

OPERATION & MAINTENANCE KATO SR-500L



Reliable Heavy Equipment Solutions

Authorized Distributor of

KATO

SUMITOMO

IHI

SKYJACK

LIEBHERR

LIEBHERR

<https://cranemanuals.com>

OBJECTIVE TRAINING

Setelah mengikuti training ini peserta diharapkan:

1. Mengetahui dan memahami fungsi dan letak komponen utama pada unit
2. Mengetahui dan memahami fungsi tombol, lever, dan pedal untuk pengopersian unit
3. Mengoperasikan unit dengan aman dan benar sesuai dengan prosedur
4. Melakukan perawatan unit dengan benar sesuai dengan panduan *periodic maintenance*

CONTENT

1. Product Knowledge
2. Safety
3. Operation
4. Periodic Maintenance

1. PRODUCT KNOWLEDGE

SR-500L

Strong and smooth lifting

4-section round-shaped SUPERBOOM

Simultaneous extension / retraction for various operations.

- Boom lifting capacity **SUPERBOOM**
- Maximum lifting capacity 51t×2.5m
- Boom length 10.7m~35.0m
- Boom derricking angle -1°~82°
- Maximum lifting height (Boom) 35.6m

2-section manual jib

Boom side stow type. Easy and safe jib operation.

- Manual jib lifting capacity
- Maximum lifting capacity 5.0t×7.5°
- Jib length 8.8m, 15.2m
- Jib offset angle 5°, 25°, 45°
- Maximum lifting height (Boom+Jib) 51.0m

34t GVW

GVW is 33,970kg with radial tire. Tow hooks are equipped on the front and rear ends. Enable to transport efficiently.



GVW : 33,970 kg *At radial tire travelling position.



For various operation



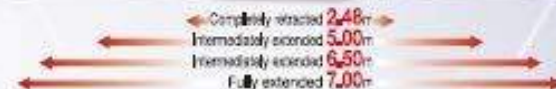
Balloon tire is selectable

Balloon tire (option) secure stable travelling at off-road ground.



4-position outriggers

Ensure safe and stable operation by 4-position outriggers.



Reliable Mitsubishi engine

○ Model: Mitsubishi 6M60-TL (Electronically controlled Common-rail type)

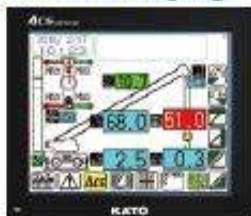
- Piston displacement 7.545L
- Max Power 200kW / 2,600min⁻¹
- Max Torque 785N·m / 1,400min⁻¹



Comfortable operator's cabin



New ACS with colorful display



- Emergency switch
- ACS display
- Camera monitor (option)
- Right side mirror

K-COR (KATO Crane Operation Recorder) (option)

Records working status of crane. Record can retrieve by SD Card.



User safety by latest KATO ACS

2-points working range limiting function

Operator is enable to avoid contact accident by setting 2 vertical surface working range limit.

Load factor limiting function

Available to control load factor between 80% to 100% of rated-lifting-capacity to keep a bigger safety margin.



Global standard safety devices

Good access to cab and crane structure with steady steps and handles. Safety cameras to prevent operator from accident.



Construction

Upper structure : Boom, power jib, slewing table, cabin, control valve...

Carrier : Engine, transmission, pumps, outriggers, Rotary brush...

**Control
system**

**For crane part
Moment limiter
(ACS)**

**For carrier
part :**



Upper Structure

4 section boom

Length: (From 10.7m to
35.0m)

Angle: (From -1° to
 82°)

**Boom extending/retracting type
(1 telescopic cylinders + wire
ropes)
(1 derrick cylinder)**

2,3,4 section

**Moving at the same time
(1 cylinder + wires)**

2 section Manual Jib

Length: (From 8.8m to
15.2m)

Off set Angle: (5° , 25° ,
 45°)

**Jib Manual extending /retracting
type**

Carrier

Engine: 7,545L Mitsubishi 6M60-TL

Water cooled, direct injection turbo-charged diesel engine with intercooling, Common rail

Transmission:

Forward 4 speed, MAX. speed 48 km/h, reverse 1 speed(Hi / low)

Pumps:

2 Axial plunger type + 2 gear type

Steering:

Full hydraulic power steering,
Completely independent front and rear steering .

Brake system

Service brake: Air-over hydraulic disk brake on 4 wheels
Parking brake: Spring applied brake(mounted on front axle)

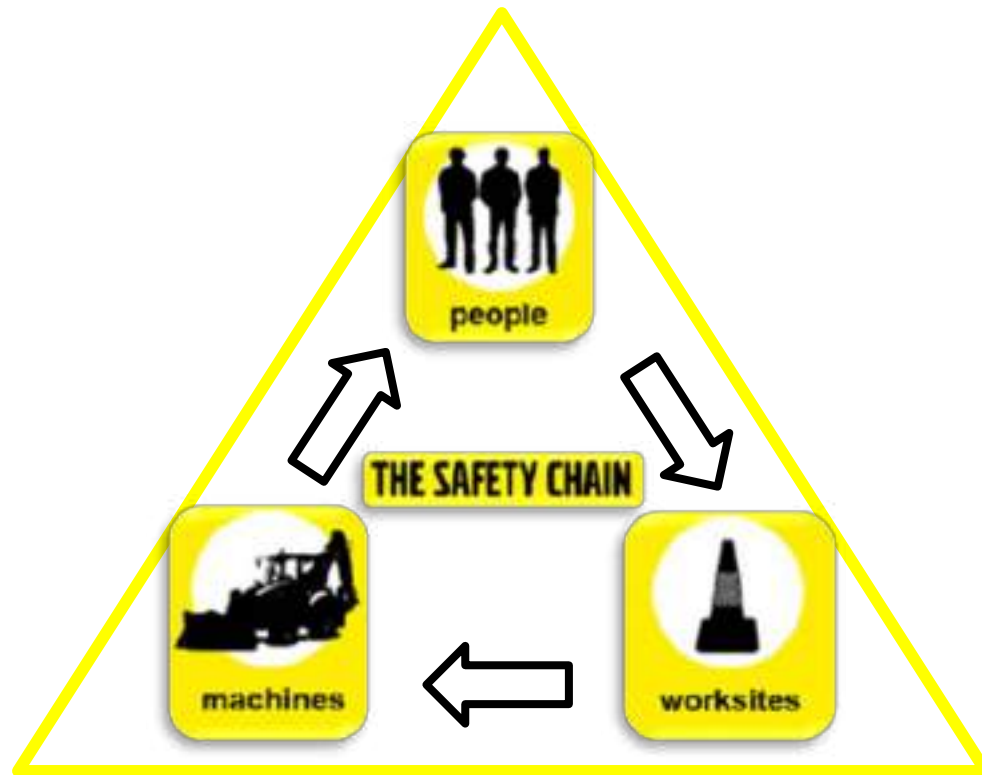
Aux. brake: Exhaust brake, Service brake lock

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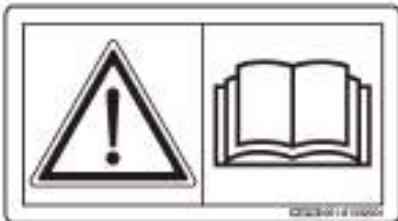
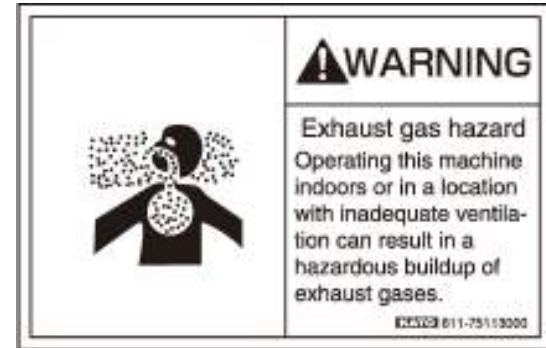
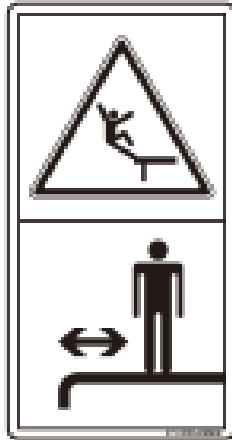
ACS Display (Automatic Crane System)



2. SAFETY



SAFETY SIGNS



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001-81352015a

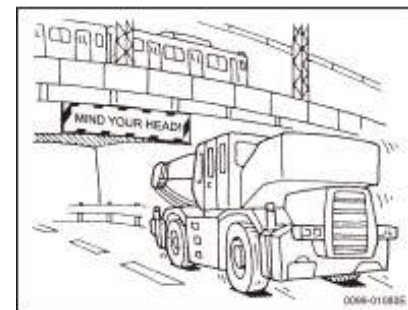
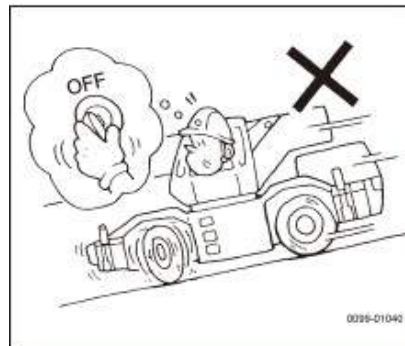
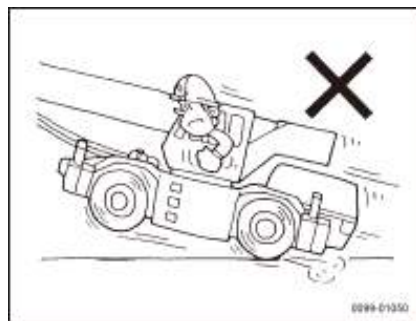
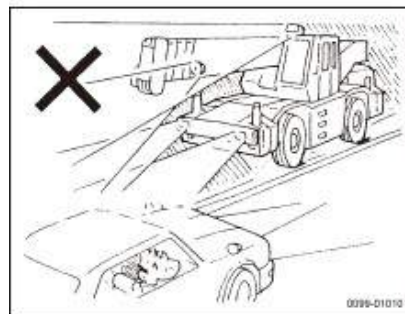
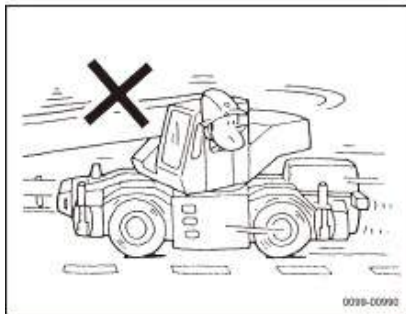
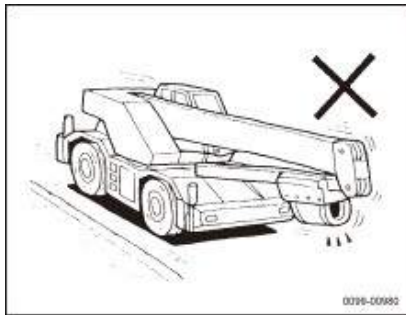


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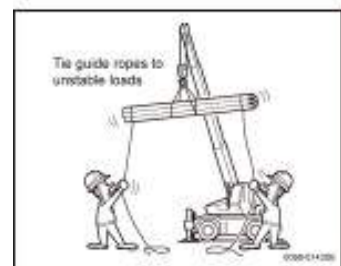
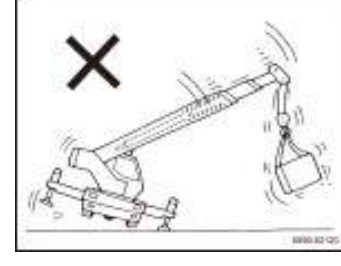
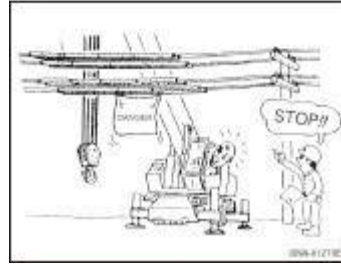
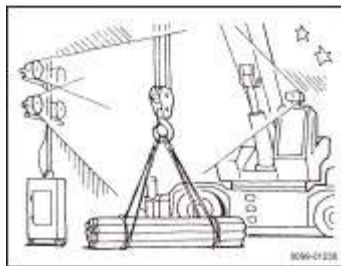
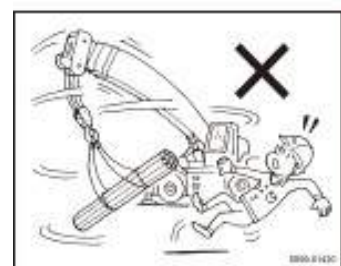
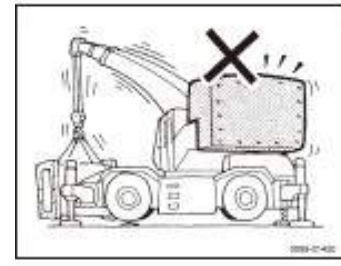
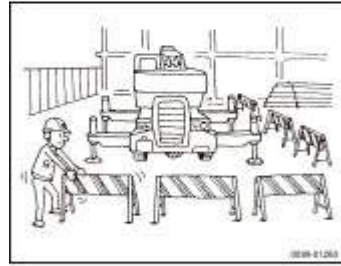
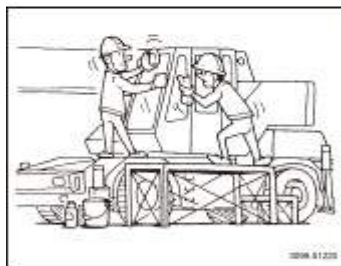
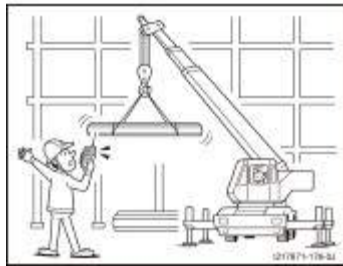
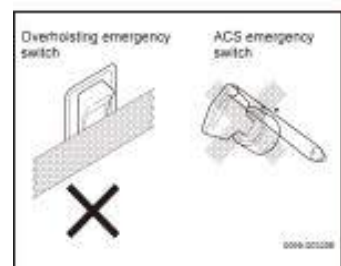
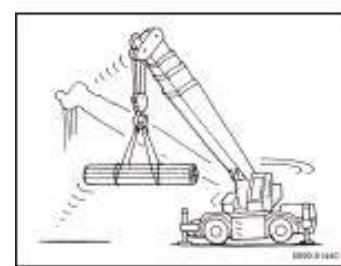
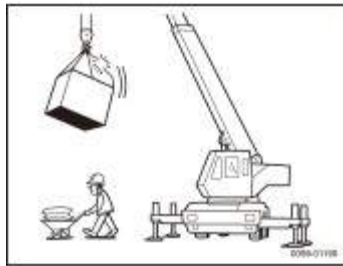
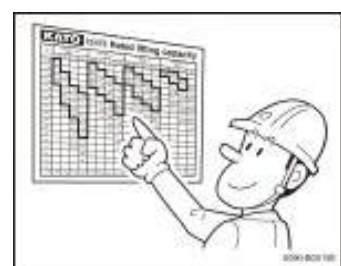
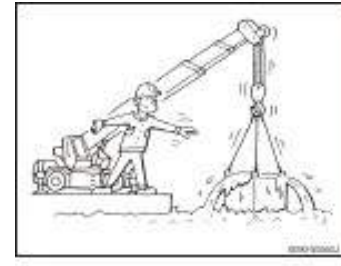


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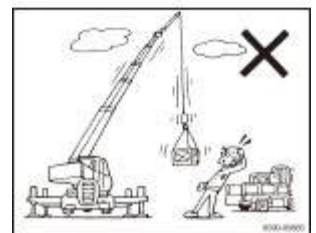
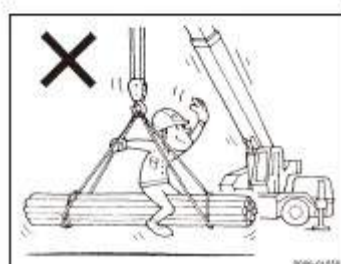
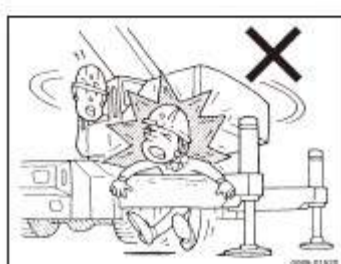
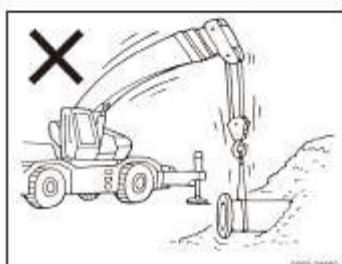
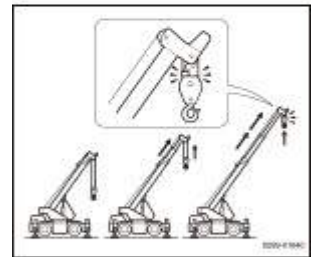
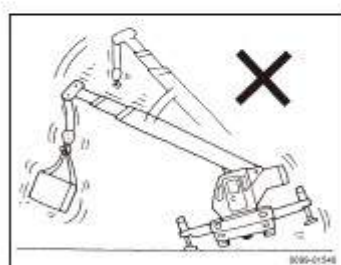
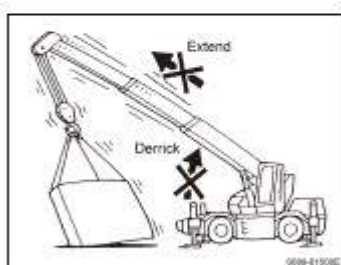
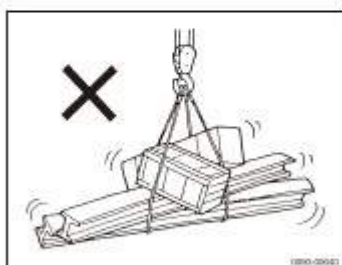
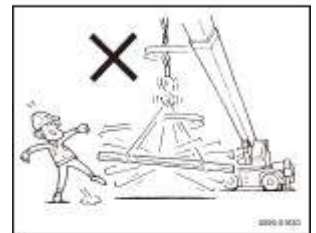
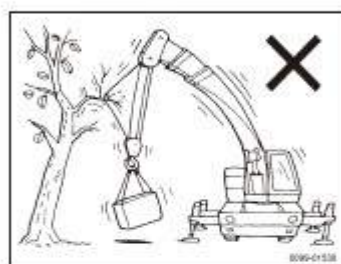
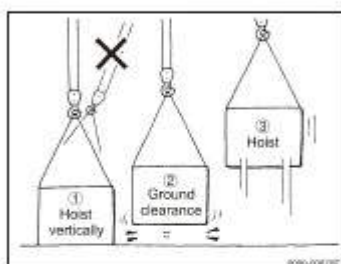
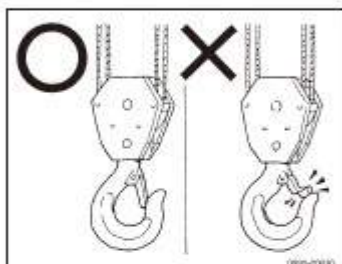
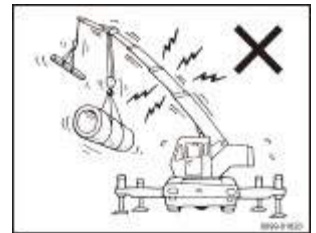
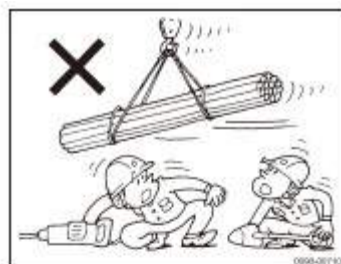
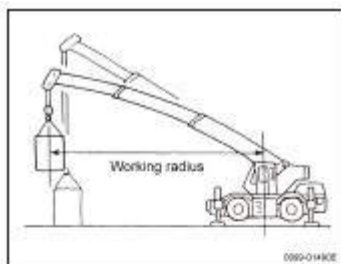
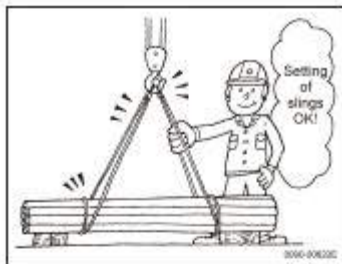
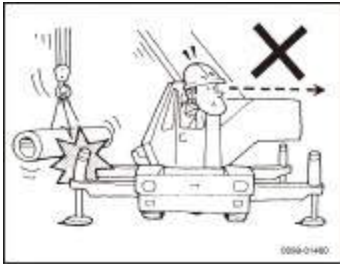
SAFETY DRIVING



SAFETY OPERATION

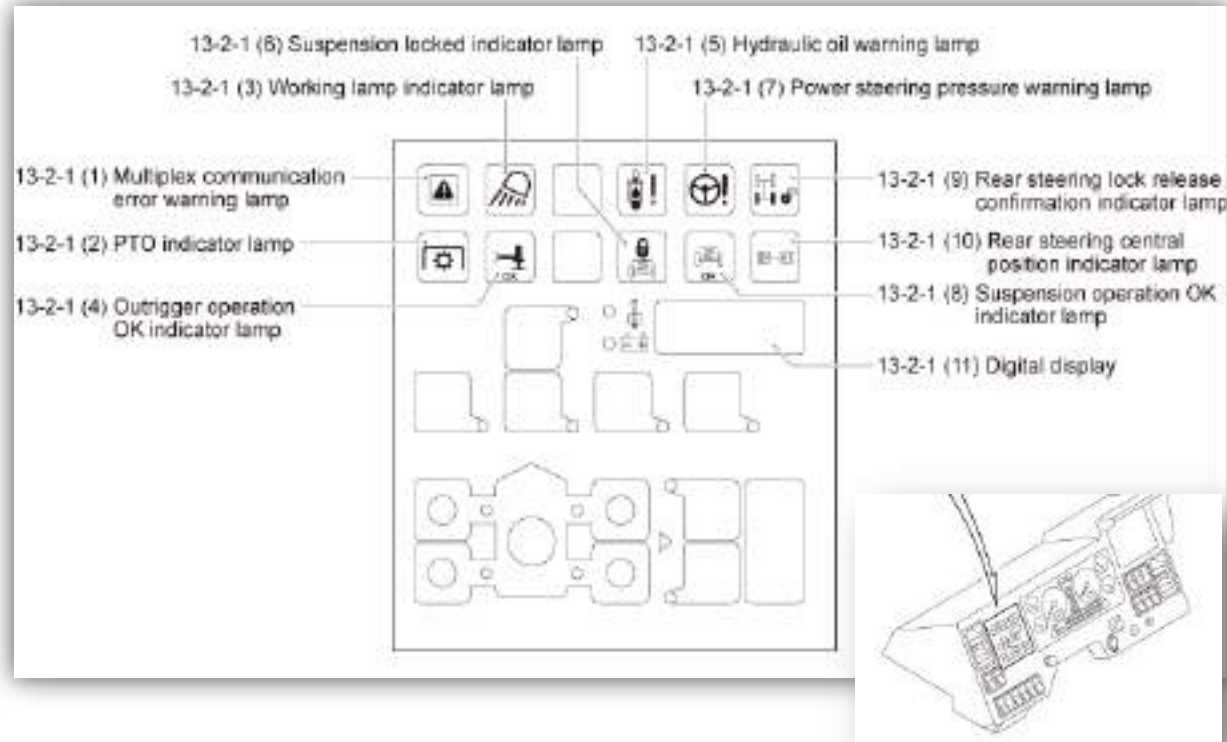


SAFETY OPERATION

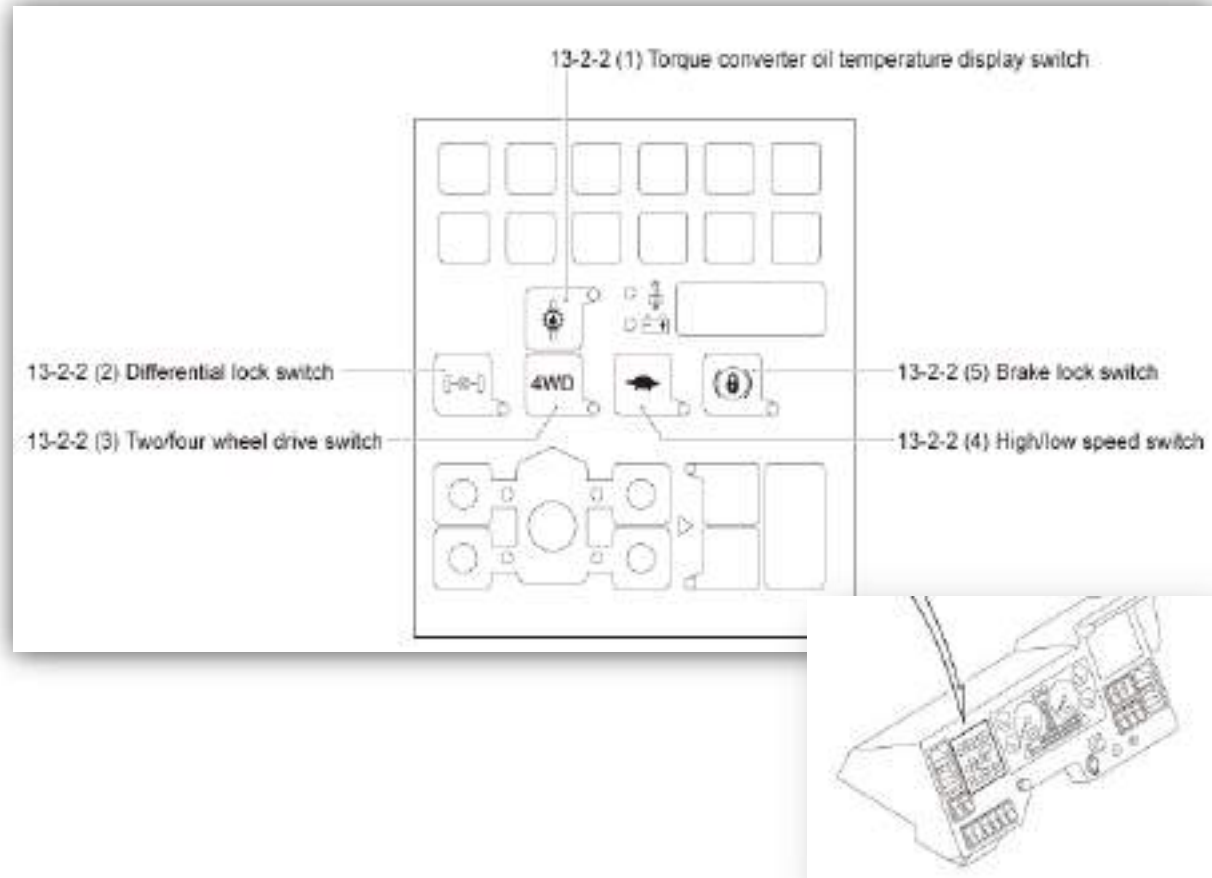


3. OPERATION

LEFT CONTROL PANEL



LEFT CONTROL PANEL



LEFT CONTROL PANEL



Outriggers individual selection switch

Horizontal Selection indicator

Horizontal/ Vertical Selection switches

Extension/ retraction selection switches

Vertical Selection indicator

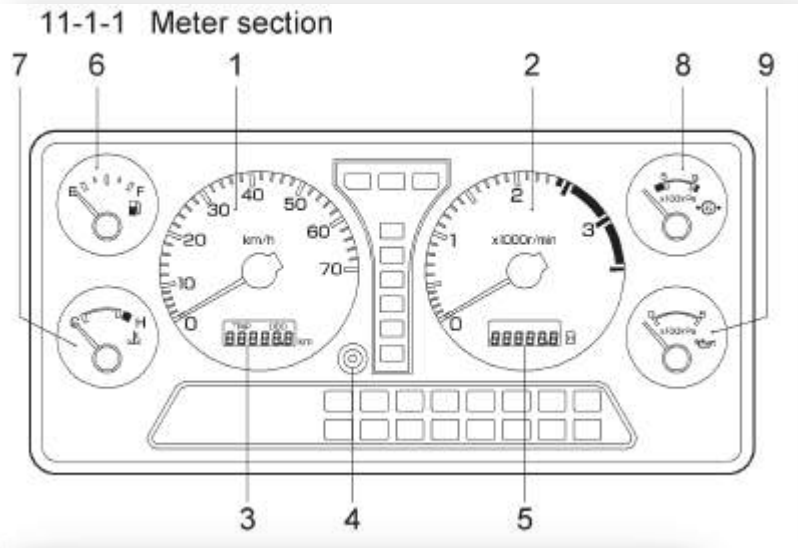
All 4 outriggers selection switch

LEFT CONTROL PANEL



1. Suspension lock/release switch
2. Suspension retraction switch
3. Rear steering lock/release switch
4. Parking brake switch
5. Revolving warning lamp switch (optional)

MIDDLE CONTROL PANEL

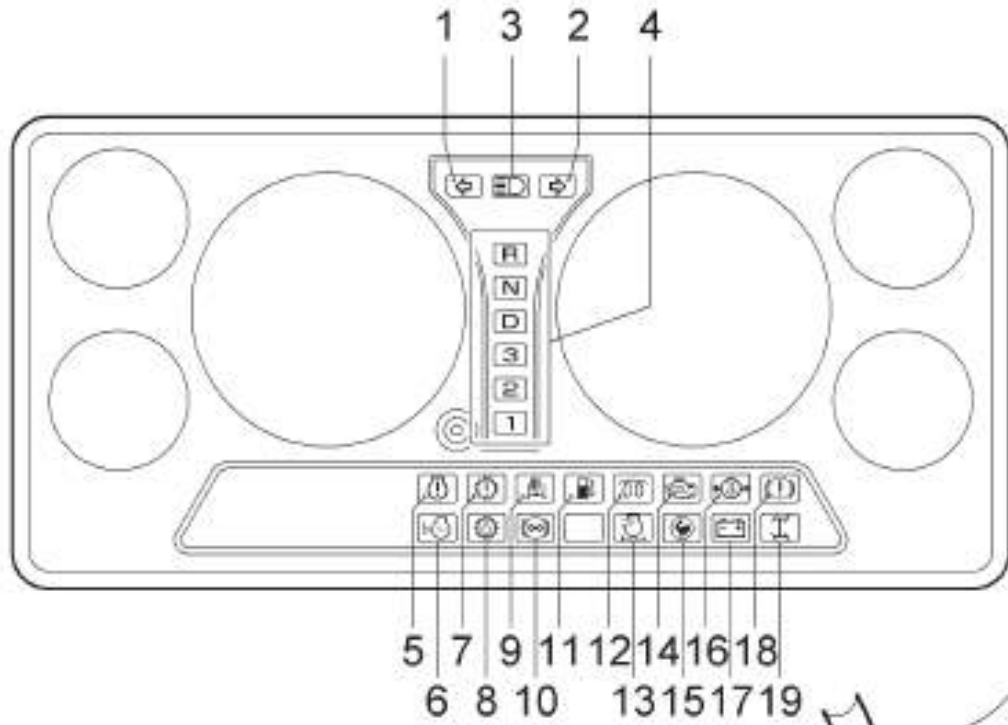


11-1-1 Meter section

1. Speedometer
2. Tachometer
3. Odometer/trip meter
4. Odometer/trip meter switch
5. Hour meter
6. Fuel gauge
7. Engine water temperature gauge
8. Air pressure gauge
9. Engine oil pressure gauge

MIDDLE CONTROL PANEL

11-1-2 Indicator section



11-1-2 Indicator section

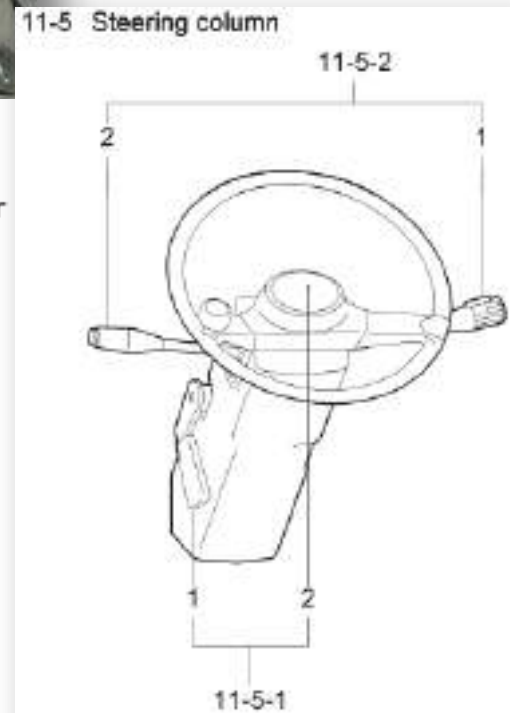
1. Turn signal indicator lamp (left)
2. Turn signal indicator lamp (right)
3. High beam indicator lamp
4. Shift position indicator lamp
5. Engine trouble warning lamp
6. Radiator coolant level warning lamp
7. AT/M (automatic transmission) malfunction warning lamp
8. Torque converter trouble warning lamp
9. Exhaust brake indicator lamp
10. Retarder indicator lamp
11. Fuel level warning lamp
12. Preheat indicator lamp
13. Air cleaner blockage warning indicator lamp
14. Engine control warning lamp
15. Overrun warning lamp
16. Low air pressure warning lamp
17. Battery charge indicator lamp
18. Parking brake/brake fluid level warning lamp
19. Rear steering lock release indicator lamp



MIDDLE CONTROL PANEL



- 11-5 Steering column
- 11-5-1 Steering wheel
 - 1. Height and angle adjustment lock lever
 - 2. Horn switch
- 11-5-2 Combination switch
 - 1. Combination switch
 - Windscreen wiper switch
 - Windscreen washer switch
 - Exhaust brake lever
 - 2. Turn signal and dimmer switch
 - Turn signal switch
 - Lighting switch
 - Dimmer switch



RIGHT CONTROL PANEL



- 1. Lighter
- 2. Hand Throttle Knob
- 3. Starter Switch
- 4. ACS Emergency Switch (Self Reset)
- 5. Aux Winch Switch
- 6. Main Winch Switch
- 7. PTO Switch
- 8. Slewing Brake Switch
- 9. Crane Operation Switch

RIGHT CONTROL PANEL

ACS DISPLAY

PANJANG BOOM LOAD LIMIT

TANGGAL & WAKTU

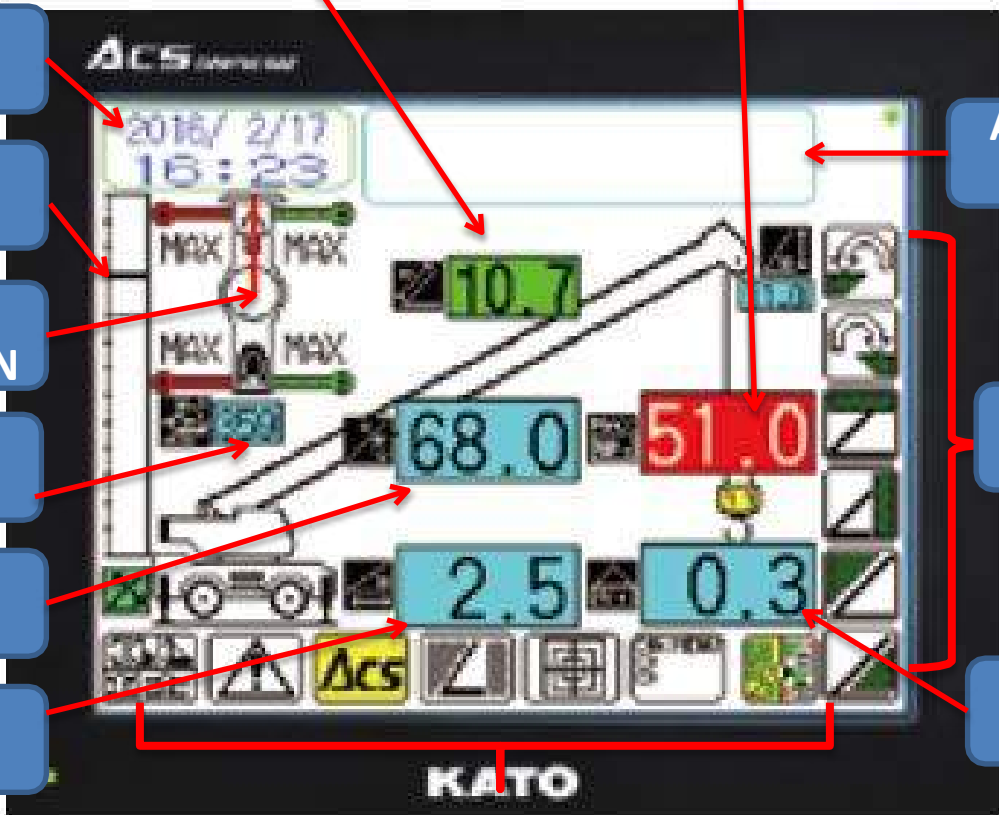
LOAD GRAFIK (BAR)

STATUS OUTRIGGER
& SLEWING POSITION

SUDUT SLEWING

SUDUT BOOM

WORKING RADIUS



AUTO STOP DISPLAY
& WARNING ICON

WORKING RANGE
LIMIT (SET/CANCEL)

CURRENT LOAD

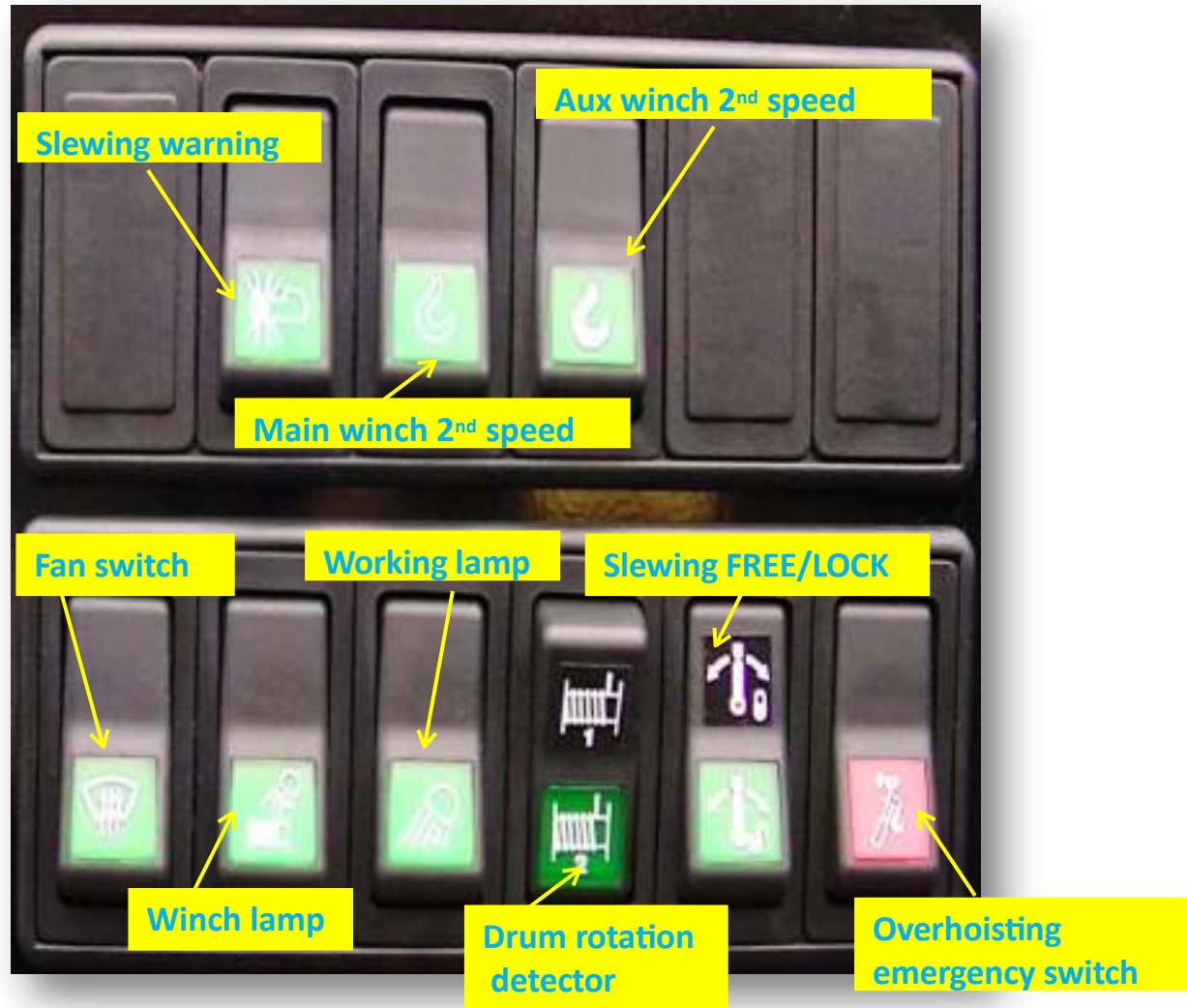
MENU

RIGHT CONTROL PANEL

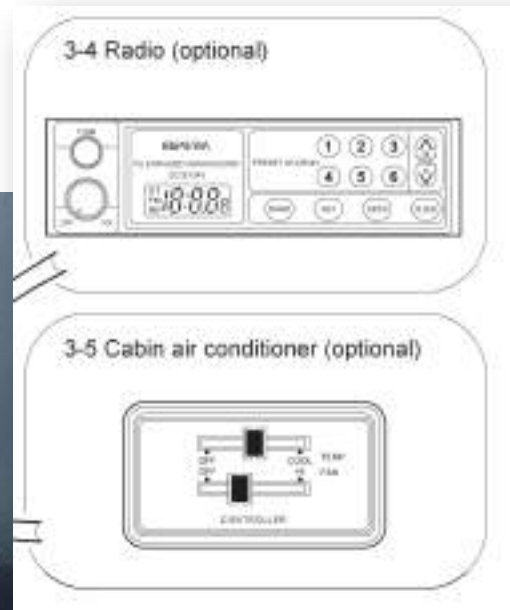


1. Transmission Lever
2. Level Gauge
3. Directional Rear Steering

SIDE CONTROL PANEL



SIDE CONTROL PANEL



ACS EMERGENCY SWITCH



ACS emergency switch

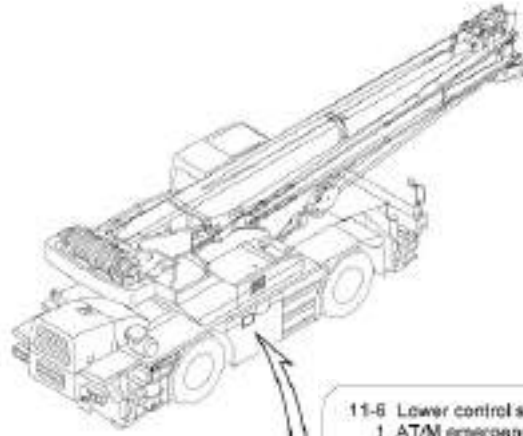


ACS bridge switch

- Reduce the speed for all operation.
- Load rate is limited till 110%.

- Reduce the speed for all operation.
- Sound the buzzer and rotate the red indicator lamp.
- No limitation for load rate.

OUTSIDE THE CABIN



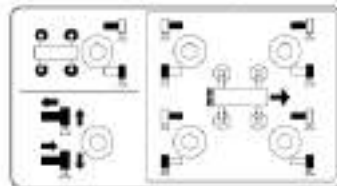
- 15-4 Lower control switch panel
 1. Outrigger control panel
 2. Outrigger emergency switch (self-reset type)

2. Outrigger emergency switch



Outrigger emergency switch

1. Outrigger control panel



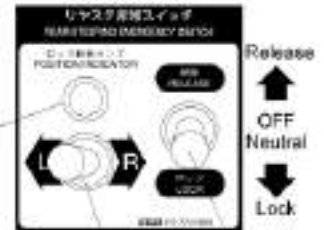
- 11-6 Lower control switches
 1. AT/M emergency switch
 2. Rear steering emergency switch

1. AT/M emergency switch



AT/M emergency switch

2. Rear steering emergency switch

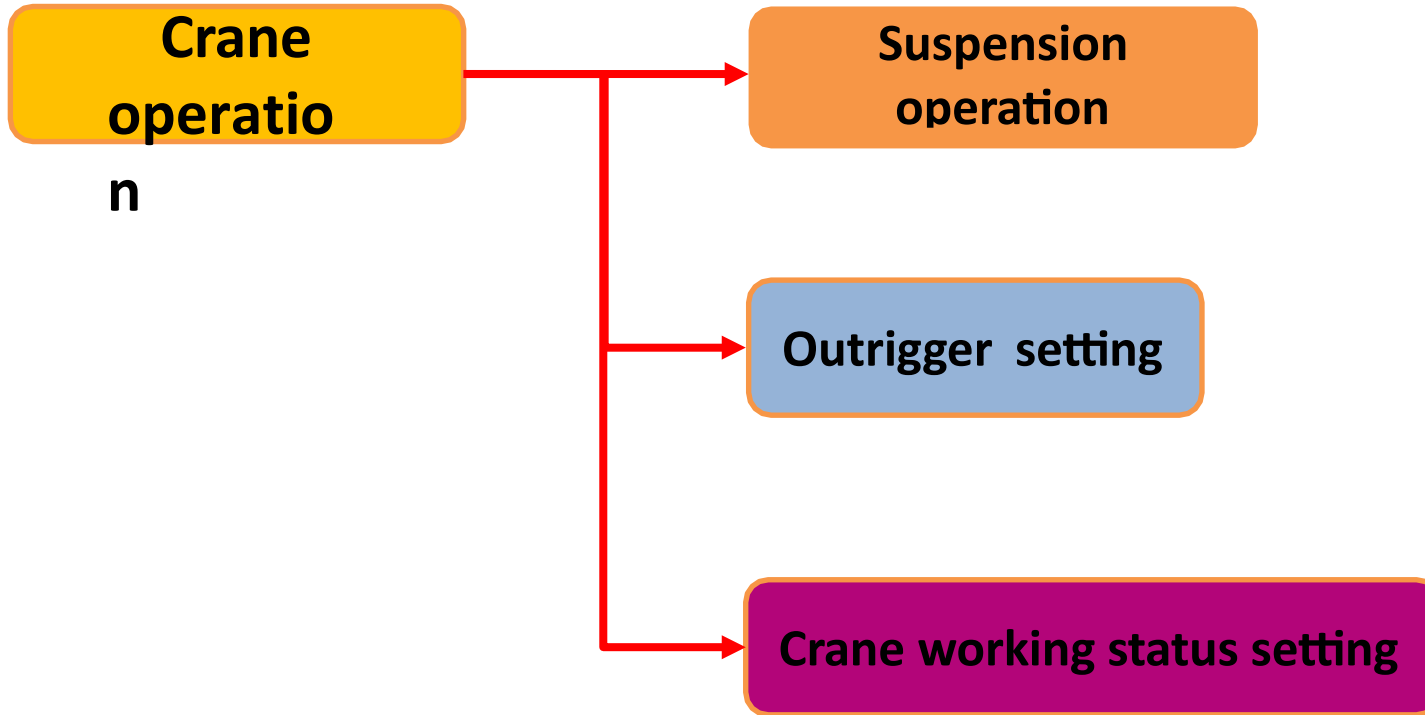


Rear steering locked lamp

Rear steering switch

Rear steering emergency switch

OPERATION



Suspension operation

Operation conditions

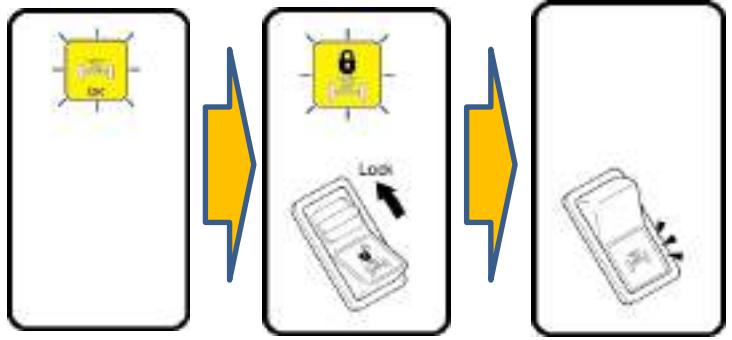
- Boom: Fully retracted, under 50 degrees
- Slewing upper structure: Within -5° ~ +5° (front or rear facing)
- PTO switch: OFF position
- Shift lever : N position



Suspension operation OK indicator lamp lit

Suspension switch

Suspension locked indicator lamp lit



Suspension Retraction

**Outrigger
setting**

**PTO switch: Switch to ON
position**



**Outrigger operation OK
indicator lamp lit**



Outrigger setting

COR switch panel

Outriggers individual selection switch

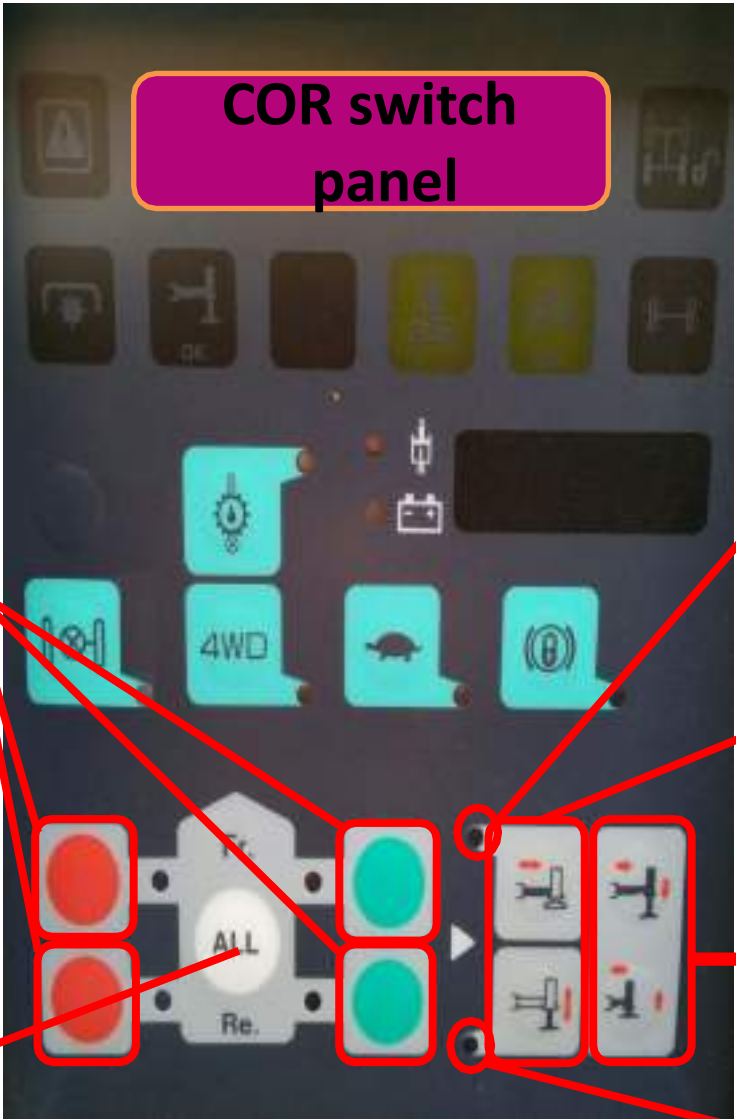
Horizontal Selection indicator

Horizontal/ Vertical Selection switches

All 4 outriggers selection switch

Extension/ retraction selection switches

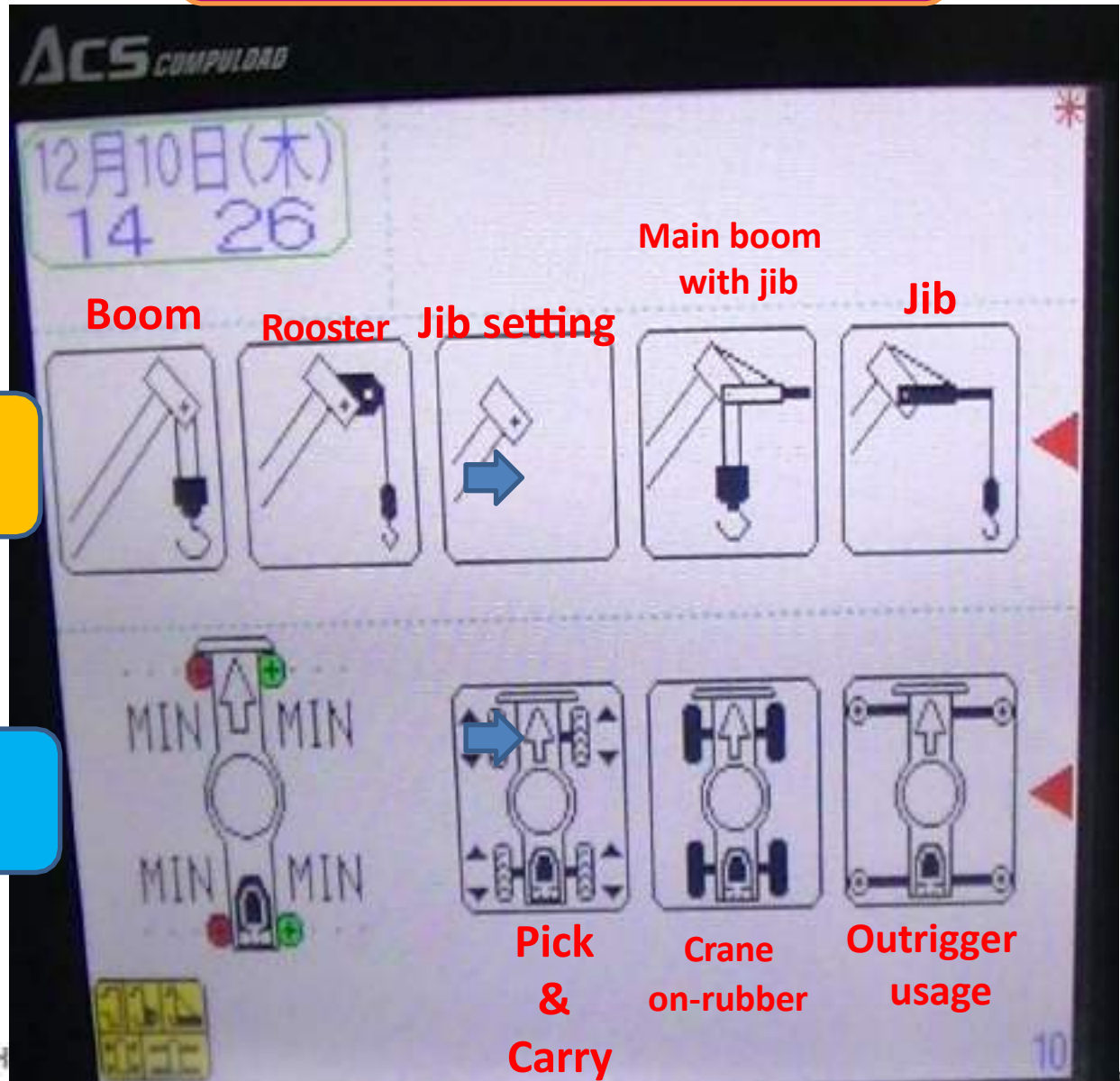
Vertical Selection indicator



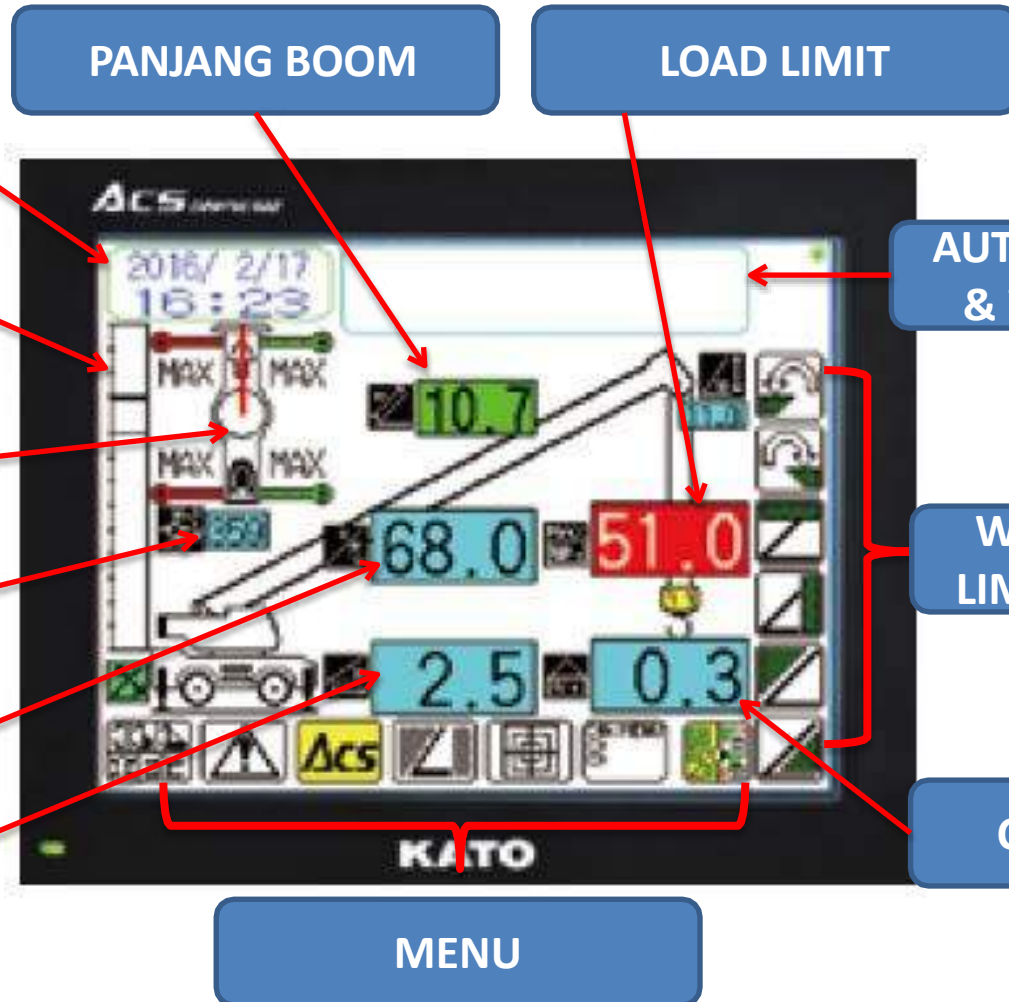
Crane working status setting

Boom
status
selection

Outrigger
status



ACS DISPLAY



PANJANG BOOM

LOAD LIMIT

TANGGAL & WAKTU

AUTO STOP DISPLAY & WARNING ICON

LOAD GRAFIK (BAR)

STATUS OUTRIGGER & SLEWING POSITION

WORKING RANGE LIMIT (SET/CANCEL)

SUDUT SLEWING

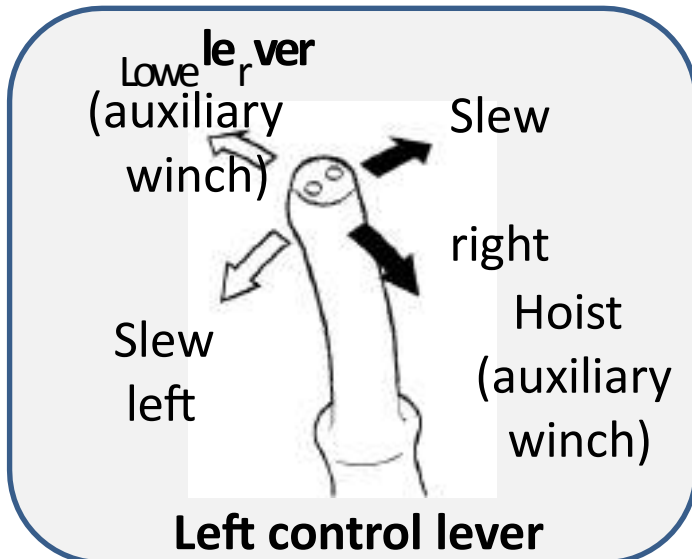
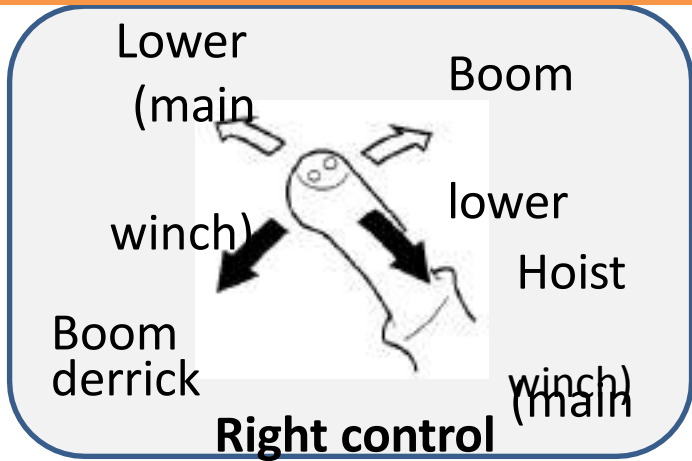
SUDUT BOOM

WORKING RADIUS

CURRENT LOAD

MENU

Various crane operations



⚠ When you leave the cabin, you must unlock the lever for safety.

Various crane operations

Boom extension/retraction pedal



Extending: depressing pedal forward

Retracting: depressing pedal backward

Carrier driving operation

General driving

Specialized driving

PTO

OFF

Release

Suspension lock

Release

**Parking break
Shift selection**

**Rearing steering
selection**

**High/low range
selection**

**2/4 wheel drive
selection**

**Differentia
l lock**

General driving



Suspension lock/release switch

Specialized driving

Rear steering lock/release switch

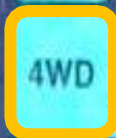


Suspension lock/release switch



Specialized driving

Differential lock switch



High/low speed switch

2/4 wheel drive switch



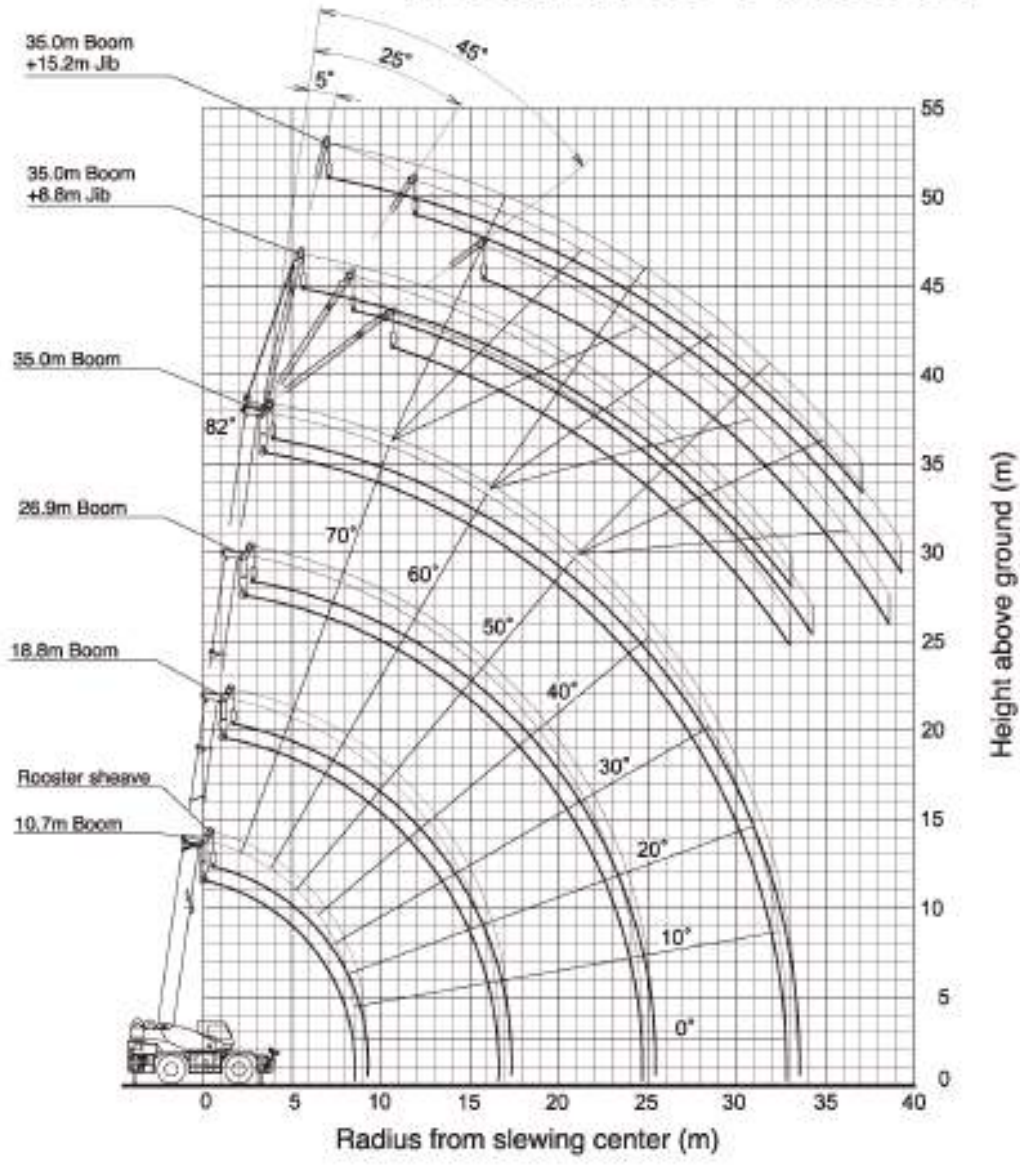
Apply differential lock by this switch. In 2 wheel mode, just front differential gear is locked. In 4 wheel mode, both differential gear for front and rear are locked. It is also used for rough/muddy road driving.

When differential lock has been selected, steering is prohibited to use for protection of differential gear!!

Change high or low range by this switch. When low range has been selected, vehicle speed will be reduced around half, and automatically applied 4 wheel drive. It is also used for rough/muddy road driving.

Change 2 or 4 wheel by this switch. It is used for rough/muddy road driving.

WORKING RANGE



KATO SR-500L LIFTING CAPACITIES (1) when outriggers are used

Based on ISO 4305

Not exceed 75% of static tipping loads

(Unit: Metric ton)

Working radius (m)	Outriggers fully extended (7.0m) - 360° full range				Outriggers intermediately extended (6.5m) - over side				Outriggers intermediately extended (5.0m) - over side				Outriggers completely retracted (2.48m) - over side				Working radius (m)
	10.7m Boom	18.8m Boom	26.9m Boom	35.0m Boom	10.7m Boom	18.8m Boom	26.9m Boom	35.0m Boom	10.7m Boom	18.8m Boom	26.9m Boom	35.0m Boom	10.7m Boom	18.8m Boom	26.9m Boom	35.0m Boom	
2.5	51.00*				51.00*				51.00*				28.40				2.5
3.0	49.10*	22.00			49.10*	22.00			49.10*	22.00			19.80				3.0
3.5	45.50*	22.00			45.50*	22.00			45.50*	22.00			14.90	15.50			3.5
4.0	42.00*	22.00	19.00		42.00*	22.00	19.00		41.25*	22.00	19.00		11.75	12.70	10.20		4.0
4.5	37.10*	22.00	19.00		37.10*	22.00	19.00		30.50	22.00	19.00		9.55	10.40	8.90		4.5
5.0	32.40	22.00	19.00	12.00	32.40	22.00	19.00	12.00	23.95	22.00	19.00	12.00	7.90	8.75	7.85	8.90	5.0
5.5	28.60	22.00	18.65	12.00	28.60	22.00	18.65	12.00	19.55	20.65	18.65	12.00	6.70	7.45	6.95	6.15	5.5
6.0	25.60	22.00	18.35	12.00	25.60	22.00	18.35	12.00	16.40	17.40	17.15	12.00	5.70	6.40	6.20	5.50	6.0
6.5	23.10	22.00	17.35	12.00	22.55	22.00	17.35	12.00	14.00	14.95	15.25	12.00	4.90	5.55	5.50	4.95	6.5
7.0	21.00	22.00	16.40	12.00	19.20	20.25	16.40	12.00	12.15	13.00	13.30	12.00	4.25	4.90	4.95	4.45	7.0
7.5	19.30	20.25	15.60	12.00	16.65	17.60	15.60	12.00	10.65	11.45	11.75	11.50	3.70	4.30	4.45	4.00	7.5
8.0	16.95	17.85	14.80	12.00	14.65	15.50	14.80	12.00	9.45	10.20	10.50	10.50	3.20	3.80	4.00	3.65	8.0
9.0		14.25	13.50	11.10		12.40	12.70	11.10		8.25	8.55	8.60		3.00	3.20	2.95	9.0
10.0		11.75	12.10	10.10		10.20	10.50	10.10		6.85	7.10	7.15		2.40	2.60	2.40	10.0
11.0		9.90	10.20	9.30		8.60	8.85	8.90		5.75	6.00	6.05		1.85	2.10	1.95	11.0
12.0		8.45	8.75	8.50		7.50	7.55	7.65		4.90	5.10	5.20		1.40	1.65	1.60	12.0
13.0		7.30	7.60	7.60		6.30	6.55	6.65		4.20	4.40	4.45		1.05	1.25	1.25	13.0
14.0		6.40	6.65	6.75		5.50	5.75	5.80		3.60	3.80	3.90		0.75	0.95		14.0
15.0		5.65	5.90	6.00		4.85	5.05	5.10		3.10	3.35	3.40					15.0
16.0		5.00	5.25	5.35		4.30	4.45	4.55		2.70	2.90	2.95					16.0
17.0			4.65	4.75			4.00	4.05			2.50	2.55					17.0
18.0			4.20	4.30			3.55	3.60			2.15	2.25					18.0
19.0			3.75	3.85			3.20	3.25			1.85	1.95					19.0
20.0			3.35	3.45			2.85	2.90			1.60	1.70					20.0
22.0			2.70	2.80			2.25	2.30			1.20	1.25					22.0
24.0			2.20	2.25			1.80	1.85			0.85	0.90					24.0
26.0				1.80				1.45									26.0
28.0				1.45				1.15									28.0
30.0				1.15				0.85									30.0
32.0				0.90				0.65									32.0
Critical boom angle	---	---	---	---	---	---	---	---	---	---	---	40°	---	30°	52°	65°	Critical boom angle
Standard hook	For 51 ton* (For 34 ton)	For 34 ton			For 51 ton* (For 34 ton)	For 34 ton			For 51 ton* (For 34 ton)	For 34 ton			For 34 ton				Standard hook
Hook mass	400kg/900kg	300kg			400kg/900kg	300kg			400kg/900kg	300kg			300kg				Hook mass
Parts of line	11*7	6	4	4	11*7	6	4	4	11*7	6	4	4	7	6	4	4	Parts of line

KATO 711-75101000

Reliable Heavy Equipment Solutions

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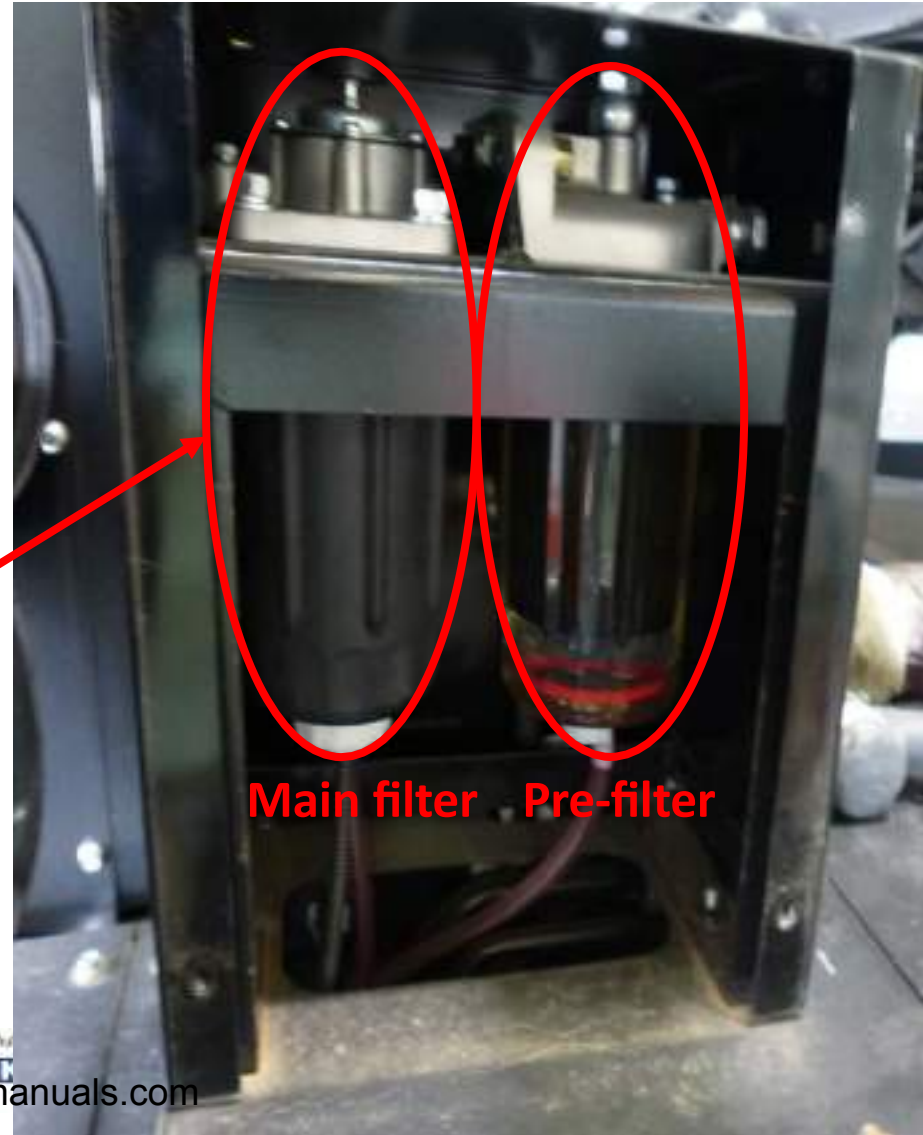
4. MAINTENANCE

Engine

Replacement interval

- Main fuel filter Every 500 hrs

- Pre fuel filter Every 1000 hrs



Engine oil & filter

Replacement interval

- Engine oil SAE 15W-40 Every 250hrs
- Capacity = 15 L
- Engine oil filter element Every 500hrs



Air cleaner element

Cleaning interval

- Outer element
Every 250hrs or as required

Replacement interval

- Outer & inner
element Every 1000 hrs



Torque converter oil & filter element

Replacement interval

- T/C oil ATF Dextron II
Every 10,000km or yearly
- Capacity = 25 L
- T/C oil filter element
Every 10,000km or yearly



Steering oil filter element

Replacement interval
Every 1000hrs or yearly



Hydraulic oil

Replacement interval

- Return filter

Every 2,000 hours

- Hydraulic oil ISO VG 68 Every 2,000hrs or 2 year

Capacity = 560 L



Spin filter cartridge

Replacement interval
Every 2,000hrs



SAE 90 GL – 4 for:

- Slewing Reduction Gear

Every 10,000 KM or 1,000 hrs Capacity 5 L

- Winch Reduction Gear

Every 10,000 KM or 1,000 hrs Capacity 2,7 L

SAE 90 GL – 5 for:

- Differential Gear

Every 10,000 KM or 1,000 hrs

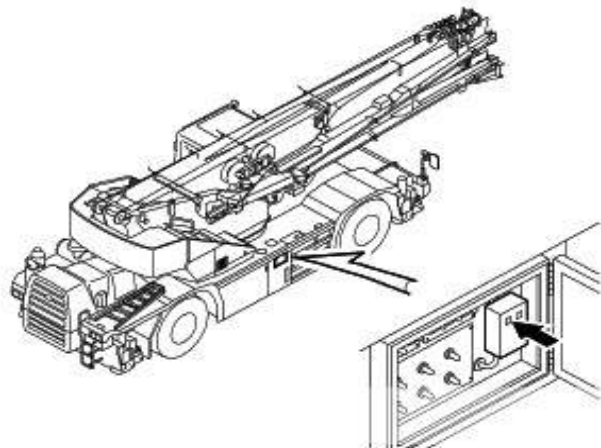
Capacity 20,5 L

- Planetary Reduction Gear /Final

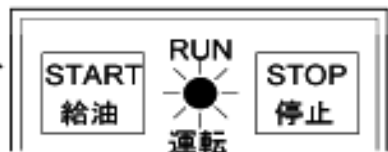
Drive Every 10,000 KM or 1,000 hrs

Capacity 4 x @2,8 L

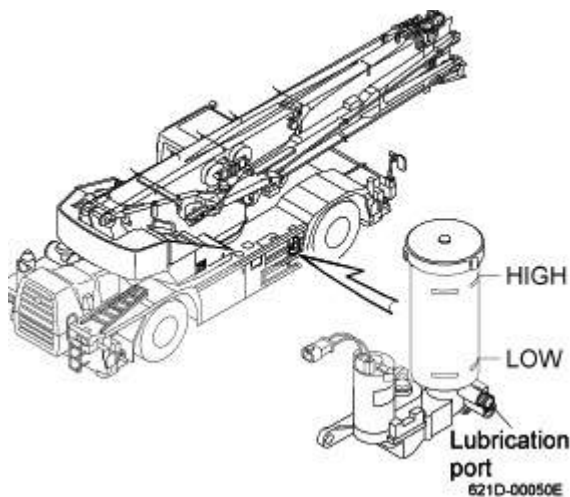
AUTO GREASER



621D-00040



611D-00620



621D-00050E

- (1) Turn the starter switch to ON and press START button.
- (2) The grease pump runs for about 60 seconds while the RUN indicator is lit.
- (3) When the autogreasing completes, the RUN indicator will go off.
Make sure that the indicator has gone off.

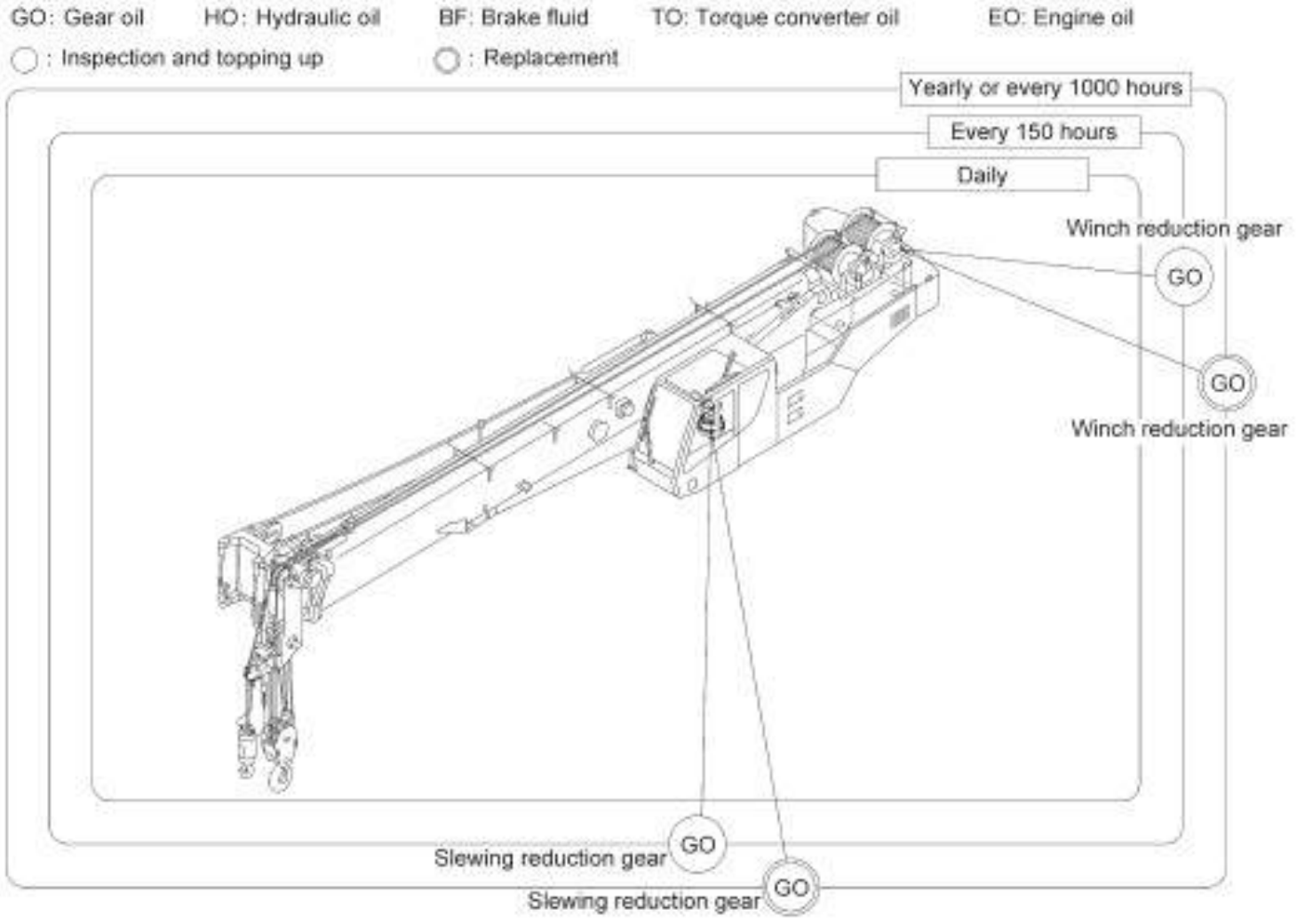
4-4-1 Greasing by autogreaser (T217691-006-0E)

Autogrease the following locations using an autogreaser.

- Axle kingpins, top and bottom (Both in the front and rear)
- Steering cylinder pins, right and left (Both in the front and rear)
- Leaf spring pins (Both in the front and rear)
- Leaf spring sliders (Both in the front and rear)
- Suspension lock cylinder pins, top and bottom (Both in the front and rear)

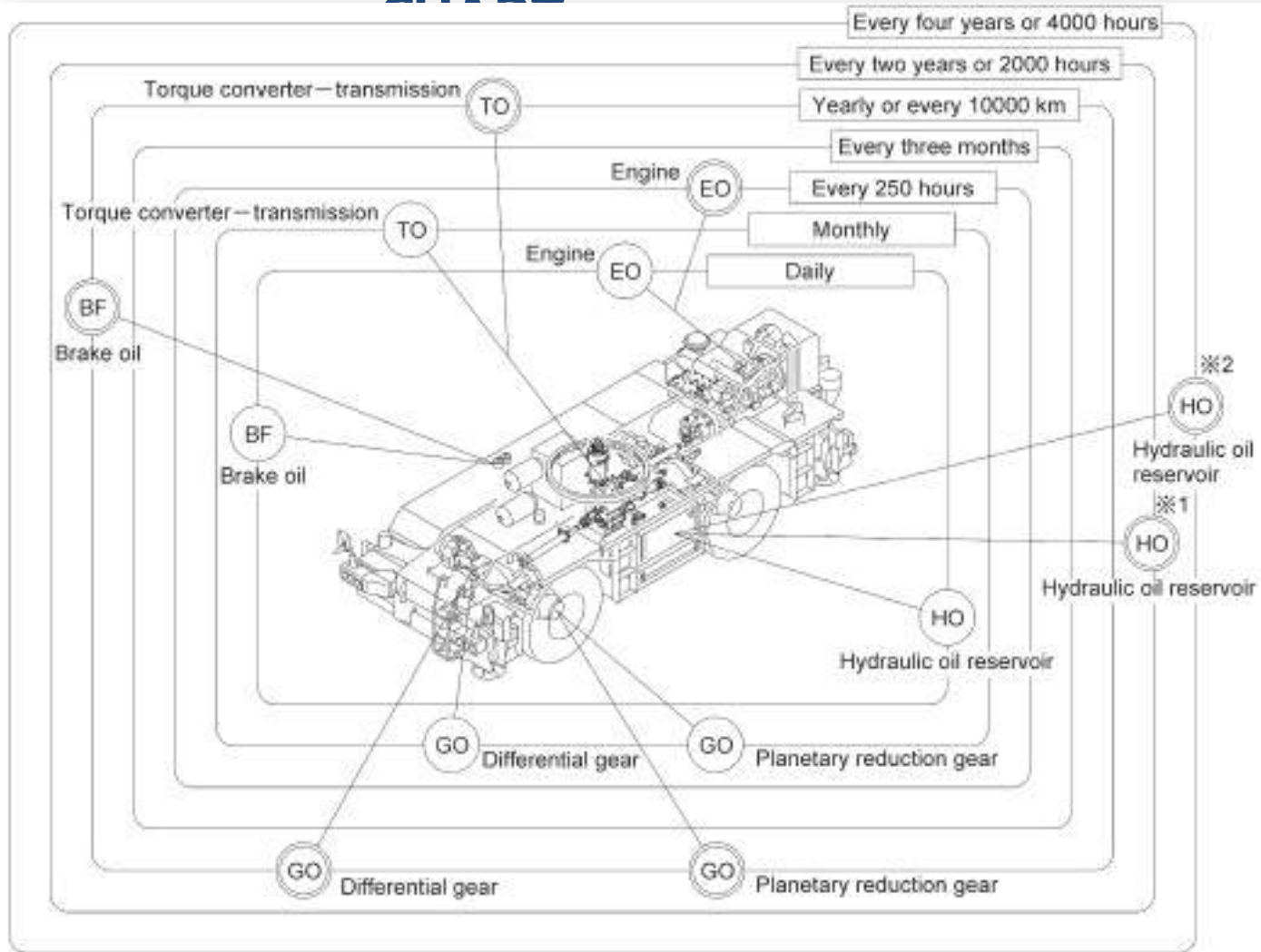
Be sure to grease with the autogreaser once every day before running.

OILING CHART



OILING

CHART

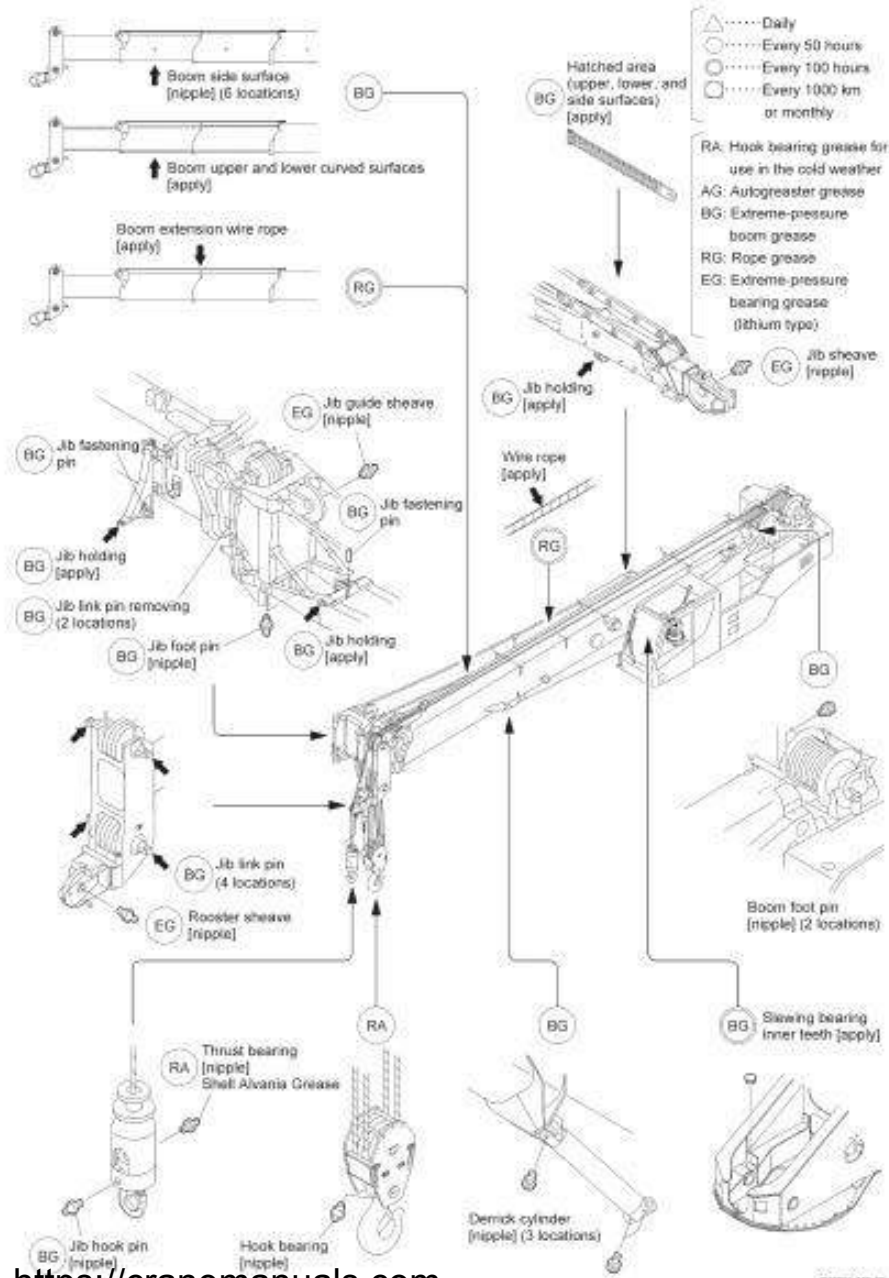


※1 KATO's recommended hydraulic oil: every 2,000 hours or every 2 years
 ※2 KATO's designated hydraulic oil: every 4,000 hours or every 4 years

Q217691-009-06

GREASING CHART

4-4 Greasing chart (S41D-0013-16)



TERIMA KASIH