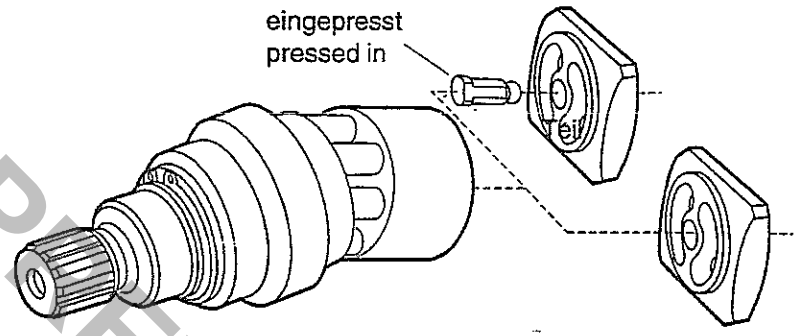
PER IL MONTAGGIO DEL SUPPORTO ESEGUIRE IN SENSO INVERSO.
CIANFRINARE DOPO IL MONTAGGIO DELL'ANELLO SEEGER COME INDICATO.

BEIM EINBAU DES PLANETENTRÄGERS IN UMGEKEHRT ER VORGEHEN REIHENFALGE.
NACH DER MONTAGE DEN SEEGERRING WIE GEZEIGT STEMMEN.

POUR LE MONTAGE DU SUPPORT, PROCÉDER EN SENS INVERSE.
CHANFREINER APRES LE MONTAGE DE L'ANNEAU SEEGER DE LA MANIERE INDIQUEE.

PROCEED IN REVERSE ORDER WHEN MOUNTING THE SUPPORT.
CHAMPFER AFTER HAVING MOUNTED THE CIRCLIP AS INDICATED.

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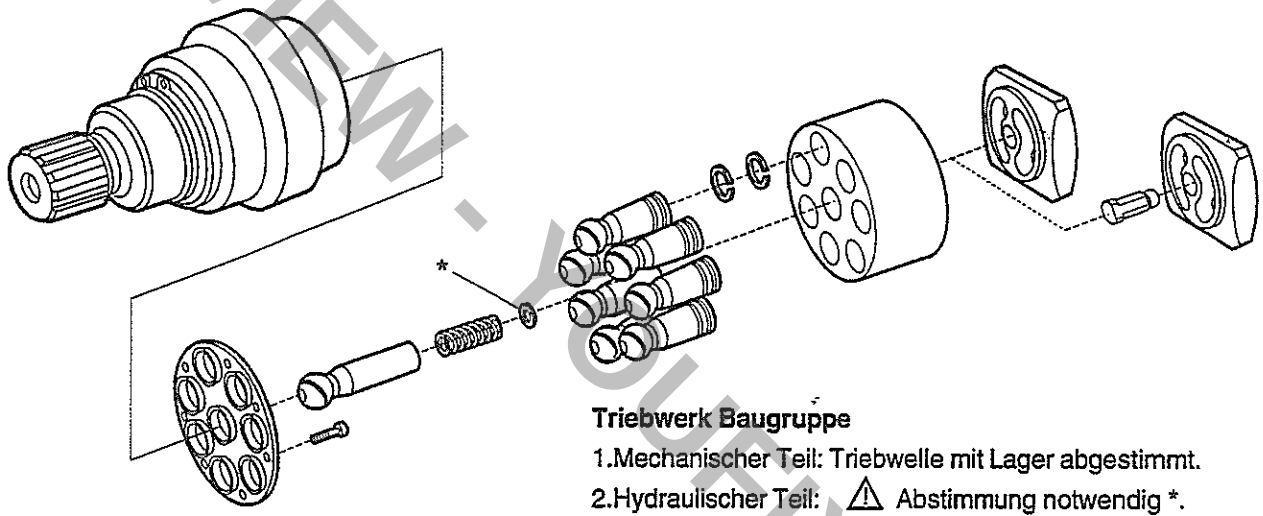


Triebwerk komplett

⚠ Abstimmung hydraulischer Teil notwendig.

Complete rotary group

⚠ Setting of hydraulic part necessary. 40



Triebwerk Baugruppe

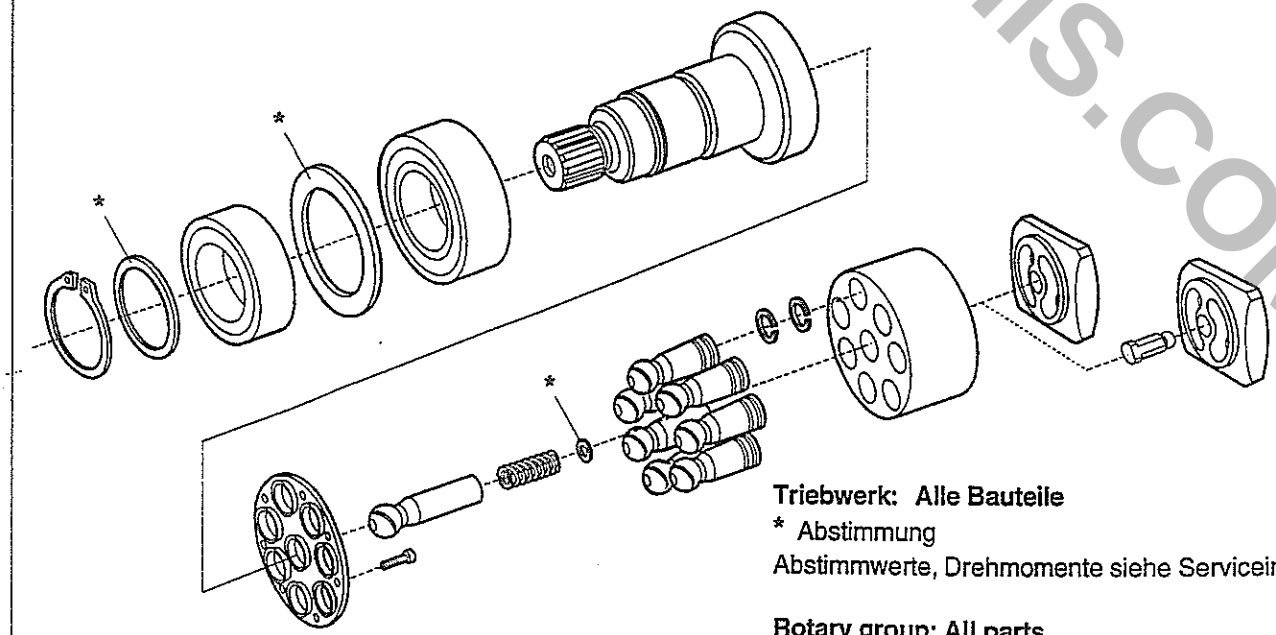
1.Mechanischer Teil: Triebwelle mit Lager abgestimmt.

2.Hydraulischer Teil: ⚠ Abstimmung notwendig *.

Rotary group

1. Mechanical part: Adjust drive shaft with bearing.

2. Hydraulic part: ⚠ Adjustment necessary 41



Triebwerk: Alle Bauteile

* Abstimmung

Abstimmwerte, Drehmomente siehe Serviceinfo.

Rotary group: All parts

* Setting

Setting value, torque see service information. 42

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Item		Engine model	BD3004
Cooling system	Cooling system		Forced circulation
	Cooling water capacity	ℓ (Imp qt)	6 (5-1/4) (Engine main body)
	Water pump	Type	Centrifugal
		Drive system	Belt-drive
	Thermostat	Type	Wax pellet type
		Valve opening temperature [°C (°F)] x Q'ty	71 (160) x 1
	Fan	O.D. mm (in)	430 (16.93) (Option available)
		No. of blades	6
Fuel system	Ignition system		Compression ignition
	Fuel injection timing	[B.T.D.C.]	16
	Injection sequence		1 - 3 - 4 - 2
	Injection pump	Type	Bosch A
		Plunger diameter mm (in)	8.5 (0.335)
		Cam lift mm (in)	8.0 (0.315)
		Timer type	Centrifugal type, fixed type (Option)
		Governor type	Mechanical, all speed (RSV)
	Injection nozzle	Type	Sealed, multi-port type
		Injection valve opening pressure kg/cm^2 (psi)	185 (2,631)
		No. of injection ports	4
	Fuel filter	Type	Filter paper type, cartridge type
		Overflow valve opening pressure kg/cm^2 (psi)	1.2 (17)
Electrical system	Starter	Type	Reduction, pinion shift type
		Output [V-kW]	STD.: 12-2.1, OPT.: 24-3.2, 24-3.5
	Alternator	Type	Alternating current type
		Output [V-A]	STD.: 12-35, OPT.: 24-25
		Drive system	Belt drive
	Regulator	Type	IC and transistorized (built in generator)
		Regulating voltage [V]	STD. 14, OPT. 28
	Air heater	Type	Ribbon type
		Voltage-current [V-A]	STD. 11-55, OPT. 22-55

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