MODEL	**330LX**
SERIES	**LX Series**
BOOK NO.	**1060**
SERIAL NO.	

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MACHINE SERIAL NUMBER

The machine serial number is stamped on the serial number plate which is located at the front of the machine on the right side of the operator's cab platform. The serial number should always be furnished when ordering parts for the machine or when corresponding with the distributor or factory concerning the machine. Providing the serial number is the only way of ensuring the correct parts and/or information can be furnished.

In the event the serial plate is not readable a number is stamped on the upper revolving frame which can be used to identify the machine. The number is stamped just below the boom and between the boom hoist cylinder mounting lugs.

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330LX Crawler Excavators
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June 2002

SAFETY

This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.

To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.

Place a “Do not operate“ tag on the starter switch key before carrying out any service or repair work on the machine.

.

WARNING: *Read the operator’s manual to familiarize yourself with the correct control functions.*

WARNING: *Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.*

WARNING: *This is a one man machine, no riders allowed.*

WARNING: *Before starting engine, study Operator’s Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.*
It is your responsibility to understand and follow manufacturers instructions on machine operation, service and to observe pertinent laws and regulations. Operator’s and Service Manuals may be obtained from your Link-Belt dealer.

WARNING: *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.*

WARNING: *When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.*

WARNING: *When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.*

WARNING: *When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.*

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Torque Table

Tighten cap screws and nuts according to the table below if there are no other special instructions.

Cap Screw Name Size (Size)			M6	M8	M10	M12	M14	M16	M18	M20
Cap Screw	Spanner	[in.]	0.39	0.51	0.67	0.75	0.87	0.95	1.06	1.18
		[mm]	10	13	17	19	22	24	27	30
	Tightening torque	[lb-ft]	5.1	14.5	29.0	43.4	72.5	116.0	144.6	202.4
		[Nm]	6.9	19.6	39.2	58.8	98.1	157.2	196.0	274.0
Socket Head Cap Screw	Spanner	[in.]	0.20	0.24	0.32	0.39	0.47	0.55	0.55	0.67
		[mm]	5	6	8	10	12	14	14	17
	Tightening torque	[lb-ft]	6.5	15.9	31.1	57.8	86.8	130.1	180.8	253.1
		[Nm]	8.8	21.6	42.1	78.4	117.6	176.4	245.0	343.0

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SPECIFICATIONS

Engine

Make ..... Isuzu
Model 6HK1XQB

Type: Four stroke, water cooled with overhead valves, direct injection in-line cylinder (electronic control) with turbo-charger.
Number of cylinders 6
Bore and stroke ..... 4.52 x 4.92 inches
Displacement ..... 475 cu in

Operating conditions
Idle ..... 900 rpm
Max speed ..... 2000 rpm
SAE net horse power ..... 246.6 HP
Max torque ..... 710 lb-ft at 1600 rpm

Capacities

Engine oil capacity ..... 8.7 gallons
Engine cooling circuit ..... 11 gallons
Capacity of only the radiator ..... 5.5 gallons
Fuel reservoir ..... 153 gallons
Hydraulic fluid reservoir capacity ..... 46.2 gallons
Total hydraulic circuit capacity ..... 92.4 gallons
Capacity of only the oil-cooler ..... 4.3 gallons
Travel reduction gear housing capacity ..... 2.9 gallons
Swing drive housing capacity ..... 1.5 gallons
Idler pulley capacity ..... 15.25 cu in
Upper roller capacity ..... 14.95 to 15.25 cu in
Lower roller capacity ..... 17.08 cu in

NOTE: *These capacities are given only for information purposes. To check the fluid levels, always use the oil gauge, visual gauges or the filler cap.*

Electrical system

Type of system ..... 24 volts earth negative
Alternator amperage ..... 50 amperes
Battery
- Number of batteries required 2
- Voltage of each battery ..... 12 volts
- Capacity ..... 140 Ah
- Reserve ..... 160 min
- Cold startability at -1.4°F ..... 800 A
- Load for load control ..... 400 A

Starter
- Voltage ..... 24 volts
- Power ..... 5 kW

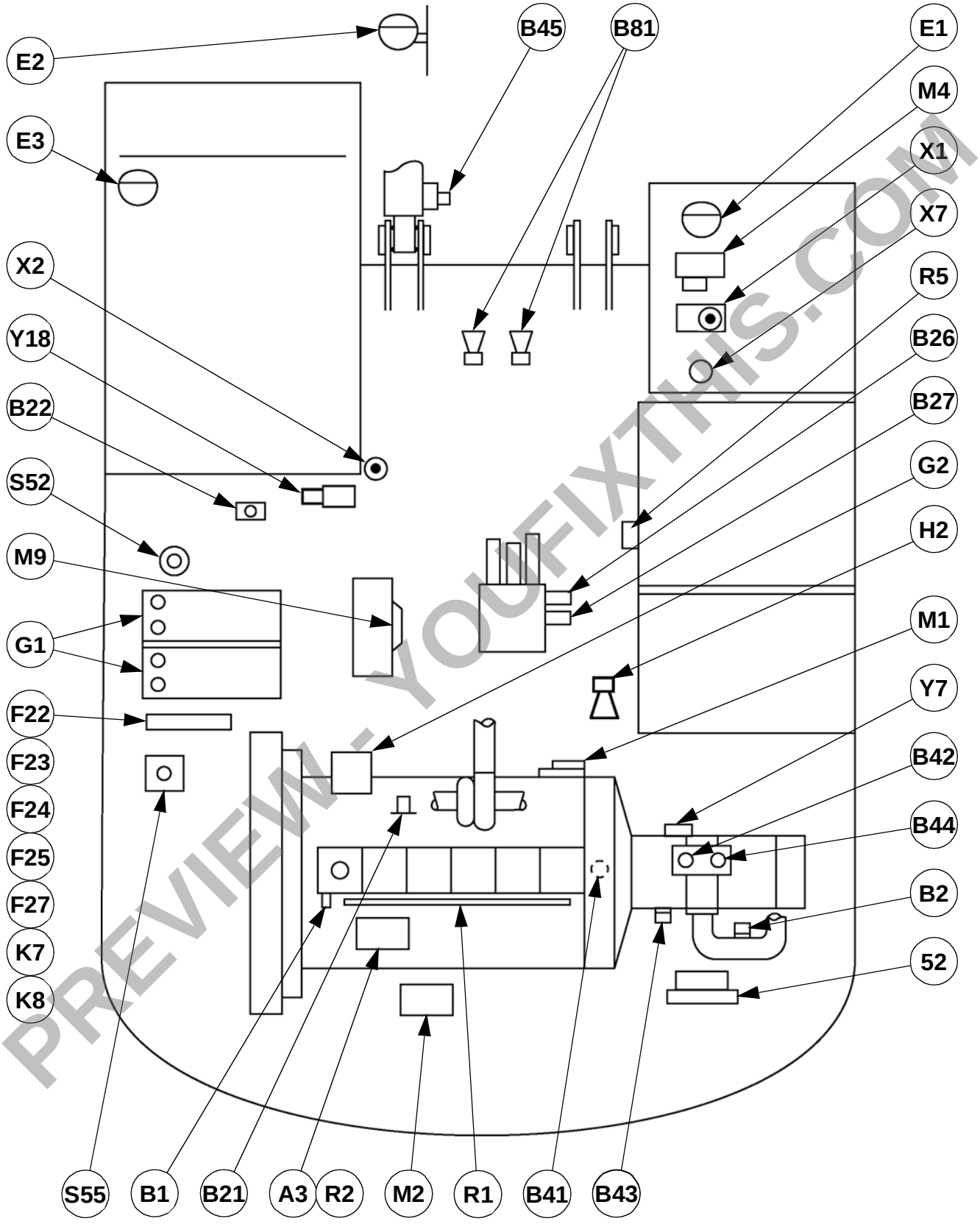
Voltage regulator ..... built-in, without adjustment

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NOTES

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General location of the components (outside the cab)

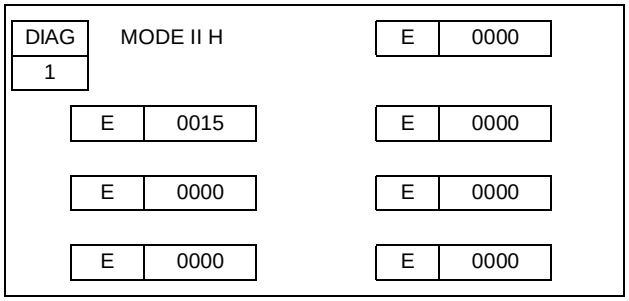


CS02G500

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Diagnostic code

1. Detection of engine failures DIAG1



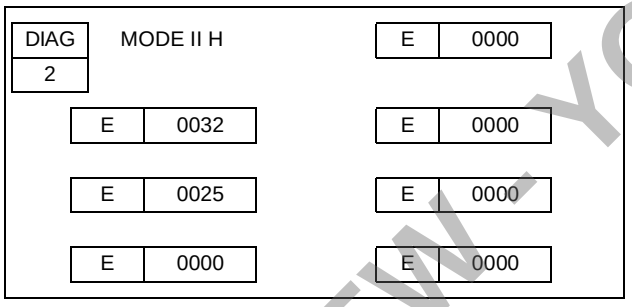
E: Failure code

Failure code

E0000: No defect
E0015: Coolant temperature sensor
E0025: Fuel flow adjustment resistor
E0031: Linear motor control circuit in electronic regulator
E0032: Electronic regulator rack position detector
E0041: Electronic regulator engine rpm receiver
E0042: Engine rpm sensor

Example: In the screen above, there is a defect in the coolant temperature sensor.

2. Previous failures in the engine DIAG2



E: Failure code

Example: The screen above shows that there is a defect in the electronic regulator rack position detector (0032) and in the fuel flow adjustment resistor (0025).

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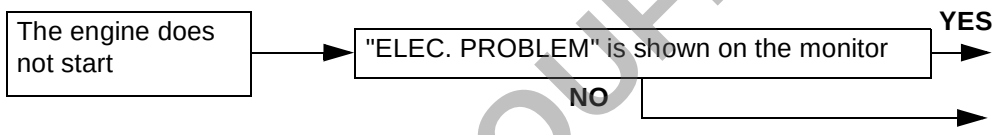
Procedures

1. This is how one has to proceed to detect defects when the message is still displayed after all necessary measures have been taken to correct the error.

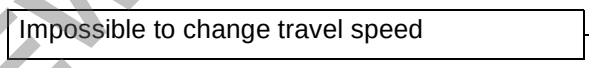
Message displayed	Description of the problem	Problem No.
LOW FUEL	The message is still displayed even after refilling the fuel tank.	1
LOW COOLANT	The message is still displayed even after refilling with coolant solution.	2
LOW OIL PRESS	The message is still displayed even after adjusting the engine oil pressure.	3
OVER HEAT	The message is still displayed even when the hydraulic oil temperature is 183°F or less and the engine coolant temperature is 197°F or less.	4
ALTERNATOR	The message is still displayed.	5
ELEC. PROBLEM	The message is still displayed.	6

2. This is how one has to proceed if the problem is not indicated by a message but machine operation is not correct.

A. Engine

Description of the problem	Problem No.
	6 7

3. Problem without message.

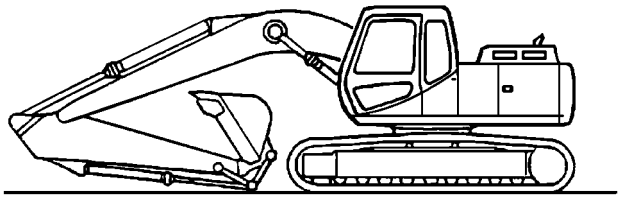
Description of the problem	Problem No.
	8

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ENGINE

Removal and installation

STEP 1



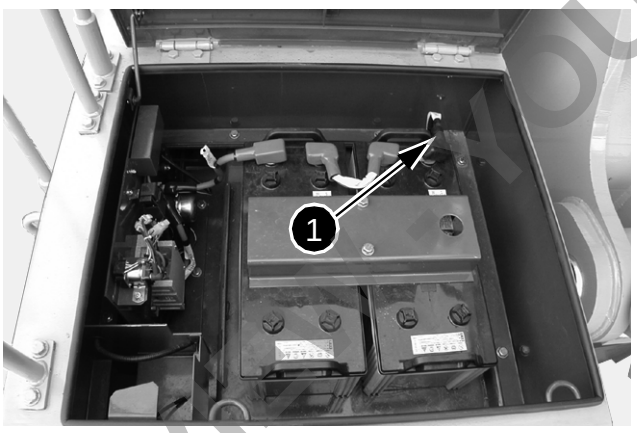
JS00163A

Park the machine on hard, flat ground. Lower the attachment to the ground.

STEP 2

Release pressure in the hydraulic system and in the hydraulic reservoir (see Section 8000).

STEP 3



CD01C162

Disconnect the battery ground (-) cable (1) from the battery.

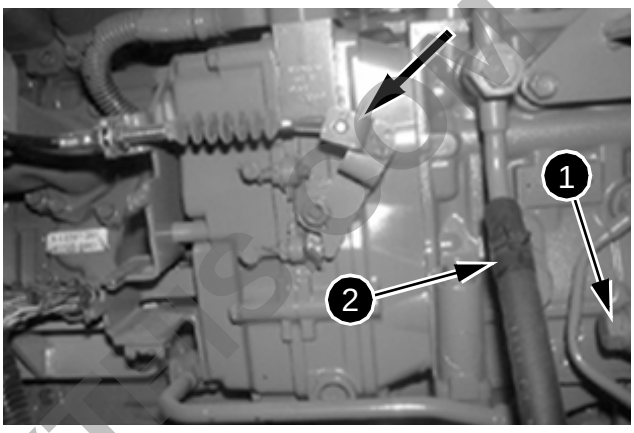
STEP 4

Refer to Section 8003 and remove the hydraulic pump.

STEP 5

Refer to Section 2001 and remove the radiator and oil-cooler assembly.

STEP 6

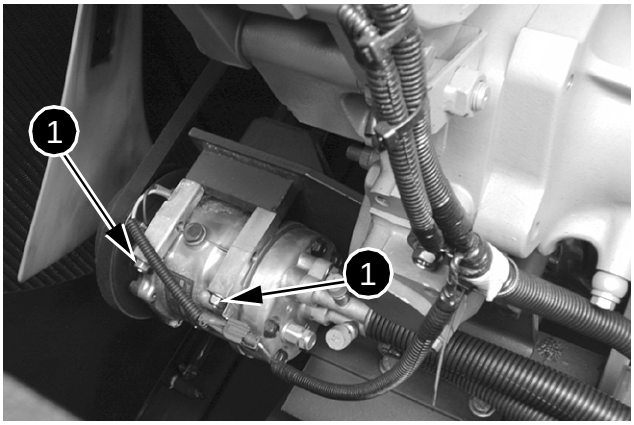


CD02C151

Remove the engine shutdown control (arrow).

Disconnect the fuel supply pipe (1) and the fuel return pipe (2) and plug them.

STEP 7

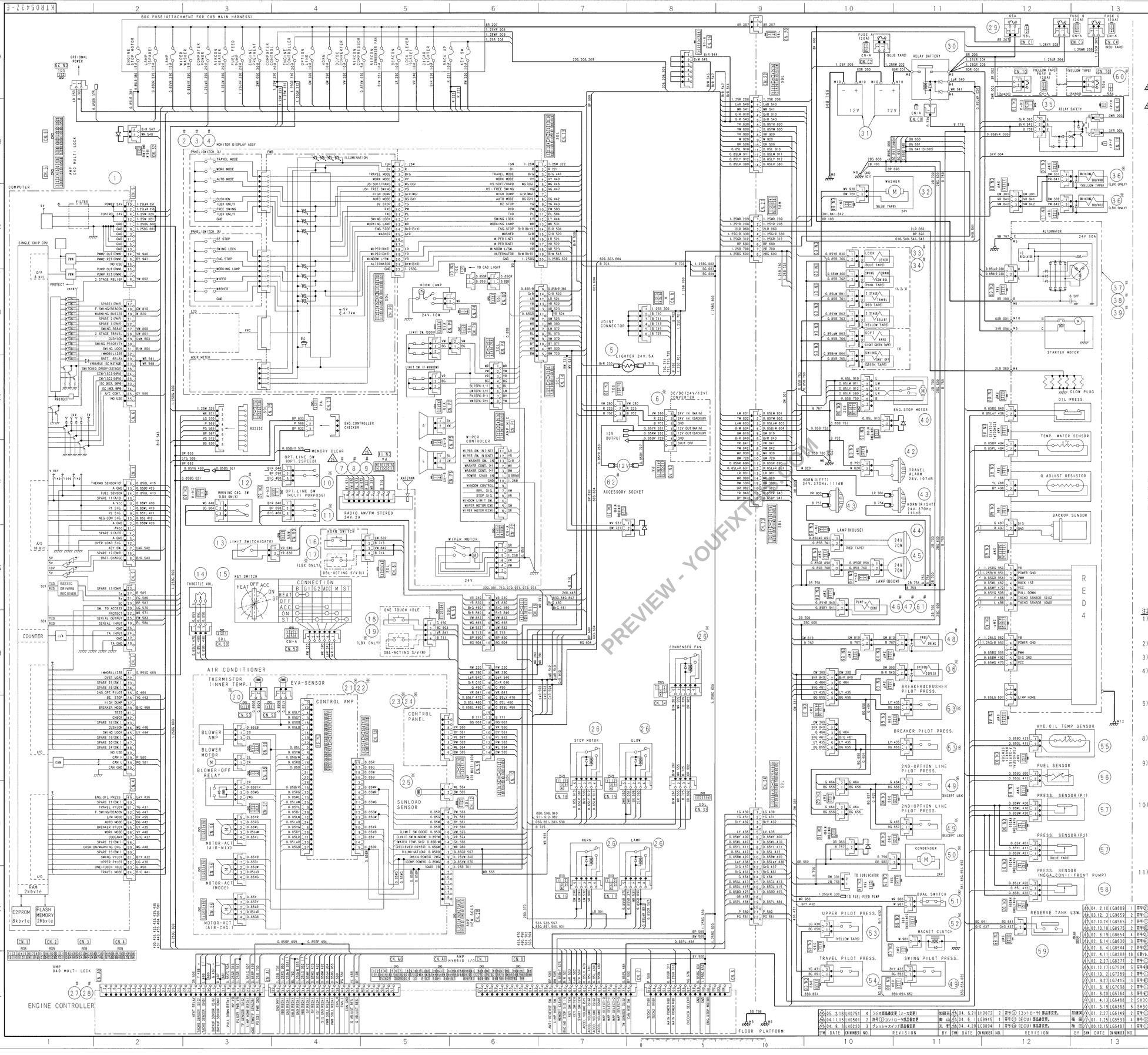


CD01D131

Remove the screws (1) from the compressor and put it away from the engine.

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KTR05432-E



PART NO.	DESCRIPTION	SYM	MATERIAL GROUP	QTY	TOTAL WT. (kg)	STANDARD NO.	REMARKS
	CONT-SP						NIPPON SEIKI
	ｺﾝﾄﾛｰﾗ-ｽﾍﾟｱ						日精機
# KHR26799-B	MONITOR		1		1	-	NIPPON SEIKI
	ﾓﾆﾀｰ ｱｯｾﾝﾌﾞﾘ(無線)ASSY						日精機
# KHR38255-B	MONITOR	S	(2)		1	-	NIPPON SEIKI
	ﾓﾆﾀｰ ｱｯｾﾝﾌﾞﾘ(EXP)ASSY						日精機
# KHR38257-B	MONITOR		4	(3)	1	-	NIPPON SEIKI
	ﾓﾆﾀｰ ｱｯｾﾝﾌﾞﾘ(NA)ASSY						日精機
KHR24884-A	LIGHTER-CIGAR		5		1	-	MITSUBA JIDOUSYA
	ﾗｲﾀｰ(ｶｰ)						自動車機器(株)
	CONVERTER(DC-DC						SANKO DENKI
※ KHR22447X-B	ｺﾝﾊﾞｰﾀｰ(DC-DC		6	OPT(1, 2, 3)	1	-	三興電機
⚠ ##########	RADIO SET ﾗｼﾞｵｾｯﾄ AM/FM 2ch(E)		7	(1)	1	-	ESPERIA SANYO-DENKI
⚠ KHR38241-A	ﾗｼﾞｵｾｯﾄ AM/FM 2ch(E)(12/24V)						エスペリア 三洋電機
	RADIO SET		8	OPT LESS(2)	1	-	ESPERIA
# KHR33271X-A	ﾗｼﾞｵｾｯﾄ AM/FM 2ch			(2)			エスペリア
⚠ ##########	RADIO SET ﾗｼﾞｵｾｯﾄ AM/FM 2ch(E)		9	(3)	1	-	ESPERIA SANYO-DENKI
⚠ KHR39455-A	ﾗｼﾞｵｾｯﾄ AM/FM 2ch(E)(12/24V)						エスペリア 三洋電機
	SWITCH-SPL		10	OPT(1, 2, 3)	1	-	YUSHIN
※ KHR31299-B	ｽｲｯﾁ-ｽﾌﾟﾘﾙ(無線)						ユーシン
	SWITCH-SPL		11	OPT(1, 2, 3)	1	-	YUSHIN
※ KHR29488-B	ｽｲｯﾁ-ｽﾌﾟﾘﾙ 無線ライン						ユーシン
	SWITCH-SPL		12	(3)	1	KHR25199X-B	YUSHIN
# KHR3136	ｽｲｯﾁ-ｽﾌﾟﾘﾙ(無線)						ユーシン
	SWITCH-LIMIT		13		1	-	NILES PARTS
KHR18735-A	ｽｲｯﾁ-ﾘﾐｯﾄ						ﾆﾚｽ部品
	SWITCH-SPL		14		1	-	TAKAOKA JUSHI
KHR27515-B	ｽｲｯﾁ-ｽﾌﾟﾘﾙ						高岡樹脂(工業)(有)
	SWITCH-STARTER			(3)		KHR23270X-B	MITSUBO JIDOUSYA
KHR31078	ｽｲｯﾁ-ｽﾀｰﾀ		15	(1, 2)	1	KHR30737X-A	自動車機器(株)
	KNOB						NISHIYAMA
KHJ1556X-B	ﾉﾌﾞ(E)		16		1	-	ニシヤマ
	KNOB						NISHIYAMA
※ KHJ1953	ﾉﾌﾞ(E) ｽﾍﾟｼｬﾙ		17	OPT(3)	1	KHJ17454-B	ニシヤマ
	KNOB						NISHIYAMA
KHJ1557X-B	ﾉﾌﾞ(E)		18		1	-	ニシヤマ
	KNOB						NISHIYAMA
KHJ1954X-B	ﾉﾌﾞ(E) ｽﾍﾟｼｬﾙ		19	OPT(3)	1	-	ニシヤマ
	SENSOR-SPL			OPT(1, 3)			SANDEN
※ KHR2762	ｾﾝｻｰ 無線		20	STD(1)	1	KHR3573X-A	サンデン
	UNIT			OPT(1, 3)			SANDEN
KHR4135	ﾕﾆｯﾄ ｱﾅﾛｸﾞ		21	STD(2)	1	KHR4132X-A	サンデン
	UNIT			OPT(1)			SANDEN
KHR4136	ﾕﾆｯﾄ ﾄｰﾀﾙ		22	STD(3)	1	KHR4133X-A	サンデン
	PANEL-CONTROL			OPT(2, 3)			SANDEN
KHR2758	ﾊﾟﾈﾙ-ｺﾝﾄﾛｰﾙ		23	STD(1)	1	KHR3573X-A	サンデン
	PANEL-CONTROL			OPT(2)			SANDEN
KHR3132	ﾊﾟﾈﾙ-ｺﾝﾄﾛｰﾙ		24	STD(3)	1	KHR3131X-A	サンデン
	SENSOR-SPL			OPT(3)		KHR3327X-A	SANDEN
※ KHR2777	ｾﾝｻｰ 無線		25	STD(1), OPT(1)	1	KHR2798X-A	サンデン
	RELAY-SPL			SEE NOTES 5)			MITSUBO JIDOUSYA
KHR1239E-B	ﾘﾚｰ-ｽﾌﾟﾘﾙ-ﾏｲｸﾛ		26	(4)	-	-	自動車機器(株)
	CONT-SPL ENGINE			SH300(3)		KSH0111C-C	ISUZU
# KSH10010	ｺﾝﾄﾛｰﾗ-ｽﾌﾟﾘﾙ ｴﾝｼﾞﾝ		27	SH300(1, 2)	1	KSH0101X-C	ｲｽｽﾞ
	CONT-SPL ENGINE						ISUZU
# KTH10010	ｺﾝﾄﾛｰﾗ-ｽﾌﾟﾘﾙ ｴﾝｼﾞﾝ		28	SH400(1, 2)	1	KTH0671X-C	ｲｽｽﾞ
	FUSE						MITSUBO JIDOUSYA
KHR1592	ﾋｭｰｽﾞ(ﾋｭｰｽﾞﾎﾙﾀﾞｰ)		29		1	KHR1589E-A	自動車機器(株)
	RELAY-BATTERY						TOKAI SHOUKAI
KHR17411E-A	ﾘﾚｰ-ﾊﾞｯﾃﾘｰ		30		1	-	東海商会
	BATTERY						YUASA CORP.
# KSR0290Y-A	ﾊﾞｯﾃﾘｰ 新神		31		2	-	ユアサ コーポレーション
	TANK-WASHER						PRESS KOUGYOU
KHN1639X-A	ﾀﾝｸ-ｳｫｯｼｬ		32		1	-	プレス工業(株)
	VALVE-SOLENOID						UCHIDA
# KRJ6304X-B	ﾊﾞﾙﾌﾞ-ｿﾚﾉｲﾄﾞ(4連)		33	(1, 2)	1	-	内田油圧
	VALVE-SOLENOID						UCHIDA
# KHJ1972X-B	ﾊﾞﾙﾌﾞ-ｿﾚﾉｲﾄﾞ(6連)		34	(3)	1	-	内田油圧
	RELAY-STARTER					KSH0888X-C	ISUZU
KSH0936	ﾘﾚｰ-ｽﾀｰﾄ		35		1	KTH0842X-C	ｲｽｽﾞ
	VALVE-SOLENOID				3		NISHINA
※ KRJ3557U-A	ﾊﾞﾙﾌﾞ-ｿﾚﾉｲﾄﾞ		36	OPT(1, 2)	1	-	ニシナ
	ENGINE-DIESEL						ISUZU
# KSH1012	ｴﾝｼﾞﾝ-ﾃﾞｨｰｾﾞﾙ(4連)		37	SH300(1, 2)	1	KSH0101X-C	ｲｽｽﾞ
	ENGINE-DIESEL						ISUZU
# KSH1013	ｴﾝｼﾞﾝ-ﾃﾞｨｰｾﾞﾙ(6連)		38	SH300(3)	1	KSH0111X-C	ｲｽｽﾞ
	ENGINE-DIESEL						ISUZU
# KTH0668	ｴﾝｼﾞﾝ-ﾃﾞｨｰｾﾞﾙ(4連)		39	SH400(1, 2)	1	KTH3665X-C	ｲｽｽﾞ
	MOTOR-STOP					KSH0888X-C	ISUZU
KTH0537	ﾓｰﾀｰ-ｽﾄｯﾌﾟ		40		1	KTH0842X-C	ｲｽｽﾞ
	MISSING NUMBER						
	ﾏｲｼﾝｸﾞﾅﾝﾊﾞｰ		41				
	ALARM-SPL						MIZUHO JIDOUSYA
KHR2852X-B	ｱﾗｰﾑ-ｽﾌﾟﾘﾙ		42		1	-	自動車機器(株)
	HORN				2		MITSUBO JIDOUSYA
KHR24271X-B	ﾎｰﾝ 電気 (LOW)		43			-	自動車機器(株)
	LAMP-WORKING						SUZUKI YOURIN
KHR24745X-B	ﾗﾝﾌﾟ-ﾜｰｷﾝｸﾞ 24V X 70W		44		1	-	鈴木容器(株)
	LAMP-WORKING						SPK
KHR20957E-A	ﾗﾝﾌﾟ-ﾜｰｷﾝｸﾞ		45		1	-	SPK (ｲﾄｲｴｰﾑ)
	PUMP-HYD.			SH300			UCHIDA
# KSJ2660X-B	ﾎﾟﾝﾌﾟ-油圧		46	(1, 2, 3)	1	-	内田
	PUMP-HYD.						KAWASAKI
# KTJ2030X-B	ﾎﾟﾝﾌﾟ-油圧		47	SH400(1, 2)	1	-	川崎重工
	VALVE-SOLENOID						NISHINA
# KHJ0655U-A	ﾊﾞﾙﾌﾞ-ｿﾚﾉｲﾄﾞ		48	(3)	1	-	ニシナ
	SWITCH-PRESS.			OPT(1, 2)			NAGANO KEIKI
KHR10790-B	ｽｲｯﾁ-ﾌﾟﾚｯｼｬ (0.43MPa)		49	STD	1	-	長野計器
	CONDENSER			OPT(1, 3)			SANDEN
KHR29889-A	ｺﾝﾃﾞﾝｻ-ｴｱｺﾝ		50	STD(1)	1	-	サンデン
	RECIEVER-DRIER						SANDEN
KHR2594	ﾚｼｰﾊﾞ-ﾄﾞﾗｲﾔ		51		1	KHR2554X-A	サンデン
	COMPRESSOR					KHR3098X-A	SANDEN
KHR3197	ｺﾝﾌﾟﾚｯｻ-ｴｱｺﾝ		52	STD(1)OPT(2, 3)		KHR2384X-A	サンデン
	SWITCH-PRESS			OPT			NAGANO KEIKI
KHR10800	ｽｲｯﾁ-ﾌﾟﾚｯｼｬ (1.18MPa)		53	STD	1	KHR10790-B	長野計器
	SWITCH-PRESS						NAGANO KEIKI
KHR10810	ｽｲｯﾁ-ﾌﾟﾚｯｼｬ (1.96MPa)		54		1	KHR10790-B	長野計器
	SENSOR-THERMO						SHIME ISUZU
KHR2433Y-B	ｾﾝｻｰ-ｻｰﾓ		55		1	-	志満ｲｽｽﾞ (ｱﾌﾀｰ)
	SENSOR-FUEL						NIPPON SEIKI
KHR1935X-B	ｾﾝｻｰ-ﾌｭｰｴﾙ		56		1	-	日精機
	SENSOR-PRESS						NAGANO KEIKI
KHR29414X-B	ｾﾝｻｰ-ﾌﾟﾚｯｼｬ (5MPa)		57		2	-	長野計器
	SENSOR-PRESS						NAGANO KEIKI
KHR29415X-B	ｾﾝｻｰ-ﾌﾟﾚｯｼｬ (3MPa)		58		1	-	長野計器
	SWITCH-LEVEL						SHIME ISUZU
KHH0221	ｽｲｯﾁ-ﾚﾍﾞﾙ		59		1	KHH0278Y-A	志満ｲｽｽﾞ (ｱﾌﾀｰ)
	FUSE	S	SH300				YAZAKI
# KHR38590X-A	ﾋｭｰｽﾞ A3型		60	(1, 2, 3)	1	-	矢崎総業
	PUMP-HYD.		SH300				KAWASAKI
# KSJ2851X-B	ﾎﾟﾝﾌﾟ-油圧		61	(1, 2, 3)	1	-	川崎重工
	SOCKET		SH300				IGUCHI RIKA
# KHR25031X-A	ｿｹｯﾄ ｱｸｾｻﾘｰ(DC12V)		62	(3)	1	-	井口理化

注記/NOTES

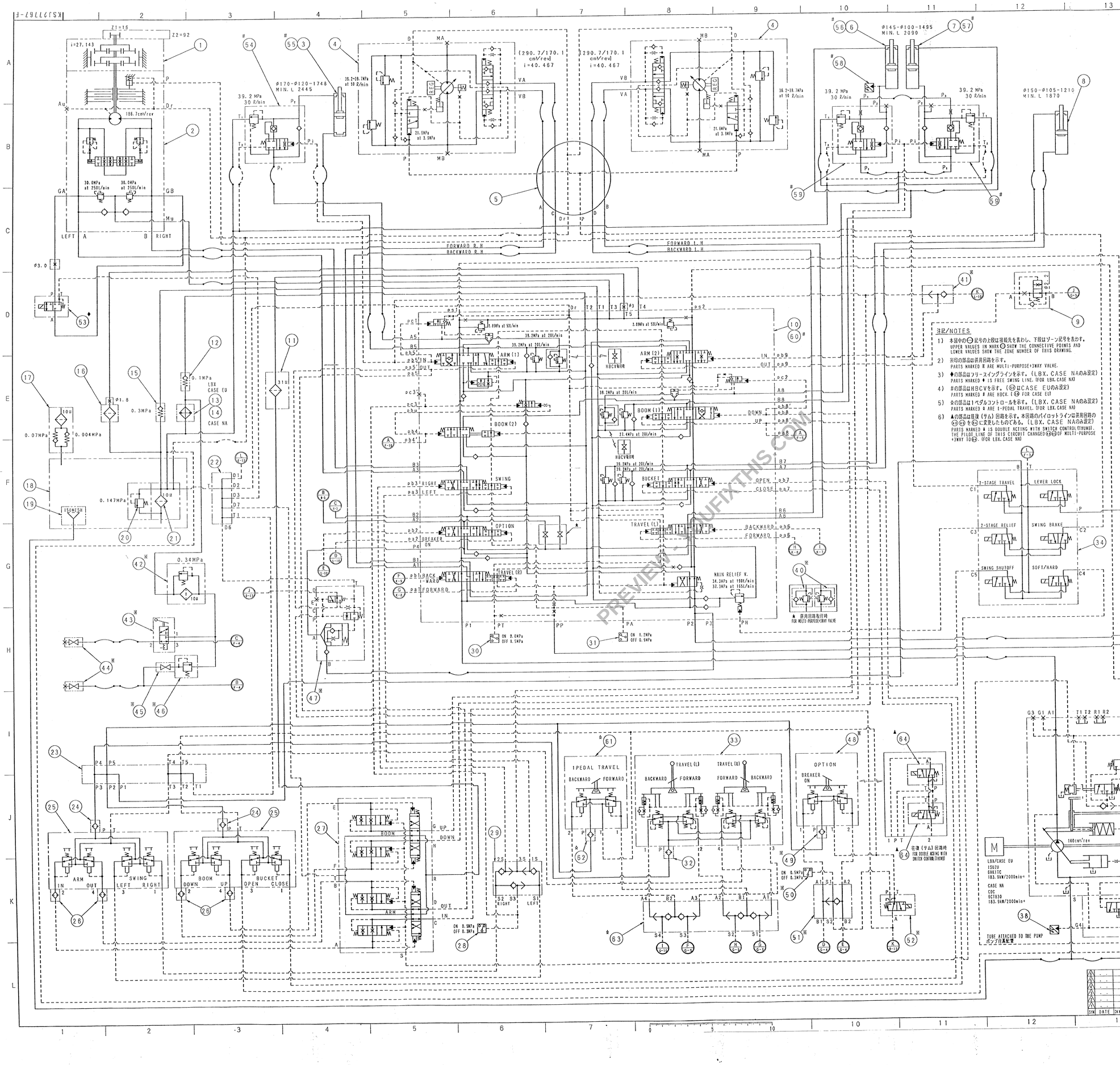
1) 本回路図は、SH300-3、SH300LC-3、SH350HD-3、SH400-3、SH450HD-3（国内、一般輸出）SH300-3LBXに対応する。
THIS CIRCUIT IS WRITTEN FOR SH300-3, SH300LC-3, SH350HD-3, SH400-3, SH450HD-3 (DOMESTIC-GENERAL EXPORT) AND SH300-3LBX.

2) ※は、オプション部品を示す
※ IS OPTIONAL PART.

3) #は、機種又は仕向地によって適用される部品を示す。
IS APPLICABLE PART ACCORDING TO MODEL OR TERRITORY.

4) 括弧内の数値は適用される仕向地を示す（下記参照）。
THE NUMBER IN ( ) MEANS APPLICABLE TERRITORY(SEE FOLLOWS).
(1)：国内/DOMESTIC
(2)：一般輸出/GENERAL EXPORT
(3)：LBX

5) 符号 Ⓚ の使用個数は下記の通りである。
THE NUMBER OF USE OF MARK Ⓚ IS SHOWN AS FOLLOWS.
国内/DOMESTIC ‥‥‥



注記/NOTES

1) 本図中の㊀記号の上段は矩形先を表わし、下段はゾーン記号を表わす。
UPPER VALUES IN MARK ㊀ SHOW THE CONNECTIVE POINTS AND LOWER VALUES SHOW THE ZONE NUMBER OF THIS DRAWING.

2) ※印の部品は兼用回路を示す。
PARTS MARKED ※ ARE MULTI-PURPOSE+3WAY VALVE.

3) ♦の部品はフリースイングラインを示す。(LBX, CASE NAのみ設定)
PARTS MARKED ♦ IS FREE SWING LINE. (FOR LBX, CASE NA)

4) #の部品はHBCVを示す。(㊸はCASE EUのみ設定)
PARTS MARKED # ARE HBCV. (㊸ FOR CASE EU)

5) ☆の部品はトベダルコントロールを示す。(LBX, CASE NAのみ設定)
PARTS MARKED ☆ ARE T-PEDAL TRAVEL. (FOR LBX, CASE NA)

6) ▲の部品は住友(サム)回路を示す。本回路のパイロットラインは兼用回路の㊵㊶を㊱に変更したものである。(LBX, CASE NAのみ設定)
PARTS MARKED ▲ IS DOUBLE ACTING WITH SWITCH CONTROL(THUMB). THE PILOT LINE OF THIS CIRCUIT CHANGED ㊵㊶ OF MULTI-PURPOSE +3WAY TO ㊱. (FOR LBX, CASE NA)

PART NO.	DESCRIPTION	SYM	MATERIAL GROUP	QTY	TOTAL WT.(kg)	STANDARD NO.	REMARKS
KSC02272-C	ASSY,GEAR:SWING ASSY 旋回減速装置	1		1			ASANO 浅野
KSC0233X-B	MOTOR:SWING 走行モータ	2		1			TOSHIBA 東芝
KSV1395X-B	CYL.,ARM シリンダ-ブーム(標準)	3		1			KAYABA カヤバ
KSA1101X-A	MOTOR:TRACTION UNIT 走行モータ装置	4		2			NABCO ナブコ
KSA1136Z-D	JOINT:CENTER ジョイント センタ 用	5		1			KAYABA カヤバ
KSV1394X-B	CYL.,BOOM(1) シリンダ-ブーム(標準,5t)	6		1			KAYABA カヤバ
KSV1393X-B	CYL.,BOOM(2) シリンダ-ブーム(標準,5t)	7		1			KAYABA カヤバ
KSV1392X-B	CYL.,BUCKET シリンダ-バケット(標準)	8		1			KAYABA カヤバ
KHJ2354X-A	VALVE:CUSHION バルブ-クッション(P2,2)	9		1			NISHINA CHIBA
KSJ2756X-B	VALVE:CONTROL バルブ-コントロール	10		1			KAYABA カヤバ
KHJ0568U-A	FITTER:LINE フィルタ-ライン	11		1			YAMASHIN 山信工業
KSJ230C	VALVE:CHECK バルブ-チェック	12		1		KRJ3515Y-A	YAMASHIN 山信工業
KSH0893X-B	RADIATOR ラジエタ	13		1			TOYO RADIATOR 東洋ラジエーター
KSH0953X-B	RADIATOR ラジエタ	14		1			TOYO RADIATOR 東洋ラジエーター
KRJ3515Y-A	VALVE:CHECK バルブ-チェック	15		1			YAMASHIN 山信工業
KHJ0738Y-A	FILTER:SPL フィルタ-スプリ	16		1			SUMIMOTO 住友精機
KHJ1781X-A	RECEIVER-AIR アキュームレータ	17		1			YAMASHIN 山信工業
KSJ2668X-E	TANK:SUMP タンク-サンプ	18		1			
KSJ2675X-A	STRAINER フィルタ-ストレーナ	19		1			YAMASHIN 山信工業
KSJ2763X-A	VALVE:RELIEF バルブ-リリーフ	20		1			NIPPON ROKAKI 日本精機
KSJ2759X-A	FILTER:RETURN フィルタ-リターン	21		1			NIPPON ROKAKI 日本精機
KNJ2574X-C	MANIFOLD マニホールド	22		1			
KRJ5803X-B	MANIFOLD マニホールド	23		1			
KHJ0915X-A	ADAPTER:HOSE アダプタ-ホース-2 (7/8-8P)	24		2			FUJI KOATSU 富士高圧
KRJ5804X-B	VALVE:REMOTE CONT バルブ-リモコン(標準)	25		2			KAWASAKI 川崎重工
KHJ1402X-B	ADAPTER:HOSE アダプタ-ホース-2 (7/8-8P)	26		4			FUJI KOATSU 富士高圧
KSJ2765X-B	VALVE:CUSHION バルブ-クッション(SP-1, t=1時間)	27		1			HIROSE 廣瀬製作所
KHR1012Y-A	SWITCH:PRESS. スイッチ-プレッシャ	28		1			TEXAS B&Bテキサスインツルメント
KHJ1973X-B	VALVE:SHUTTLE バルブ-シャトル	29		1			HIROSE 廣瀬製作所
KHR1568E-A	SWITCH:PRESS. スイッチ-プレッシャ	30		1			TEXAS B&Bテキサスインツルメント
KHR1493E-A	SWITCH:PRESS. スイッチ-プレッシャ	31		1			TEXAS B&Bテキサスインツルメント
CNA0584Y-A	NIPPLE ニップル(7/8-8P)	32		1			FUJI KOATSU 富士高圧
KNJ2557X-B	VALVE:REMOTE CONT バルブ-リモコン(標準)	33		1			NISHINA CHIBA
KHJ1972X-B	VALVE:SOLENOID バルブ-ソレノイド(5P)	34		1			UCHIDA 内田油工
KHJ0335U-A	ACCUMULATOR アキュムレータ	35		1			NOK 日本オイルシール
KHJ1583X-B	MANIFOLD マニホールド-8P(7/8-2P)	36		1			YAMASHIN 山信工業
KHR2915X-B	SENSOR:PRESS. センサ-プレッシャ(5MPa)	37		1			NAGANO KEIKI 長野計器
KHR2914X-B	SENSOR:PRESS. センサ-プレッシャ(15MPa)	38		1			NAGANO KEIKI 長野計器
KSJ2650X-B	PUMP:HYD ポンプ-油圧	39		2			UCHIDA 内田油工
※ KHP0401U-A	VALVE:PORT RELIEF バルブ-ポート-リリーフ	40		1			KAYABA カヤバ
※ KHJ0573U-A	VALVE:SHUTTLE バルブ-シャトル	41		1			HIROSE 廣瀬製作所
※ KRJ3545U-A	FITTER:LINE フィルタ-ライン	42		1			TAISEI 太正精機
※ KSJ2755X-A	VALVE:SPL バルブ-スプリ	43		1			KOGYO 興業製作所
※ KHV0389X-A	VALVE:STOP バルブ-ストップ	44		2			KAYABA カヤバ
※ KSJ2256X-A	VALVE:STOP バルブ-ストップ	45		1			KAYABA カヤバ
※ KSJ2292X-A	VALVE:RELIEF バルブ-リリーフ	46		1			NISHINA CHIBA
※ KHJ1340X-B	VALVE:HOLDING バルブ-ホールディング	47		1			KAWASAKI 川崎重工
※ KRJ5864X-B	VALVE:REMOTE CONT バルブ-リモコン	48		1			FUJI KOATSU 富士高圧
※ KHJ0934X-B	ADAPTER:HOSE アダプタ-ホース-2 (7/8-8P)	49		1			TEXAS B&Bテキサスインツルメント
※ KHR1012Y-A	SWITCH:PRESS. スイッチ-プレッシャ	50		1			HIROSE 廣瀬製作所
※ KHJ1655X-B	VALVE:SHUTTLE バルブ-シャトル	51		1			NISHINA CHIBA
※ KRJ3557U-A	VALVE:SOLENOID バルブ-ソレノイド	52		1			NISHINA CHIBA
♦ KHJ0655U-A	VAL.S:SOLE4Ov バルブ-ソレノイド	53		1			NISHINA CHIBA
# KSV1458X-A	VALVE:SPL (ASM HBCV) バルブ-補助 (2-HBCV)	54		1			KAYABA カヤバ
# KSV1456X-B	CYL.,ASM シリンダ-ブーム (HBCV)	55		1			KAYABA カヤバ
# KSV1455X-B	CYL.,BOOM(L) シリンダ-ブーム-L (HBCV)	56		1			KAYABA カヤバ
# KSV1454X-B	CYL.,BOOM(R) シリンダ-ブーム-R (HBCV)	57		1			NAGANO KEIKI 長野計器
# KHR2914X-B	SENSOR:PRESS. センサ-プレッシャ(15MPa)	58		1			NISHINA CHIBA
# KSV1457X-A	VALVE:SPL (BOOM HBCV) バルブ-補助 (2-HBCV)	59		2			KAYABA カヤバ
# KSJ2810X-B	VALVE:CONTROL バルブ-コントロール (HBCV)	60		1			KAWASAKI 川崎重工
☆ KRJ5854X-B	VALVE:REMOTE CONT バルブ-リモコン	61		1			FUJI KOATSU 富士高圧
☆ KHJ0934X-B	ADAPTER:HOSE アダプタ-ホース-2 (7/8-8P)	62		1			TEXAS B&Bテキサスインツルメント
☆ KHJ0875U-A	VALVE:SHUTTLE バルブ-シャトル	63		1			HIROSE 廣瀬製作所
▲ KRJ3557U-A	VALVE:SOLENOID バルブ-ソレノイド	64		2			NISHINA CHIBA

GAS PRESSURE 1.5MPa CAPACITY 300cm³

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METRIC

CUSTOMER | MFG NO. QTY
PRODUCTION QTY 備付 ☒
DATE: 2001. 1. 25 中 稿

MODEL SH300-3LBX CASE	GROUP KSJ	CODE DZ1601	WEIGHT (kg) -	H.T. (SEE NOTE)	PAINT NN	
DRAWN CHK'D INSP. APPR.	SCALE -	NAME HYDRAULIC SCHEM. DIAGRAM 回路図：油圧 (LBX/CASE)				
SUMITOMO (S.H.I.) CONSTRUCTION MACHINERY CO.,LTD.	DATE 2001. 1. 25	DWG. NO. KSJ27767-F				

SYM | DATE | CN NUMBER | NO. | REVISION | BY

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DIVISION/SECTION	SECTION N°	REFERENCE N°
9 UPPERSTRUCTURE		
Upperstructure, turntable and counterweight	9002	9-43410LX
Boom, dipper and bucket	9003	9-43420LX
Seat and seat belt	9004	9-40460LX
Cab and cab equipment	9005	9-43430LX
Air conditioning troubleshooting	9006	[redacted]
Air conditioning unit disassembly and assembly	9007	[redacted]
Air conditioning servicing	9008	[redacted]
Air conditioning components	9009	[redacted]
Large format hydraulic and electrical schematics	Pocket	9-42730

* *Consult the Engine Service Manual*

[redacted] *Sections to be distributed at a later date*

NOTE: Link-Belt Company reserves the right to make changes in the specification and design of the machine without prior notice and without incurring any obligation to modify units previously sold.

The description of the models shown in this manual has been made in accordance with the technical specifications known as of the date of design of this document.

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SPECIFICATIONS 2

FUEL TANK 3
Removal 3
Installation 4
Description 5

SPECIFICATIONS

See Section 1002.

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3) Operation

When the starter motor switch is positioned in the "ON" position, the 1st speed is selected by default.

Every time the travel mode switch is pressed (S2), the computer (A1) registers a signal (IN1: 0 volts).

The computer (A1) changes the travel speed in the following way I → II, II → I and transmits the modifications to the monitor display (P4).

Travel speed I selected

The output from the computer (OUT) (A1) of the 2 stage travel solenoid valve (Y4) is deactivated (1st speed).

Travel speed II selected

1. When the pressure of the pumps P1 or P2 is less than 580 psi, the output from the computer (OUT) (A1) of the 2 stage travel solenoid valve (Y4) is deactivated (1st speed).
2. When the pressure ofthe pumps P1 or P2 is greater than 580 psi, the output from the computer (OUT) (A1) of the 2 stage travel solenoid valve (Y4) is activated (2nd speed).
   When the attachment controls are operated, the output from the computer (OUT) (A1) of the 2 stage travel solenoid valve (Y4) cannot be activated or deactivated.
3. When the travel pressure is greater than 3771 psi, the travel motor displacement change spool is pushed back and the swash plate angle is in high displacement (1st speed).
4. Travel speed II can be forced (for cleaning tracks) by holding the travel mode switch pressed (S2) for over 2 seconds (IN1 = 0 volts).

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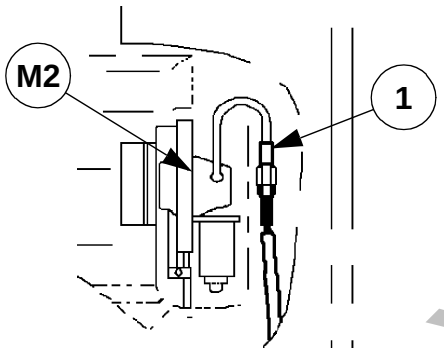
NOTE: *The + terminal of the meter should be connected to wire BrB (brown/black) on the service connector coming from the main harness and the - terminal to wire BrB (brown/black) on the service connector coming from the hydraulic pump.*

3. When the connections have been made, start the engine and check the current on the meter (5) in each work mode, at maximum speed.

Current in mA

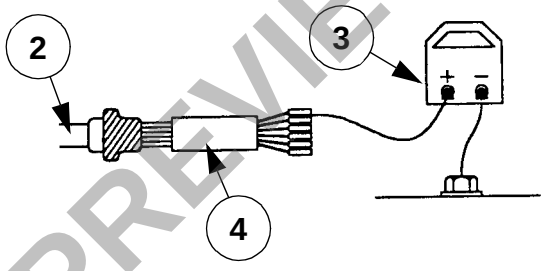
Mode	H		S	L	Auto	
	Max	Min			S	L
	600	490	490	50 or less	530	490
	515	405	405	50 or less	465	405

Engine emergency stop motor



CS01M543

1. Disconnect the connector (1) from the engine emergency stop motor (M2).



CS99A846

2. Connect the appropriate service connector (6P) (4) to the connector at the main harness end (2) only.

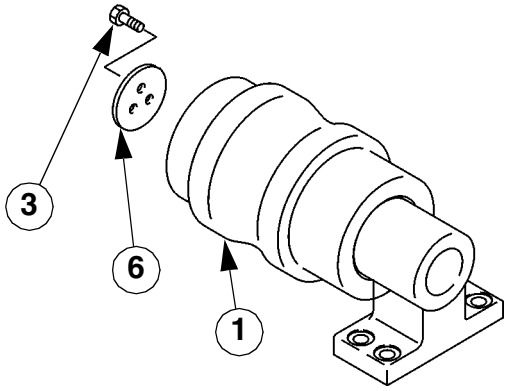
3. Make sure that wire LR (blue/red) on the service connector (4) is connected to wire LR on the main harness (2) and install the meter (3).

NOTE: *The + terminal on the meter must be connected to wire LR (blue/red) on the service connector and the - terminal to the machine earth.*

4. Turn the starter switch key to "ON", the meter reading should be 24 V.

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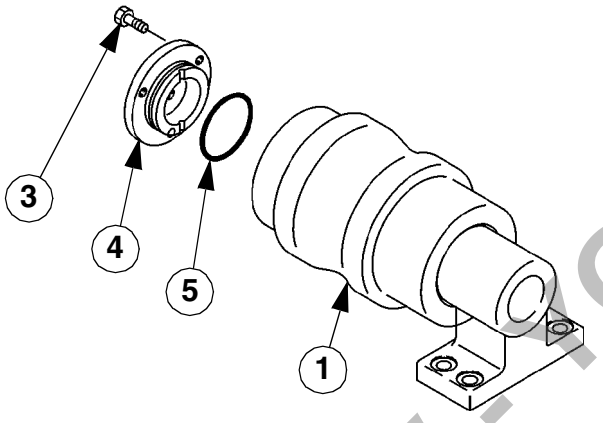
STEP 6



CS02B515

Apply grease on the inside of the thrust plate (6). Position the thrust plate on the shaft (7) and install the three screws (3). Apply brake thread fluid to the screws and tighten to a torque of 46.3 to 53.5 lb-ft.

STEP 7



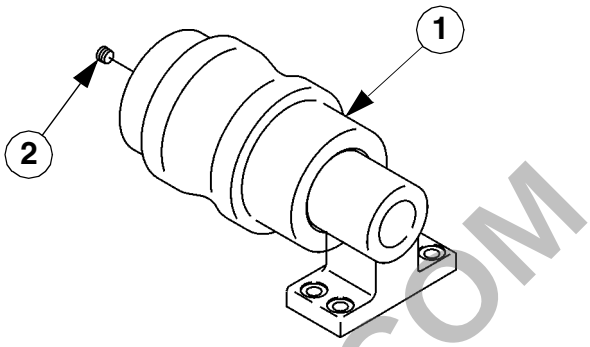
CS02B506

Apply grease on the seal (5) and install in the groove of the cover (4). Install the cover on the upper roller (1) using screws (3). Apply brake thread fluid to the screws and tighten to a torque of 46.3 to 53.5 lb-ft.

STEP 8

Check for leaks to ensure that the upper roller has been correctly reassembled and check for any damage which could give rise to leaks at seals and other components.

STEP 9

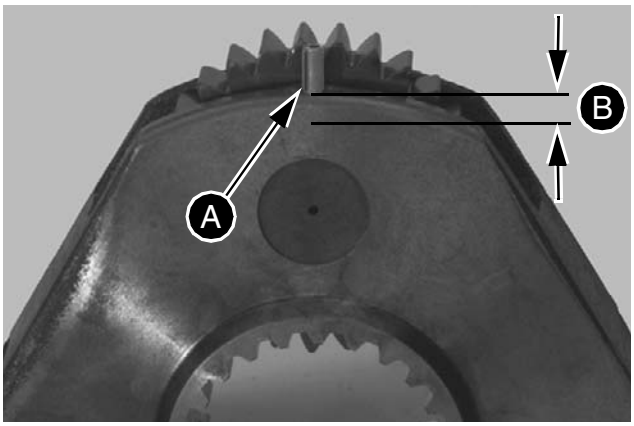


CS02B505

Fill the upper roller (1) with synthetic oil (see the specifications for quantity). Install the drain plug (2) in the cover (4). Tighten the plug to a torque of 18 lb-ft.

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STEP 4

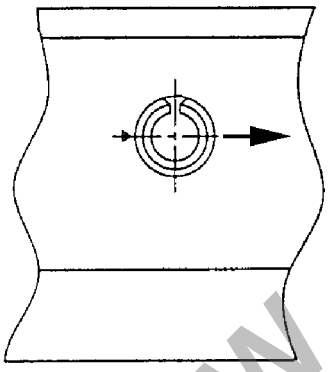


6003-107

Install a new pin (A) in the shaft using a suitable tool.
Recess dimension in the planet wheel carrier:
B = 0.039 in.
Lock it, using two strokes of a punch.

STEP 5

Position the retainer pins in the second stage planet wheel carrier.

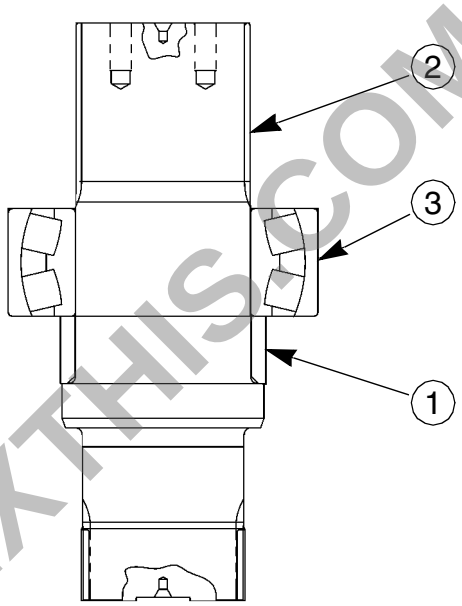


CS00K512

Boom: direction of rotation.

STEP 6

WARNING: *Take precautions (gloves), risk of burns.*



CI02B504

Install the spacer (1) on the shaft (2). Heat the bearing (3) to 122°F above the ambient temperature. Assemble the hot bearing on the shaft (2), use protective gloves.

STEP 7

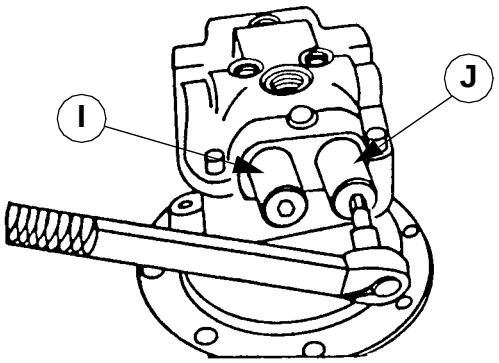


JD00465A

Degrease the reduction gear housing and apply Loctite 504. Fix the reduction gear housing in a press, install the lip seal in the reduction gear housing. Lubricate the lip seal with No. 2 EP lithium grease. Install the spacers, then install the bearing on the reduction gear side.

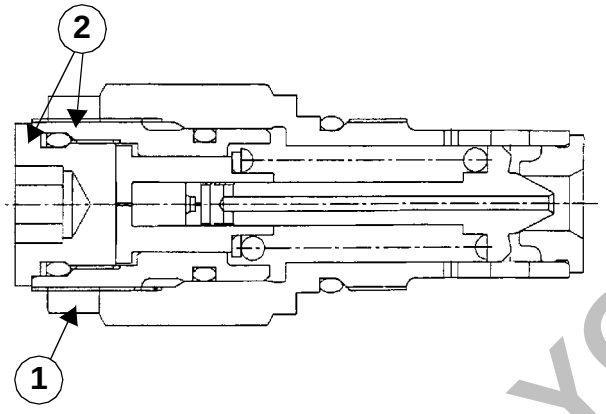
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Adjustment



CS99B596

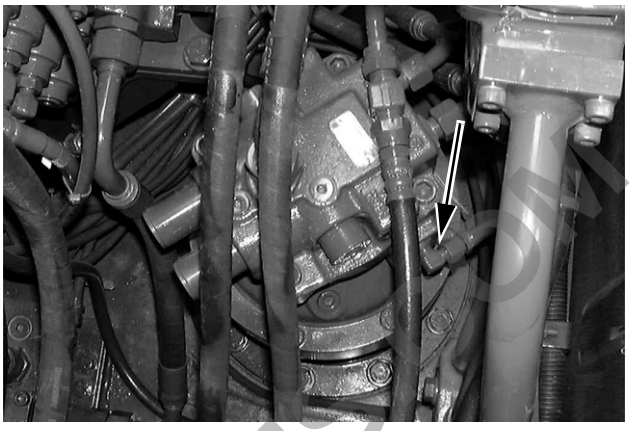
(I) RH swing port secondary relief
(J) LH swing port secondary relief



CI01M524

1. Carry out steps 1 to 5 in "Checking".
2. Using a wrench, hold the adjusting screw (2) and tighten the lock nut (1).
3. Slowly operate the swing control lever to the right and gradually increase the engine speed to full speed to make sure that the swing is locked.
4. Turn the adjusting screw (2) until the correct pressure is reached.
5. Using a wrench, hold the adjusting screw (2) and tighten the lock nut (1).
6. Check the pressure again. If the desired value is not obtained, repeat steps 2 to 6.

Checking the swing brake release pressure

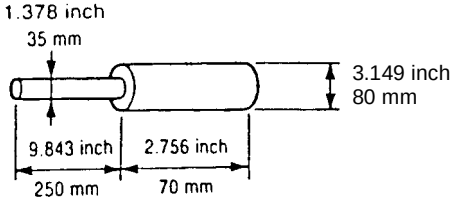


CD00E192

1. Disconnect the swing brake supply hose at the reduction gear end and connect a pressure test point and a 0-1450 psi pressure gauge to the hose.
2. With the engine at full speed, select mode "S".
3. With the swing control in the neutral position, switch on the swing brake control on the instrument panel (indicator lamp ON), the pressure should be between 0 and 43 psi.
4. With the swing control in the neutral position, switch off the swing brake control on the instrument panel (indicator lamp OFF), the brake release pressure should be about 566 psi.

Travel secondary relief (K, L)

Tools required

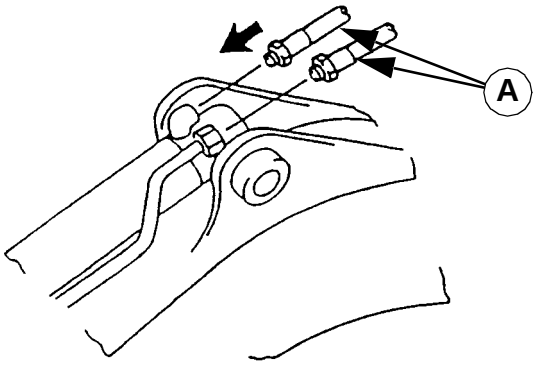


CS99B579

1 locking pin with the dimensions shown below

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STEP 6

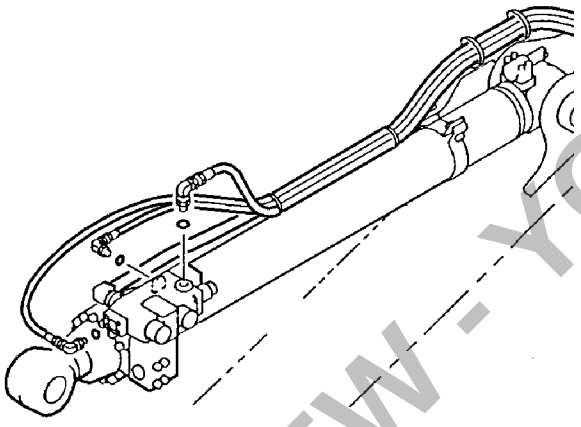


JS00605A

Start the vacuum pump. Remove the plugs from the hydraulic hoses (A) and the caps from the unions. Connect the hydraulic supply hoses on the dipper cylinder.

STEP 7

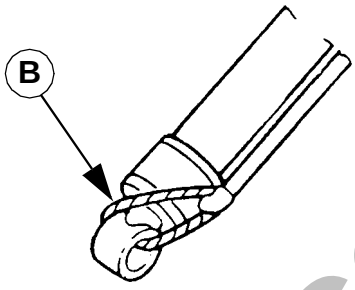
(Only if the machine is equipped with a safety valve)



CS00G503

Connect the hydraulic pilot hoses to the safety valve. Stop the vacuum pump.

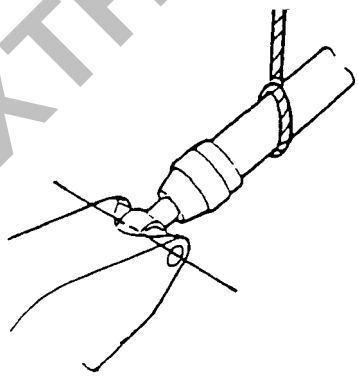
STEP 8



JS00586A

Remove the sling (B) that holds the cylinder rod to the cylinder barrel.

STEP 9

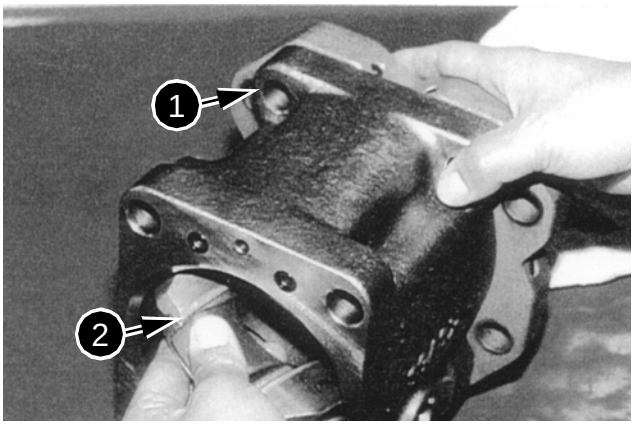


JS00606A

Align the dipper cylinder mounting ports with the dipper ports.

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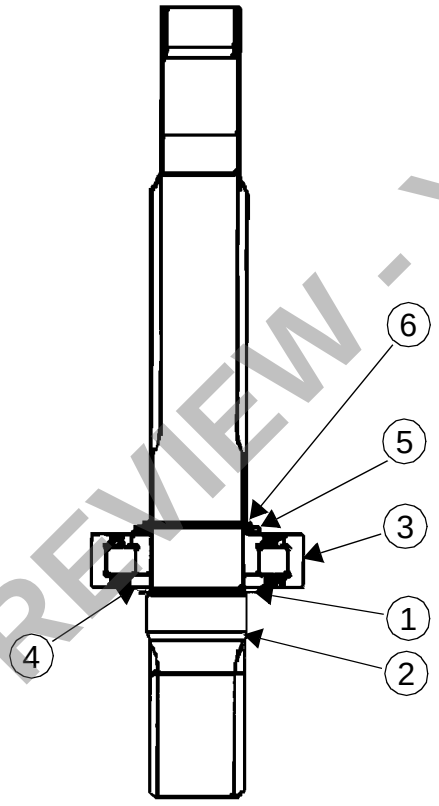
STEP 4



CD01G114

Place the pump housing (1) with the regulator side facing downwards. Coat the swash plate bearings (2) with grease. Install the swash plate (2) by engaging the housing of the plate in the control pivot. Check that the swash plate (2) is fully home against the housing bearings (1). Ensure that the swash plate (2) is able to move freely by pressing on each side with fingers of both hands.

STEP 5

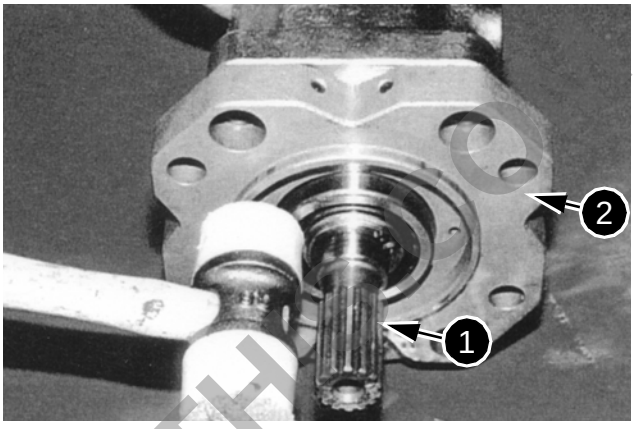


CI01G504

Install the shim (1) on the shaft (2). Heat the bearing (3) to 176°F in an oven.

NOTE: *The bearing locking shim (4) is oriented towards the shaft splines.*
Adjust the bearing (3) properly. Install the bearing (3) on the shaft (2) using heat protective gloves. Install the shim (5). Install the snap ring (6).

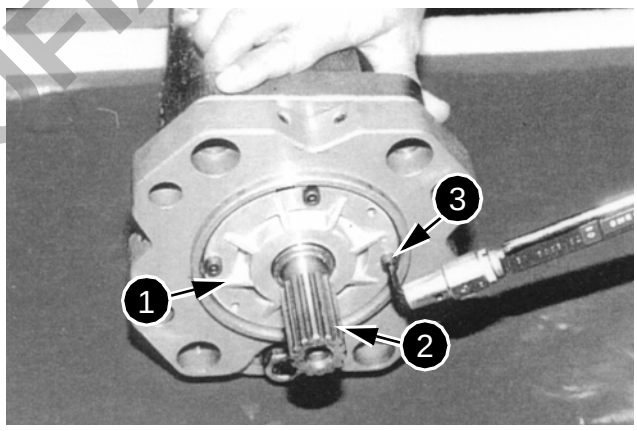
STEP 6



CD01G115

Install the shaft assembly (1) in the flange (2) while supporting the swash plate. Tap with a plastic mallet.

STEP 7



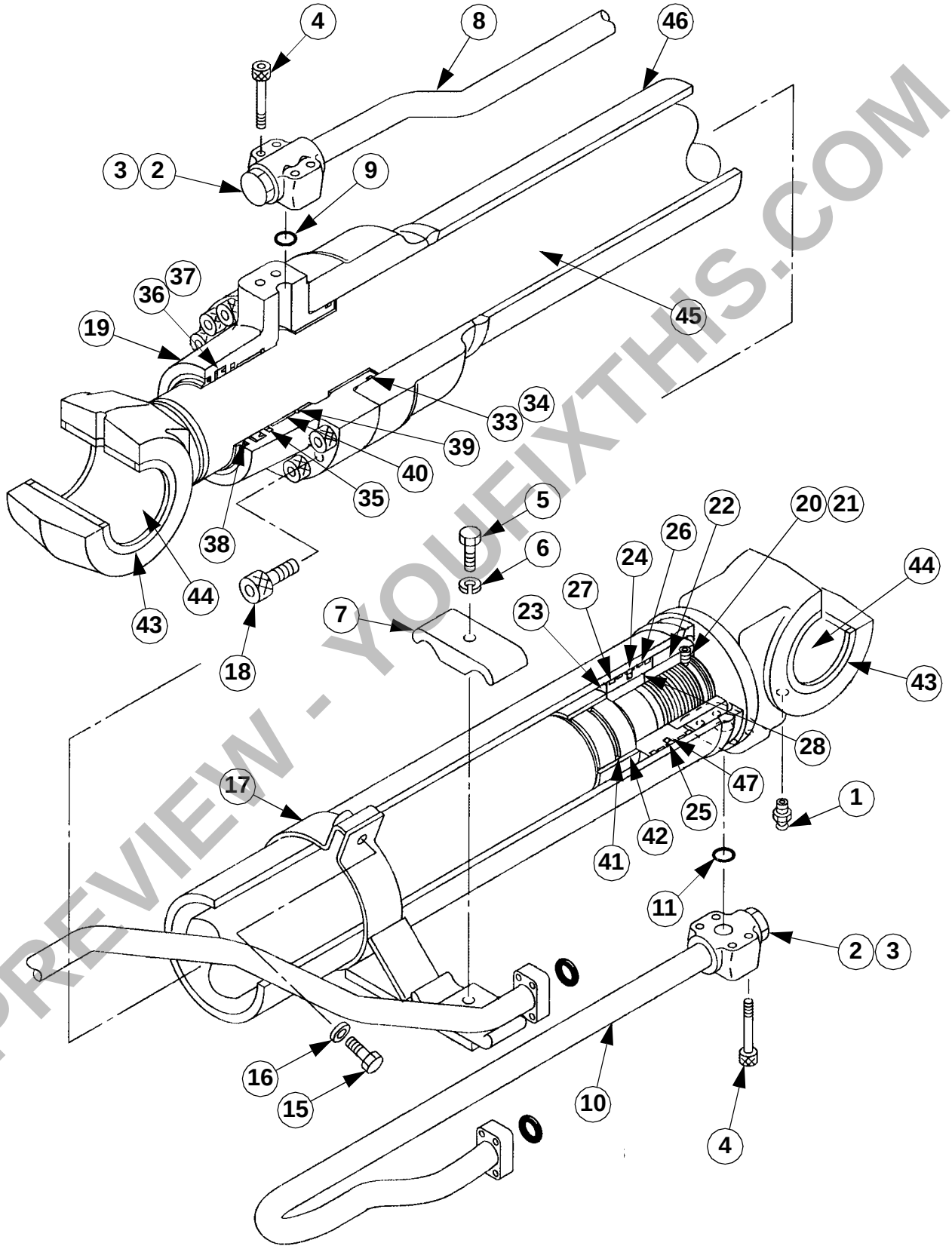
CD01G116

Grease the lip seal of the cover (1). Install the cover (1) taking care not to damage the lip seal on the splines of the shaft (2). Install and tighten the screws (3) to a torque of 21 lb-ft.

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CYLINDERS

Boom cylinder description



CS02B592

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Inspection

1. Clean all parts using suitable cleaning solvent. Immerse the solenoid valve housing in a cleaning solvent for several minutes to dissolve dirt or other foreign matter inside the solenoid valve housing. Use low pressure compressed air to blow out any foreign matter from interior of valve housing. Dry parts using clean cloths.
2. Inspect springs for cracks, distortion, or evidence of permanent set. Replace a spring if any of these defects are observed.
3. Check for cracks, holes, deformities and other signs of wear on the spools. Check that the spools slide easily into the grooves of the solenoid valve block spools. If any of these conditions are seen, replace the solenoid valve block.
4. Check that the internal threading is not worn out and that the solenoid valve block is not damaged inside. If any of these conditions are seen, replace the solenoid valve block.
5. Measure the play between the spool groove and the spool. The play must be approximately 0.00039 in. If this is not the case, replace the solenoid valve block.

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WARNING: *This symbol is used in this manual to indicate important safety messages. Whenever you see this symbol, carefully read the message which follows. Your safety depends on it.*

SPECIAL TORQUE SETTINGS

See Section 1002.

SPECIFICATIONS

Weight ..... See Section 1002

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