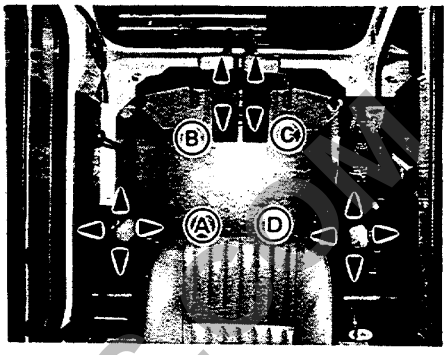
CONTROLS (SDX)



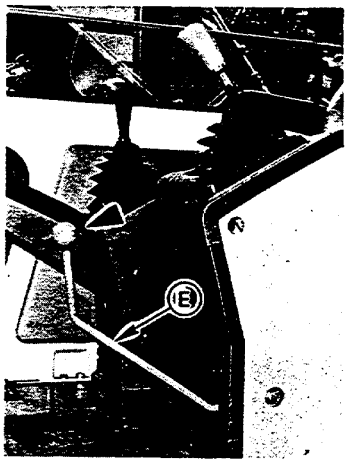
Ⓐ Swing and Arm Control Lever

Ⓑ Left Propel Lever (and Pedal)

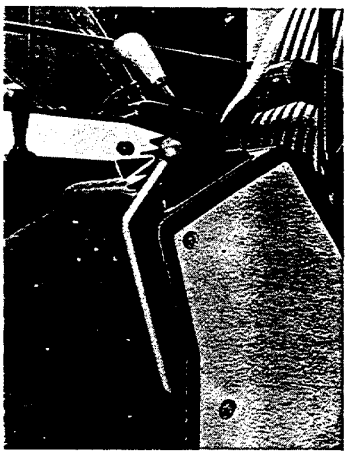
Ⓒ Right Propel Lever (and Pedal)

Ⓓ Boom and Bucket Control Lever

Ⓔ Control Neutralizer Lever
This machine is equipped with a control neutralizer lever. It is located on the left side of the operator's seat.
When you are sitting on the seat (with the control neutralizer lever ON):



When you get off the machine.
All actuators will not move if a control lever is operated by error.

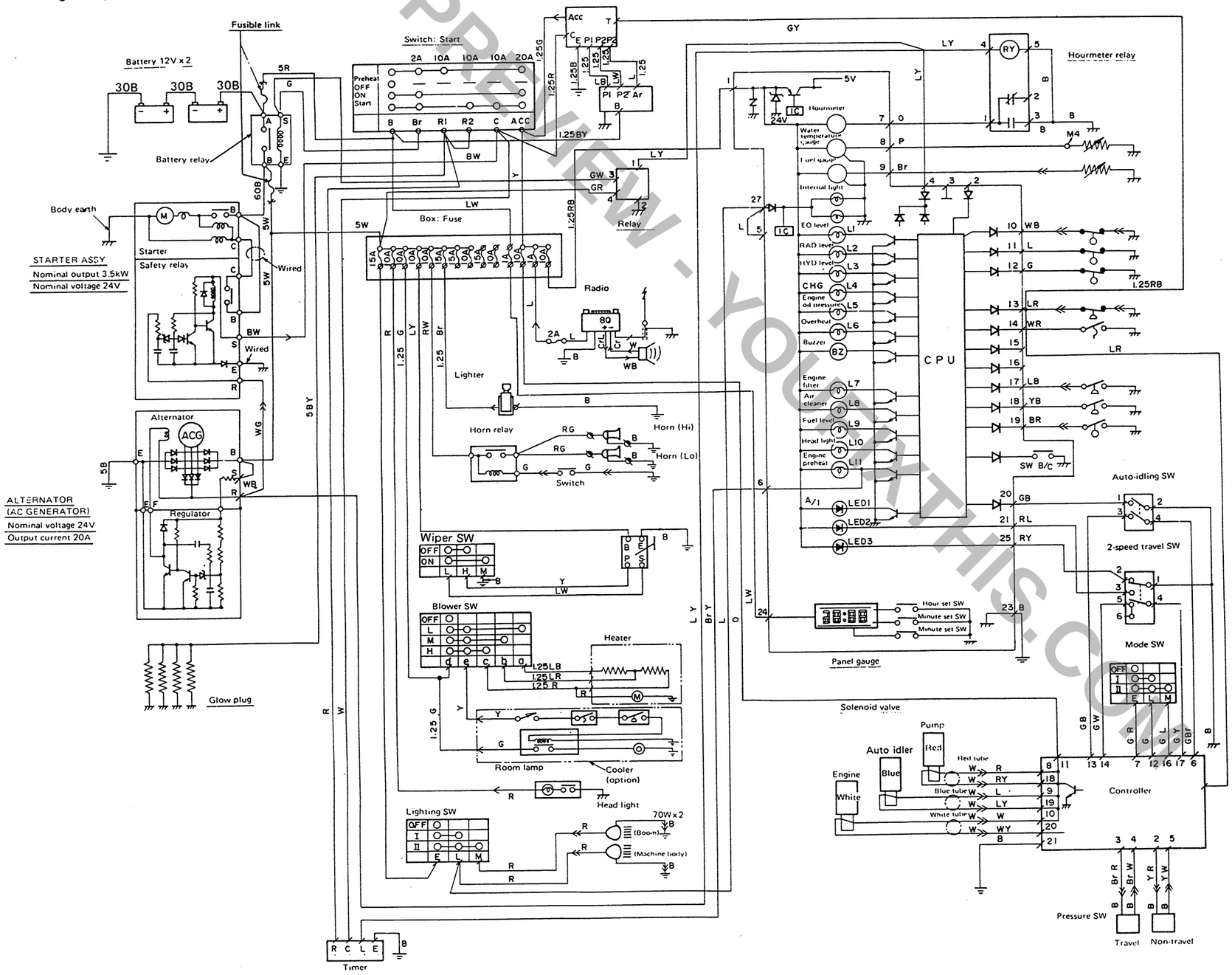


PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ELECTRICAL CIRCUIT (SDX)

This machine uses a 24 volt, negative earth type system. For additional details, refer to the ISUZU 4BD1 engine operation manual.



NOTES: Colour distinction of electrical wires.

B	: Black	BR	: Black/Red
Br	: Brown	BW	: Black/White
G	: Green	BY	: Black/Yellow
Gr	: Gray	GW	: Green/White
L	: Blue	GY	: Green/Yellow
O	: Orange	LB	: Blue/Black
R	: Red	LR	: Blue/Red
W	: White	LW	: Blue/White
Y	: Yellow	LY	: Blue/Yellow
		RB	: Red/Black
		RW	: Red/White
		RY	: Red/Yellow
		WG	: White/Green
		WL	: White/Blue
		WR	: White/Red
		YB	: Yellow/Black
		YR	: Yellow/Red

EX. BW stands for the white-marking on the Black-Basement.

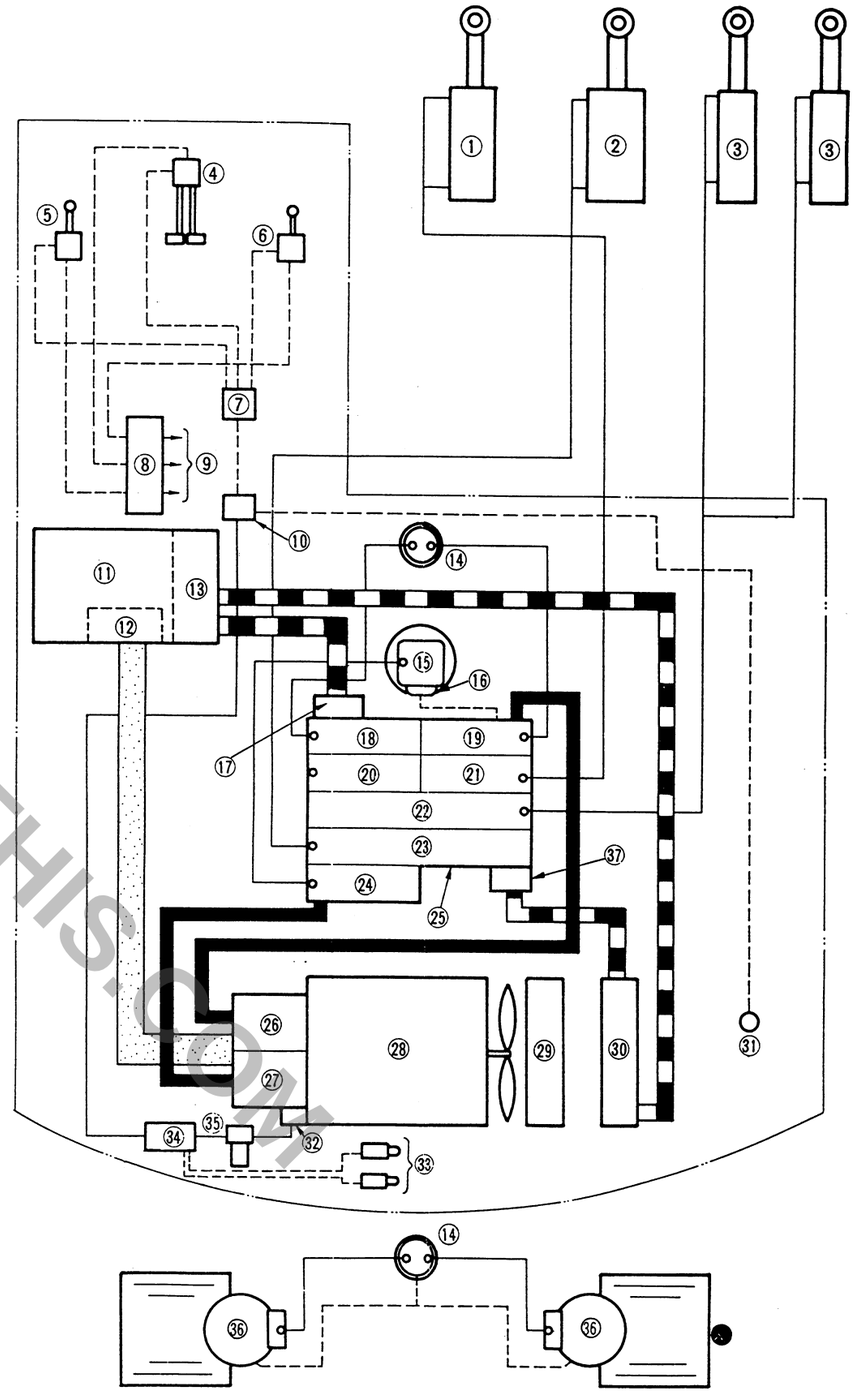
Notes:
1. Unless specified, all wires shall be 0.85 in diameter.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

HYDRAULIC SYSTEM (SDX)

(1) This machine has adopted an "optimum hydraulic system (OHS)", a new hydraulic system developed by Hitachi Construction which facilitates the speeding up of the actuator, swing operation and a variety of combined operations required of a hydraulic shovel.
(2) The control valve has an attachment port, which is a spare port used for the attachments (e.g. breaker).
(3) A large-capacity safety valve is provided at the control valve, with many additional safety valves equipped on each hydraulic circuit to prevent overpressure and clogging of filters that may damage the hydraulic unit.
(4) The travel parking brake is so structured that it is put ON and OFF automatically by the travel motor drive pressure. It is released by operating the travel (propel) lever, and is applied by taking off your hand.
(5) The swing parking brake is interlocked with the swing, boom, arm and bucket levers, and is put ON and OFF automatically.
It is released by operating the swing, boom arm or bucket lever, and is applied automatically after putting back the lever.
(6) This machine is equipped with an accumulator, which allows to move the front-end attachment for some time after the engine has stopped. As it contains high pressure gas, never detach it from the machine body, dismantle it or throw it into flames.
(7) The all hydraulic components, including the hydraulic pump, control valve have been adjusted at the time of factory delivery.
Do not dismantle these components nor touch the adjustment screws; once demounted, they are no longer readjustable. In case of any abnormality, always inform the nearest service shop.



① Bucket cylinder
② Arm cylinder
③ Boom cylinder
④ Travel pilot valve
⑤ Left pilot valve
⑥ Right pilot valve
⑦ Control neutralizer valve
⑧ Shockless valve
⑨ To control valve
⑩ Check valve
⑪ Hydraulic oil tank
⑫ Suction strainer
⑬ Full flow filter
⑭ Center joint
⑮ Swing motor
⑯ Parking brake selection valve
⑰ Bypass check valve
⑱ Travel (left)
⑲ Travel (right)
⑳ Spare
㉑ Bucket
㉒ Boom
㉓ Arm
㉔ Swing
㉕ Control valve
㉖ Front pump
㉗ Rear pump
㉘ Engine
㉙ Radiator
㉚ Oil cooler
㉛ Accumulator
㉜ Pilot pump
㉝ Mode selection cylinder
㉞ Solenoid valve
㉟ Pilot filter
㊱ Propel motor
㊲ Restriction valve

Supply line from pumps
Suction line
Return line
Actuator line
Drain and pilot line

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

MAINTENANCE GUIDE

A. Greasing (See p. 68)

Check the lubricating condition everyday.

Parts	No. of parts (Q'ty)	Interval (hrs) 8	50	100	250	500	1000	2000	See page
★1. Front joint pins	17	★		■					69
2. Swing bearing	2					■			70
3. Swing internal gear	1					■			70

★ After digging operation in water, apply grease to the pins which will get in or have been in water.

B. Engine oil (See p. 71)

Parts		No. of parts (Q'ty)	Interval (hrs) 8	50	100	250	500	1000	2000	See page
1. Engine oil	Level check	–	■							71
2. Engine oil	Replacement	15 ℓ				■				72
3. Engine oil filter replacement		1				■				72

C. Gear oil (See p. 73)

Parts	No. of parts (Q'ty)	Interval (hrs) 8	50	100	250	500	1000	2000	See page
1. Swing reduction unit	3.2 ℓ				Level check		Replace-ment		74
2. Propel reduction unit	3.5 ℓ × 2				Level check			Replace-ment	74

D. Hydraulic system (See p. 75)

Parts	No. of parts (Q'ty)	Interval (hrs) 8	50	100	250	500	1000	2000	See page
1. Hydraulic oil tank level check	–	■							76
2. Hydraulic oil tank drain	1				■				76
3. Hydraulic oil tank replacement	130 ℓ							■	77
4. Suction strainer element cleaning	1	When replacing hydraulic oil							78
5. Full-flow filter element replacement	1					■			79
6. Pilot filter element replacement	1						■		80

E. Fuel system (See p. 83)

tank capacity 250 ℓ

Parts	No. of parts (Q'ty)	Interval (hrs) 8	50	100	250	500	1000	2000	See page
1. Fuel tank draining	1	■							83
2. Fuel filter replacement	1					■			84
3. Feed pump inlet strainer cleaning	1						■		84
4. Water sedimenter checking	1		■						85

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

4 Retorque Check — every 250 hrs. (Initial 50 hrs.)

Retightening nuts and bolts

The correct torque is essential for the proper fit of assembled parts. The following nuts and bolts should be checked and retightened to the proper torque after the first 50 hrs. of operation, and then rechecked every 250 hrs. or 30 days. The tightening torque of each bolt is shown in this table.

No.	Parts to be retightened	Bolt diameter	Quantity	Applicable spanner (mm)	Torque N·m (kgf·m)
①	Nuts, fixing rubber cushion of engine	14	4	22	137 (14)
	Bolts, fixing rubber cushion of engine	16	2	24	265 (27)
②	Bolts, fixing engine bracket	10	7	17	49 (5)
	Nut, fixing engine bracket	10	1	17	49 (5)
③	Bolts, fixing hydraulic tank	16	4	24	206 (21)
④	Bolts, fixing fuel tank	16	4	24	206 (21)
⑤	Union joints of hydraulic hoses and pipings			19	29 (3)
				22	39 (4)
				27	93 (9.5)
				32	135 (14)
				36	174 (18)
				41	206 (21)
⑥	Bolts, fixing pump	10	9	17	49 (5)
⑦	Bolts, fixing control valve	14	8	22	137 (14)
⑧	Bolts, fixing control valve bracket	12	4	19	88 (9)
⑨	Bolts, fixing swing unit	20	10	30	539 (55)
⑩	Bolts, fixing battery	8	4	13	10 (1)
⑪	Bolts, fixing cab	16	4	24	206 (21)
⑫	Bolts, fixing swing bearing (Superstructure)	18	28	27	392 (40)
	(Track)	16	36	24	265 (27)
⑬	Bolts, fixing propel units and sprockets	16	60	24	265 (27)
⑭	Bolts, fixing carrier roller	12	8	19	88 (9)
⑮	Bolts, fixing track roller	16	56	24	265 (27)
⑯	Shoe bolts	16	344	24	441 (45)
⑰	Bolts, fixing cover, etc.	10		17	49 (5)
		12		19	88 (9)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ENGINE

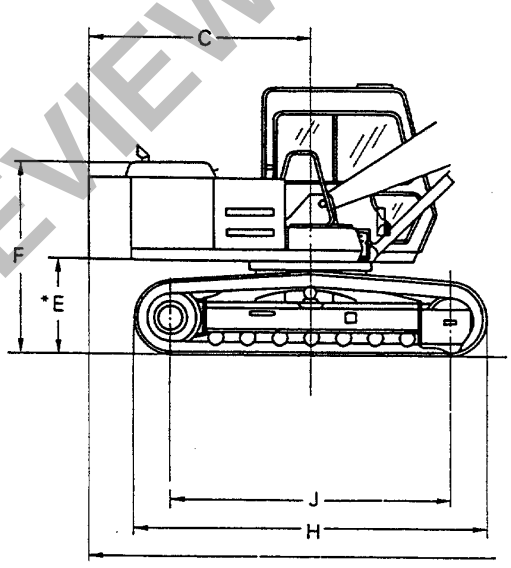
Problem	Cause	Solution	Note
Engine hard to start, will not start	Wrong fuel.	Use correct fuel.	
	Low battery power.	Charge or install new battery.	
	Wrong preheat line or glow plugs.	Repair or install new glow plugs.	
	Resistance in starting circuit.	Clean and tighten battery and starter motor connections.	
	Wrong engine oil.	Use correct oil.	
	Water, dirt, or air in fuel system or plugged filters. Injection nozzles dirty or not working correctly.	Remove air from fuel system. Clean fuel tank strainer. See your HITACHI dealer for injection nozzle service.	
	Leaks in fuel system.	Check fuel system connections.	
	Air locked in fuel system.	Remove air from fuel system.	
Engine knocks, runs irregularly or stops	Engine oil low.	Add oil	
	Plugged air intake system.	Clean filter and system.	
	Injection pump out of time.	See your HITACHI dealer.	
	Plugged fuel filters.	Install new filters.	
	Low coolant temperature.	Thermostat not working correctly or too "cool".	
	Water, dirt, or air in fuel system.	Remove air from fuel system. Clean fuel tank.	
	Plugged filters or injection nozzles dirty or faulty.	See your HITACHI dealer for injection nozzle service.	

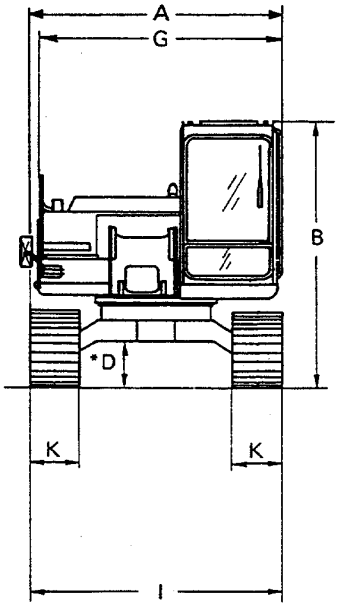
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Specification

Model	EX120 Hydraulic excavator
Type of front-end attachment	Standard arm
Standard bucket capacity	0.45 m^3 (heaped capacity)
Operating weight	116 kN (11.8 t)
Basic machine weight	96 kN (9.8t)
Engine	ISUZU 4BD1T,62.5 kW (85 PS)/2200 rpm
A : Overall width(Excluding back mirrors)	2490 mm
B : Cab height	2690 mm
C : Rear-end swing radius of basic machine	2200 mm
D : Minimum ground clearance	440 mm
E : Lower end height of superstructure	900 mm
F : Engine cover height	1905 mm
G : Overall width of superstructure	2450 mm
H : Overall length of crawler	3510 mm
I : Overall undercarriage width	2490 mm
J : Distance between tumbler centers	2780 mm
K : Standard shoe width	500 mm (grouser shoe)
Ground pressure	0.038 MPa (0.39 bar)
Swing speed	12.3 rpm (min^{-1})
Travel speed	(SDX) 4.4 km/h/Approx 3.4 km/h
	(DX) 4.0 km/h
Gradeability	70% (35°)





Note: * Not including the shoe-lug height.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1. Hydraulic Breaker

◎ Mounting and matching the hydraulic breaker

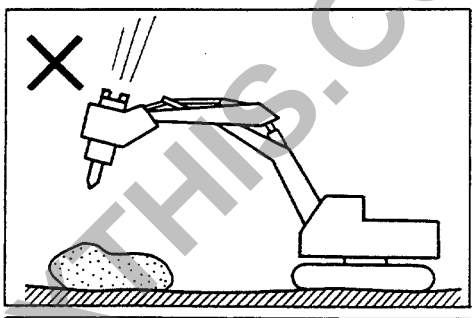
When mounting the breaker on the hydraulic excavator, it is necessary to consider the matching of stability, hydraulic pressure or oil quantity for each breaker. To select hydraulic breakers, call on your dealer or service station.

◎ Precaution

To use the hydraulic breaker, thoroughly read the Operation Manual to make the most of the functions, with care to damage to the excavator and breaker.

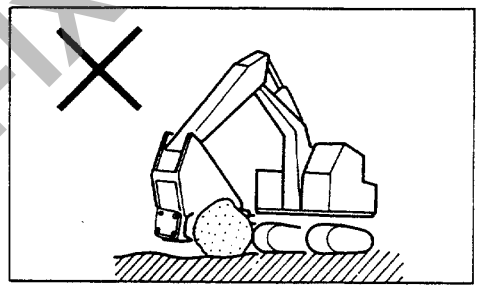
(1) Avoid abruptly hitting objects

The hydraulic breaker is heavier than the bucket. The hydraulic excavator should therefore be slowly operated. Do not rapidly hit objects to be crushed, otherwise the front or swing mechanism of the excavator may be damaged.



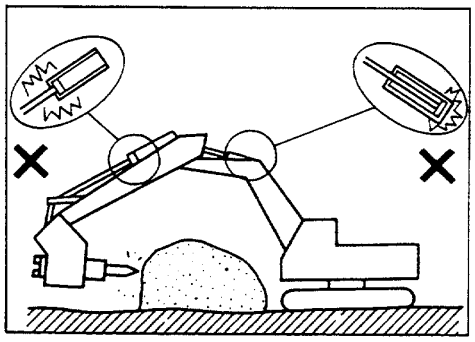
(2) Do not move objects

Do not move objects by using the bracket, which causes the front attachment of the excavator to be damaged and the swing mechanism to be subjected under excessive load; also the breaker may be damaged.



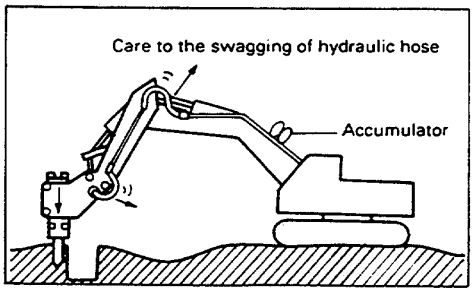
(3) Avoid hitting with excavator cylinder at stroke end

Do not hit objects with the hydraulic cylinder of the excavator extended to the stroke end. Give a distance of 100 mm or more from the stroke end, otherwise the hydraulic cylinder or front attachment may be damaged.



(4) Stop operation if hydraulic hose is swagged abnormally

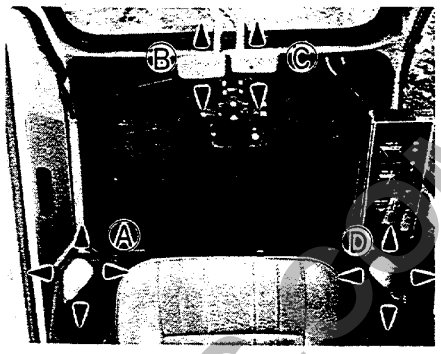
Sopt operation if the hydraulic hose is swagged abnormally, which is caused by a change of the accumulator gas pressure or damaged accumulator. Continuous use of the machine with the hose left swagged will increase the impact, causing the bolts to be loosened or the excavator to fail to work normally.



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

CONTROLS (DX)



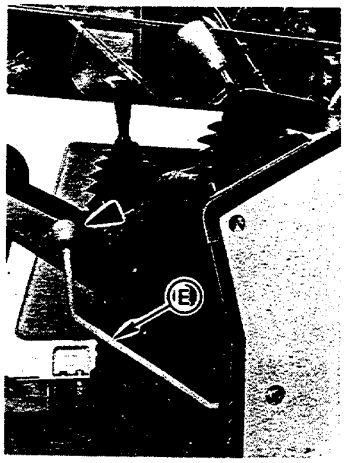
Ⓐ Swing and Arm Control Lever

Ⓑ Left Propel Lever

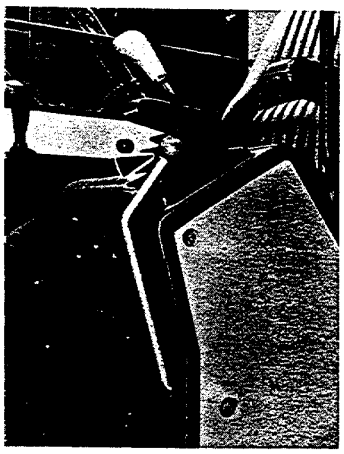
Ⓒ Right Propel Lever

Ⓓ Boom and Bucket Control Lever

Ⓔ Control Neutralizer Lever
This machine is equipped with a control neutralizer lever. It is located on the left side of the operator's seat. When you are sitting on the seat.
When you are sitting on the seat (with the control neutralizer lever ON):



When you get off the machine.
All actuators will not move if a control lever is operated by error.

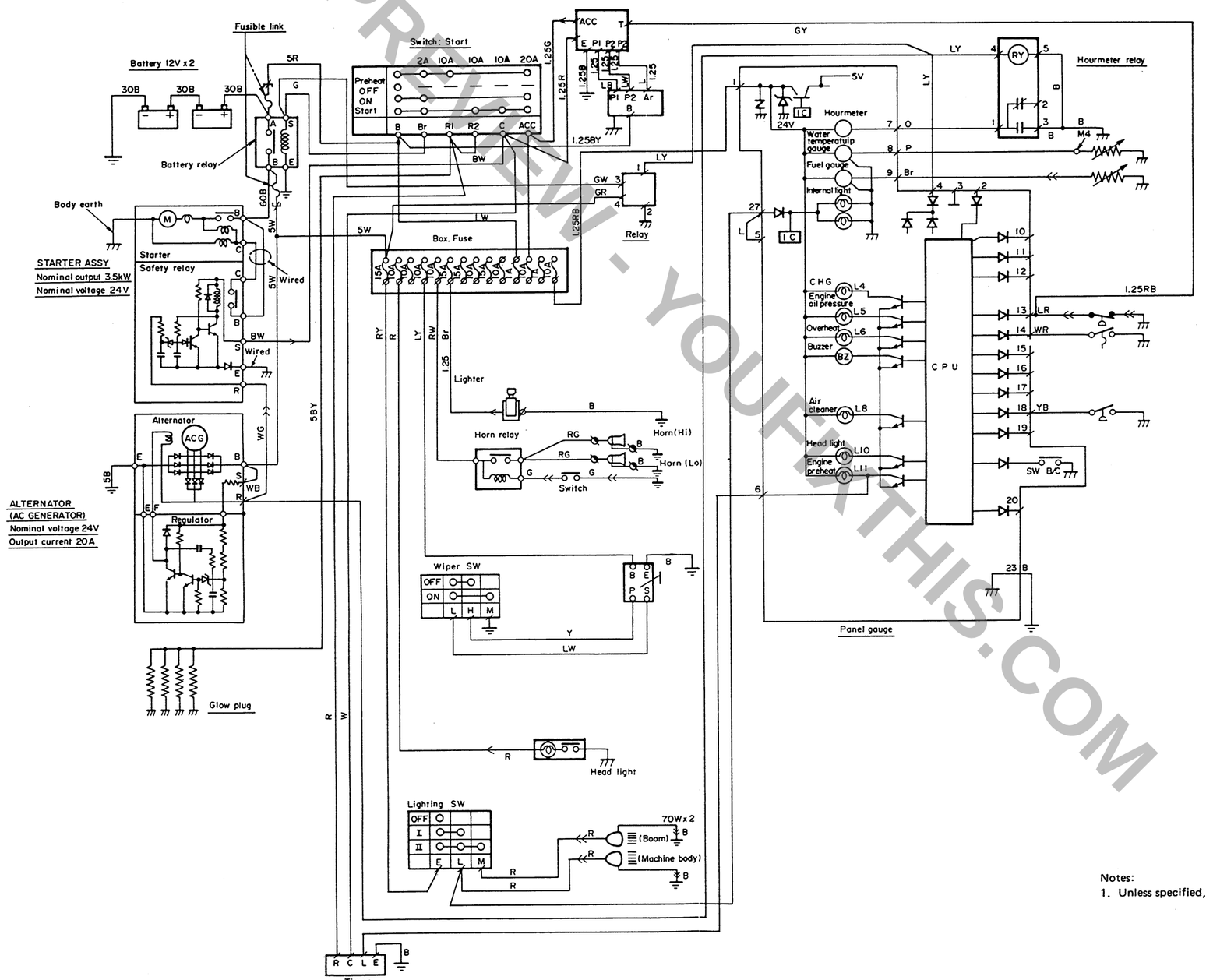


PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ELECTRICAL CIRCUIT (DX)

This machine uses a 24 volt, negative earth type system. For additional details, refer to the ISUZU 4BD1 engine operation manual.



NOTES: Colour distinction of electrical wires.

B	: Black	BR	: Black/Red
Br	: Brown	BW	: Black/White
G	: Green	BY	: Black/Yellow
Gr	: Gray	GW	: Green/White
L	: Blue	GY	: Green/Yellow
O	: Orange	LB	: Blue/Black
R	: Red	LR	: Blue/Red
W	: White	LW	: Blue/White
Y	: Yellow	LY	: Blue/Yellow
		RB	: Red/Black
		RW	: Red/White
		RY	: Red/Yellow
		WG	: White/Green
		WL	: White/Blue
		WR	: White/Red
		YB	: Yellow/Black
		YR	: Yellow/Red

EX. BW stands for the white-marking on the Black-Basement.

Notes:
1. Unless specified, all wires shall be 0.85 in diameter.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

HYDRAULIC SYSTEM (DX)

(1) This machine has adopted an "optimum hydraulic system (OHS)", a new hydraulic system developed by Hitachi Construction which facilitates the speeding up of the actuator, swing operation and a variety of combined operations required of a hydraulic shovel.

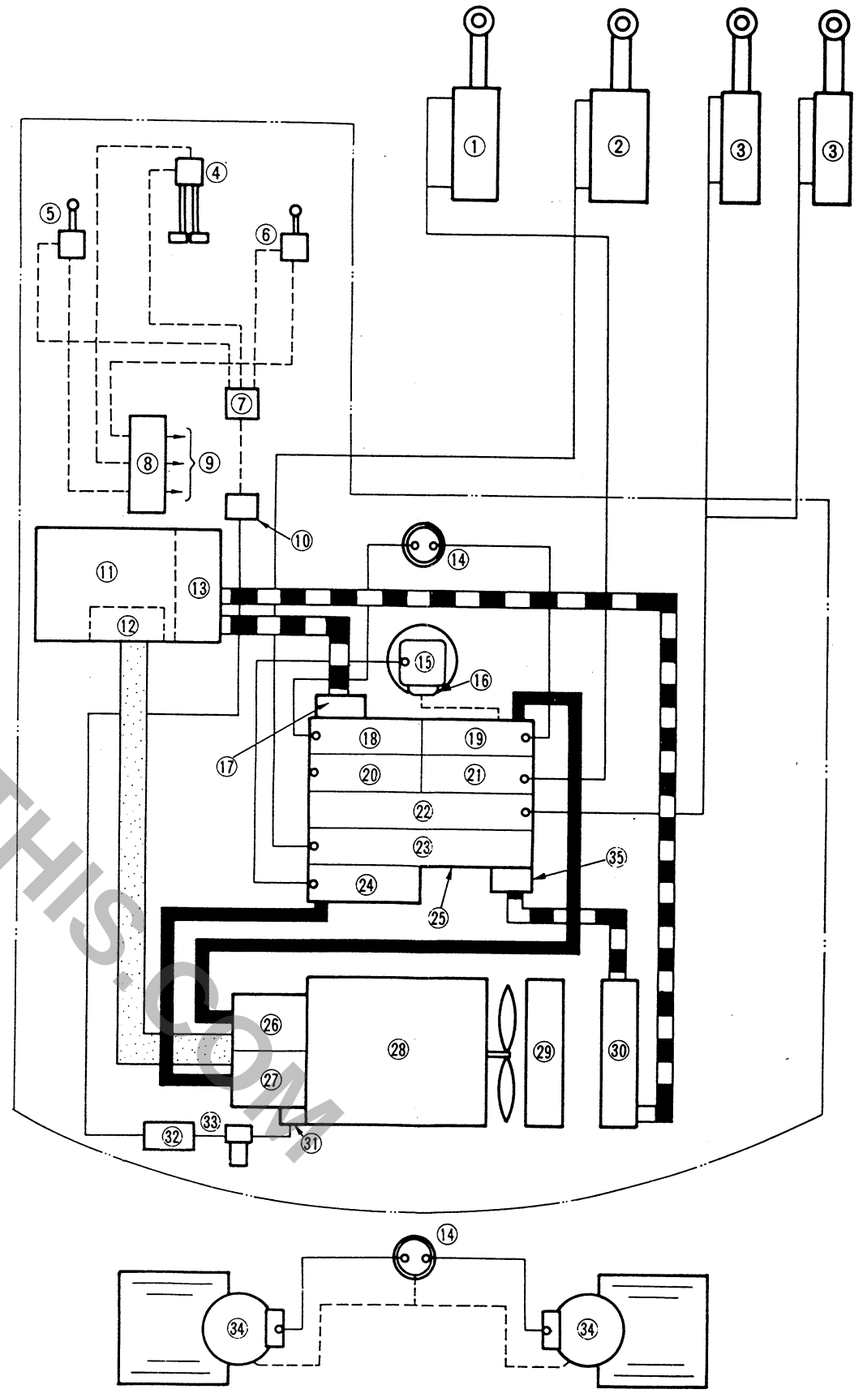
(2) The control valve has an attachment port, which is a spare port used for the attachments (e.g. breaker).

(3) A large-capacity safety valve is provided at the control valve, with many additional safety valves equipped on each hydraulic circuit to prevent overpressure and clogging of filters that may damage the hydraulic unit.

(4) The travel parking brake is so structured that it is put ON and OFF automatically by the travel motor drive pressure. It is released by operating the travel (propel) lever, and is applied by taking off your hand.

(5) The swing parking brake is interlocked with the swing, boom, arm and bucket levers, and is put ON and OFF automatically.
It is released by operating the swing, boom arm or bucket lever, and is applied automatically after putting back the lever.

(6) The all hydraulic components, including the hydraulic pump, control valve have been adjusted at the time of factory delivery.
Do not dismantle these components nor touch the adjustment screws; once demounted, they are no longer readjustable. In case of any abnormality, always inform the nearest service shop.



① Bucket cylinder
② Arm cylinder
③ Boom cylinder
④ Travel pilot valve
⑤ Left pilot valve
⑥ Right pilot valve
⑦ Control neutralizer valve
⑧ Shockless valve
⑨ To control valve
⑩ Check valve
⑪ Hydraulic oil tank
⑫ Suction strainer
⑬ Full flow filter
⑭ Center joint
⑮ Swing motor
⑯ Parking brake selection valve
⑰ Bypass check valve
⑱ Travel (left)
⑲ Travel (right)
⑳ Spare
㉑ Bucket
㉒ Boom
㉓ Arm
㉔ Swing
㉕ Control valve
㉖ Front pump
㉗ Rear pump
㉘ Engine
㉙ Radiator
㉚ Oil cooler
㉛ Pilot pump
㉜ Pilot relief valve
㉝ Pilot filter
㉞ Propel motor
㉟ Restriction valve

Supply line from pumps
Suction line
Return line
Actuator line
Drain and pilot line

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

F. Air intake (See p. 86)

Parts			No. of parts (Q'ty)	Interval (hrs)							See page
				8	50	100	250	500	1000	2000	
1. Air cleaner (intake)	Outer element	Cleaning	1					(Or when warning lamp lit)			86
		Replacement	1	After cleaning 6 times or 1 year							86
	Inner element	Replacement	1	At time of replacing outer element							86

G. Cooling system (See p. 87)

Parts		No. of parts (Q'ty)	Interval (hrs)							See page
			8	50	100	250	500	1000	2000	
1. Level check		1								88
2. Fan belt tension		1		Initial only						88
3. Coolant replacement		18 ℓ								89
4. Radiator core cleaning	Outside	1								89
	Inside	1								89
5. Oil cooler front net cleaning		1								89

H. Electrical system (See p. 90)

I. Others (See p. 92)

Parts	No. of parts (Q'ty)	Interval (hrs)							See page
		8	50	100	250	500	1000	2000	
1. Bucket teeth-loose, wear	–	–							93
2. Track tension	2								94
3. Check the bucket linkage clearance	1	When required							95
4. Torque check	–		Initial only						96
★ 5. Engine compression pressure	–								
★ 6. Engine valve clearance	–								

★ Refer to "Instruction Manual for Isuzu Engine 4BD1" for engine.

⚠ An lubricant name plate is affixed on the inside of the tool box cover.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 138 pages

The full manual includes:

- All 138 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Hitachi EX120 Operator Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual