# **R210W-9SMH**

# Material Handler Service Instruction Manual & Parts Manual

# INTRODUCTION

Thank you for purchasing our HYUNDAI hydraulic material handler product.

The 'Material Handler' for wheel excavator is developed for scrap and bulk material handling equipped with a grapple, clamshell bucket or magnets. Hydraulic Elevating Cabin is also intended to improve working area visibility.

HYUNDAI Two-piece Material Handler offers exceptional lift performance and range of operation.

The purpose of this instruction manual is to provide the user with detailed information on how to operate, inspect, maintain and adjust 'Material Handler' and 'Elevating Cabin'.

Be sure to refer to this manual before operating the equipment and products for safe operation and maintenance of 'Material Handler' and 'Elevating Cabin'.

- 1. Be sure to refer to this instruction manual before operating the machine.
- 2. Check the environment of the workplace and follow the safety regulations to ensure safe operation.

If you have any questions about this manual, please contact us.

Model	R210W-9SMH	Remarks
Manufactured Year		

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**Parts Manual** 

#### **General Cautions**

# ▲ Safety notices in HYUNDAI instruction manuals follows ISO standard for safety warnings

- 1) 'A Danger' mark (red) indicates a hazardous situation which will result in death or serious injury, if it is not followed safety regulation.
- 2) 'A Warning' mark (orange) indicates a potentially hazardous situation which may result in death or serious injury, if it is not followed safety regulation.
- 3) 'A Caution' mark (yellow) indicates a potentially hazardous situation which may result in minor or moderate injury, if it is not followed safety regulation.
- 4) **Attention** mark (black) indicate a potentially risk situation which may result shortening lifespan of machine components, if it is not followed safety regulation.

#### Read this manual prior to operation

#### 1. Basic Precautions

Check and gain full knowledge of safety labels in this Manual and on the equipment. Material handler equipment must be maintained in standard state at all times, and no alteration is allowed. If safety is not secured, operational performance and durability of the equipment will gradually decrease. Pay particular attention to safety over any other contents presented in this Manual.

#### **Prohibition of remodeling**

Remodeling the equipment without discussing with our company can cause serious safety risks, and the equipment owner is responsible. Please discuss with our company if you would like to remodel the equipment.

#### Safe clothing

Appropriate safety clothing such as helmet are required during work. Inappropriate attire and accessories can induce unintended operation of the lever or other operating units. If the operator loses focus, a serious accident can occur. To keep safety, prohibit the use of radio or headset.

#### **Caution for attachments**

Make sure to contact our company before attaching special attachments to the equipment. Do not use attachments that have not been approved by our company. We are not held responsible for accidents and failures caused by the use of unapproved attachments.

#### Caution for handling oil

Oil is very dangerous because of flammability. Since there is a concern for ignition nearby firearms, be extremely careful when handling oil. Keep the equipment clean by removing foreign substance and grease.

#### Securing working ground condition

Operator or service personnel should check working ground condition in advance before locating the equipment to prevent rollover accidents, operate equipment on a flat ground after securing safe place.

#### Keep limited lifting weight spec range

Operate equipment within the operating weight spec range otherwise it may cause serious accident such as rollover of equipment or human injury due to overweight effect.

Lifting capacities are based on the machine and the load both remaining level at all times. Never exceed the limited lifting spec stated in this instruction manual

#### **Operating speed**

Operate equipment as slowly as possible for safe operation. Quick movement of front attachment may lead object falling down or rollover accident.

#### Precaution for inspection and maintenance of hydraulic parts

Stop the equipment on a flat and solid ground. Put attachments down on the ground and stop the engine. Do not perform maintenance immediately after work. Wait until the entire equipment is completely cooled down. If the equipment is still hot and hydraulic parts have residual pressure, the user can be seriously injured by spurting of hot operating oil. Residual pressure inside the operating oil tank must be removed before performing maintenance on hydraulic parts. Operate the working lever in the operating room many times to remove pressure remaining in the hydraulic circuit. Keep body parts and face away from the workplace when loosening plugs and screws on the hydraulic line.

#### Warning sign during inspection and maintenance

To prevent persons other than the maintenance worker from moving the equipment during inspection or maintenance, hang a warning sign for "Under maintenance" or "Inspection in process" in the operating room or on the work lever.

Use appropriate tools.

Stop the engine to conduct inspection or maintenance on the equipment.

#### Keep the equipment clean.

Water can cause malfunctioning of electric devices.

Do not touch moving parts of the equipment with hands.

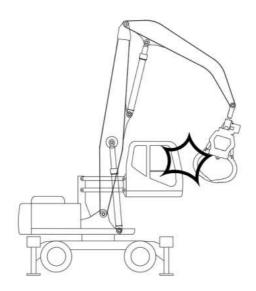
Be careful about high pressure of operating oil in the hydraulic circuit.

#### 1-2. Precautions for front Attachment Operation

### 'A Danger'

#### Need to be careful when operating elevating cabin or front attachment

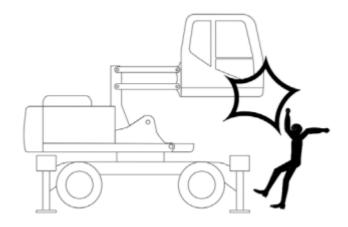
Please be sure to keep safe operating position when operating front attachment or elevating cabin otherwise it may lead serious personal injury or death from a crash.



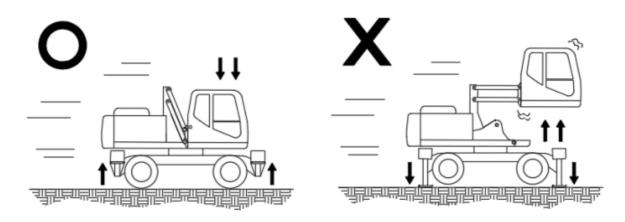
# **A** Danger'

#### Need to be careful when operating elevating cabin to downward position

Careless operation may lead serious personal injury or death from crash.

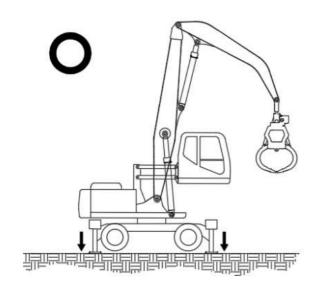


# 'A Danger' Only drive the machine in a state of elevating cabin down & outrigger up



# ' Warning'

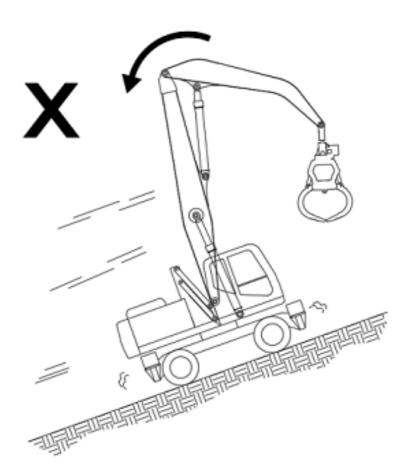
# Only work the machine as below condition



# ' Warning'

Need to be careful when driving

Do not drive machine on a slope. Machine may has a risk of falling over due to center of gravity change.



#### 1-3. Emergency Lowering of Elevating Cabin

#### Emergency condition;

When the engine is shut down condition, Hydraulic system will be deactivated because hydraulic pump would not discharge the required oil to the system. In this case, cabin is able to be lowered by using emergency switch.

Before lowering any equipment with the engine stopped, please check if there is any person around or underneath elevating cabin. To keep away any object or person from the elevating cabin before emergency cabin lowering operation.



**Emergency lowering switch** 



Please turn the Key-Switch to the ON position on the dashboard.

- 1) Sound a horn by using relevant joy stick button switch for any persons around outside cabin to take care of themselves if exist.
- 2) Push the emergency switch to lower the cabin In this condition, the hydraulic oil in the elevating cylinder will be returned to the tank passage by using the weight of cabin so that the cabin is to be able to be seated lower position safely.

#### 1-4. Safety pin

Safety pin will need to be used when repairing cabin elevating system. In any case of performing elevating system inspection & maintaining cabin elevating system, Please be sure safety pins are mounted on supporting hole properly.

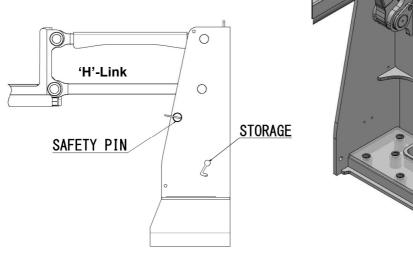
\*Elevated Height: 2.0m

# 'A Danger',

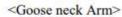
Please follow the safety instruction introduced as shown in the list below.

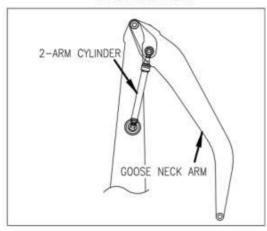
- -. Before starting any inspection or maintenance work, install a standing signboard near the work area for alert and warning for bystanders in advance.
- -. Safety pin has to be used when any maintenance or repair work is required only. (Please do not operate when the safety pin is installed condition.)
- -. Please always be sure to keep a distance between safety pin and 'H'-Link to prevent pin damage due to interference when inspecting work or maintenance work.
- -. If the 'H'-Link has any deformation then, please replace the 'H'-link for safe operation.
- -. Please note that the grapple function for open and close would not be operated at 'Work-mode' condition on the dashboard however, rotating function is able to be activated even in this condition. So, please be sure that it's required to be extremely careful not to operate this function.

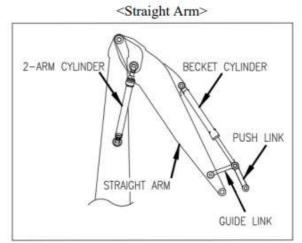
-. In any case when requiring elevating function after completing inspection or maintenance work then, deactivate 'Auto Idle' function by using relative button switch on cluster switch panel in the cabin.

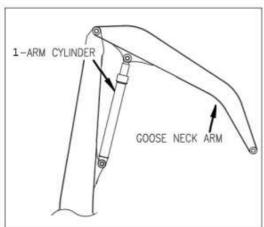


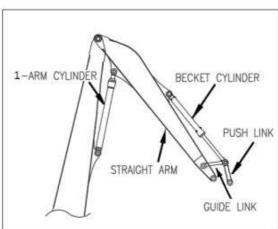
#### 2-1. The name of each part

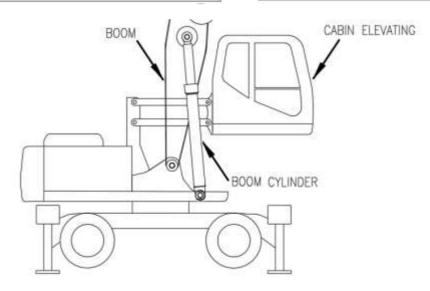






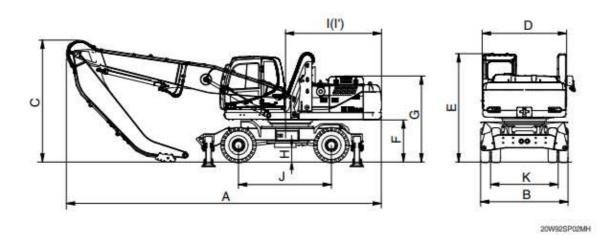






# 2-2. Specification

# · 6.5 m (21' 4") BOOM, 4.5 m (14' 9") ARM, 4 OUTRIGGER AND ELEVATING CAB



Description		Unit	Specification			
Operating weight		kg (lb)	25700 (56660)			
Overall length	А		9600 (31' 6")			
Overall width	В		2530 (8' 4")			
Overall height	С		3720 (12' 2")			
Upperstructure width	D		2530 (8' 4")			
Cab height	E		3240 (10' 8")			
Ground clearance of counterweight	F	(4:-)	1295 (4' 3")			
Engine cover height	G	mm (ft-in)	2565 (8' 5")			
Minimum ground clearance	Н		345 (1' 2")			
Rear-end distance	1		2768 (9' 1")			
Rear-end swing radius	ľ		2790 (9' 2")			
Wheel base	J		2800 (9' 2")			
Tread	К		1874 (6' 2")			
Torontorond	Low	(make (mak)	9.3 (5.8)			
Travel speed	High	km/hr (mph)	35 (21.7)			
Swing speed		rpm	10.3			
Gradeability		Degree (%)	31.5 (61)			
Max traction force		kgf (lbf)	11900 (26200)			

#### 2-3. Lifting capacity

(1) 6.5 m (21' 4") boom, 4.5 m (14' 9") arm, elevating cab riser and 4 outrigger down.

· Pating over-front · ₽ : Rating over-side or 360 degree

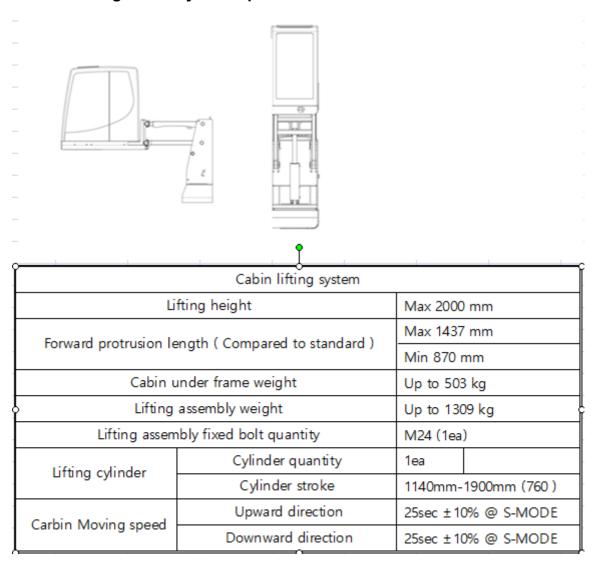
		Load radius					At	max, rea	ach							
Load		3.0 m	(9.8 ft)	4.5 m (	14.8 ft)	6.0 m (	19.7 ft)	7.5 m (	24.6 ft)	9.0 m (	29.5 ft)	10.5 m	(34.5 ft)	Cap	acity	Reach
height		b	₽	b	₽	Ů	<b>+</b>	Ů	₽	Ů	₽	ů	₽	Ů	<b>=</b>	m (ft)
12 m	kg													*7345	*7345	4.03
(39.4 ft)	lb					to		()						*16194	*16194	(13.23)
10.5 m	kg					*5199	*5199							*5066	*5066	6.7
(34.4 ft)	lb					*11463	*11463							*11168	*11168	(21.99)
9.0 m	kg					*4839	*4839	*4499	*4499					*4394	*4394	8.29
(29.5 ft)	lb					*10669	*10669	*9919	*9919					*9686	*9686	(27.19)
7.5 m	kg					*4841	*4841	*4420	*4420	*4106	3955			*4047	3681	9.37
(24.6 ft)	lb					*10672	*10672	*9744	*9744	*9052	8719			*8922	8116	(30.75)
6.0 m	kg					*5121	*5121	*4541	*4541	*4102	3935			*3827	3231	10.12
(19.7 ft)	lb					*11289	*11289	*10011	*10011	*9043	8674			*8437	7124	(33.19)
4.5 m	kg	*9382	*9382	*6942	*6942	*5624	*5624	*4788	*4788	*4195	3861	*3700	3015	*3665	2970	10.59
(14.8 ft)	lb	*20684	*20684	*15305	*15305	*12400	*12400	*10557	*10557	*9248	8511	*8157	6647	*8081	6547	(34.76)
3.0 m	kg			*8225	*8225	*6224	*6224	*5080	4930	*4312	3762	*3689	2975	*3528	2830	10.84
(9.80 ft)	lb			*18132	*18132	*13722	*13722	*11200	10870	*9507	8293	*8132	6560	*7778	6239	(35.57)
1.5 m	kg			*9193	*9193	*6705	6520	*5306	4749	*4380	3662	*3617	2931	*3390	2785	10.88
(4.90 ft)	lb			*20268	*20268	*14781	14375	*11698	10471	*9656	8073	*7975	6461	*7473	6140	(35.69)
Ground	kg	*3150	*3150	*9362	*9362	*6855	6280	*5351	4608	*4314	3583	*3387	2902	*3226	2830	10.7
Line	lb	*6945	*6945	*20641	*20641	*15113	13844	*11796	10159	*9511	7900	*7467	6397	*7111	6240	(35.11)
-1.5 m	kg	*4753	*4753	*8737	*8737	*6563	6157	*5110	4528	*4014	3544			*3001	2979	10.3
(-4.9 ft)	lb	*10480	*10480	*19263	*19263	*14468	13574	*11266	9983	*8848	7813			*6617	6568	(33.8)
-3.0 m	kg	*6437	*6437	*7453	*7453	*5773	*5773	*4477	*4477	*3310	*3310			*2660	*2660	9.65
(-9.60 ft)	lb	*14190	*14190	*16430	*16430	*12726	*12726	*9871	*9871	*7297	*7297			*5863	*5863	(31.67)

Note 1. Lifting capacity are based on SAE J1097 and ISO 10567.

- Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
- 3. The load point is the end pin point of front attachment.
- 4, \*indicates load limited by hydraulic capacity.

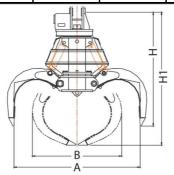
▲ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessory for non-standard configurations.

# 2-4. Elevating Cabin System Spec.



#### 3-6. Grapple Guide (MODEL: DMSG800)

	Operating		Closing	Max.	Closing	Opening	Overall	Excavator	
Description	Weight	Capacity	Force	Opening Width (A)	Width (B) Length (H)		Length (H1)	Class	
unit	kg	m3	ton	mm	mm	mm	mm	ton	
spec	1300	0.8	13	1800	1274	1617	1832	18~25	



#### 3. Operation Method

#### 3-1) Machine Operating Precautions

#### **Attention**

#### **Before starting work**

- Pay attention in a workplace where there is a concern for falling objects.
- Check proper operation of the equipment.
- Check leaking of operating oil, cooling water and engine oil.
- Check that the warning sign is lighted on the dashboard in the operator cabin.
- To prevent injury, close the operator cabin door or fragment protection device. Work piece can fly into the operating room during operation.
- Operate on the operator's seat. Do not operate until the equipment and accessories are placed in the proper position.
- Do not operate in poor conditions such as medication and drinking.

#### **During work**

- Remove any obstacles within the work scope.
- Do not perform dangerous operations presented in this Manual.
- Contact Hyundai Construction Equipment for remodeling of the equipment.

#### After work

- During maintenance and repair, guarantee stable working conditions and equipment.
- Inspect leaking of operating oil, cooling water and engine oil, as well as loosening of the hydraulic hose, bolts and nuts.
- Check the oil level of the operating oil tank.
- Clean the equipment and important parts.

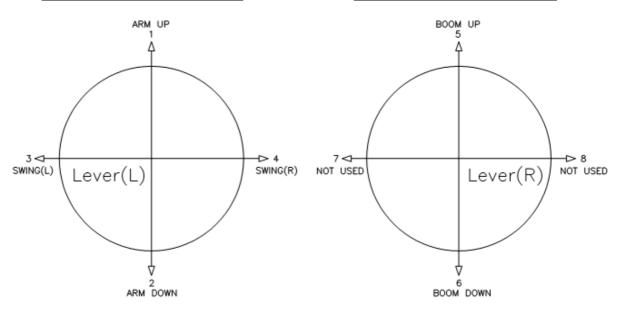
#### 3-2) Control lever and Joystick

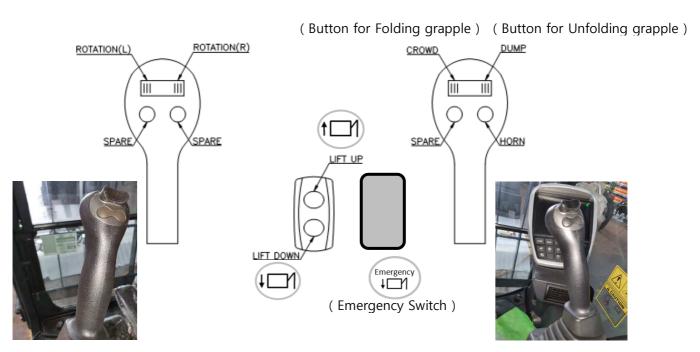
#### Joystick travel pedal (LH/RH side)



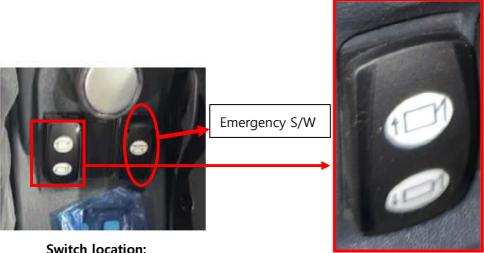
# Joystick Control Level (LH-side)

#### **Joystick Control Level (RH-side)**





#### 3-3) Elevating cabin operation



**Upward selection switch** 

Downward selection switch

**Switch location:** 

On the RH-Side of control console box

#### **Elevating operator cabin**

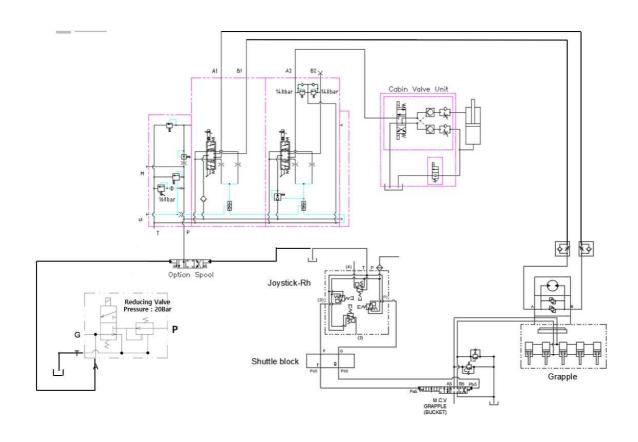
- 1) Close the door and fasten the seat belt.
- 2) Lock the pilot safety lever.
- 3) Start the engine.
- 4) Sound horn before elevating cabin operation to notify any people around the cabin if exist.
- 5) Press and hold cabin elevating switch.
- 6) When the station arrives intended height, release the elevating switch.

#### Lowering operator cabin

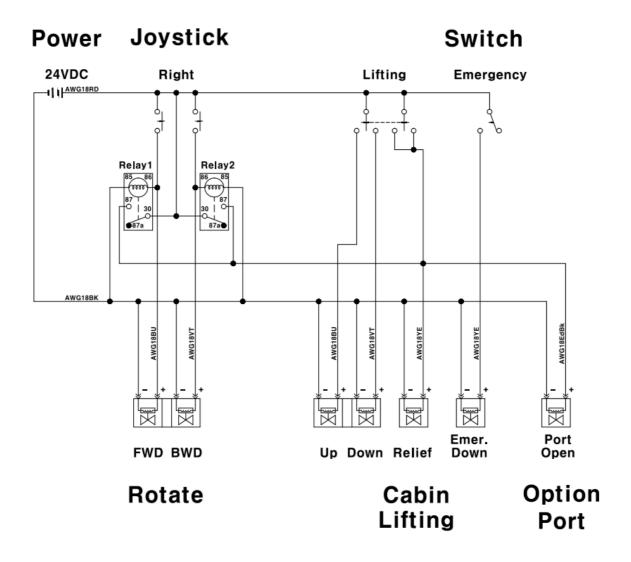
- 1) Close the door and fasten the seat belt.
- 2) Lock the pilot safety lever.
- 3) Sound horn before elevating cabin operation to notify any people around the cabin if exist.
- 4) Press and hold cabin elevating switch downward.
- 5) After lowering completed, release the elevating switch.

# 4. Circuit Diagram

# 4-1) Hydraulic Circuit Diagram



# 4-2) Electric Circuit Diagram



#### 5. Inspection and Maintenance

#### 5-1. General cautions

Inspection and maintenance help fully exhibit functions of the equipment and extend service life of the equipment. Pay particular attention to the following while operating the equipment.

- -. Are operating devices and meters functioning properly?
- -. Are there abnormalities in appearance, strange noise and heating?
- -. Are there loosened bolts and nuts?
- -. Have structures and parts been damaged, worn or disassembled?
- -. Is each part operating smoothly?

If an abnormality is discovered during operation or inspection, identify the cause and then perform maintenance work immediately. If the cause is unclear or there is a problem in the hydraulic unit, contact HYUNDAI CONSTRUCTION EQUIPMENT.

#### 5-2. Inspection Method

- -. Be especially careful about safety.
- -. Devise appropriate inspection and maintenance plans considering the conditions and environment of use for effective inspection and maintenance.
- -. Only use parts approved by our company.
- -. Do not allow water and moisture to infiltrate into electric parts.

#### Caution:

Malfunctioning of electric parts is related to safety.

Never disassemble electronic parts.

Remodeling and alteration of the equipment is strictly prohibited.

#### 5-3. Preparations before maintenance

Before starting maintenance work described in this Manual, stop the equipment as below for maintenance unless described otherwise.

- -. Place the equipment on a safe and flat place.
- -. Attach a "Do not start" tag to the work lever.
- -. Wear appropriate protective clothing when working on a dangerous task.
- -. Wear safety helmet, safety shoes, protective glasses, tight work trousers, ear protection, industrial gloves and breathing mask.

# 5-4. Periodic Inspection of Important Parts

Periodic inspection must be conducted to secure safety during work and operation.

enouic mapection	nodic inspection must be conducted to secure safety during work and operation.							
Inspection Points								
1) Injection of	f grease into each part							
2) Deformation	on, damaging and abnormal noise of each part							
3) Loosening	, loss and falling of bolts, nuts and stoppers							
4) Abrasion a	and damaging of pin, bush and pad							
5) Operating	status and oil leakage of hydraulic valve							
6) Oil leakage	e of hydraulic cylinder and deformation and damaging of rod							
7) Deformation	on of wood grapple structure							
8) Abrasion a	and damaging of grappler of wood grapple							

5-5. Types and Causes of Ordinary Troubles

Failure Type Cause of Failure						
	Temperature of operating oil fails to reach normal level.					
	RPM of the engine is too low.					
	Flow of operating oil is low.					
	There is an obstacle on the hydraulic line.					
Boor bydraulia	The cooling system, pump control system or pilot line is damaged.					
Poor hydraulic performance	Oil is leaking internally (control block, valve, power unit, etc.).					
periormance	The hydraulic hose is entangled or twisted.					
	The spool of the control valve is not opened maximally.					
	The relief valve is damaged or cannot be adjusted.					
	Internal oil leak occurs due to aging of the cylinder.					
	The hydraulic pump is damaged.					
	The cylinder rod is bent.					
	The piston is jammed.					
	The cylinder tube has partially increased inner diameter or flaw.					
Poor equipment	Air exists in the hydraulic line.					
power	Temperature of operating oil is too low.					
power	The valve spool is jammed or the spring is broken.					
	The pump or engine control system is damaged.					
	The power control valve is damaged.					
	Engine oil is insufficient or improper lubricant is used.					
Generation of	The bearing is damaged.					
abnormal noise	The gear tooth of the turning reducer is worn and broken.					
abiloillai iloise	The gear tooth of the driving reducer is worn and broken.					

#### 5-6. Greasing

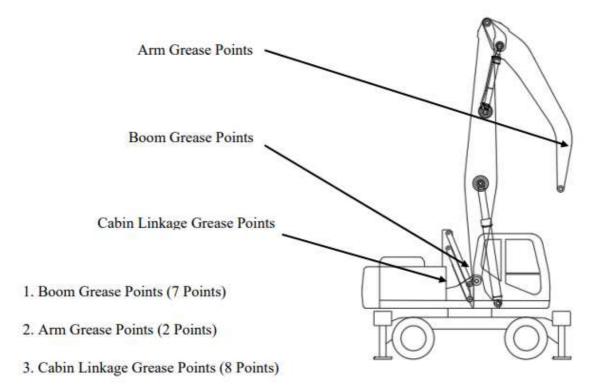
# 50 HOUR/WEEKLY SERVICE

- PERFORM ALL 10 HOUR/DALIY SERVICE CHECKS
- GREASE BOOM, ARM AND FRONT ATTACHMENT PINS

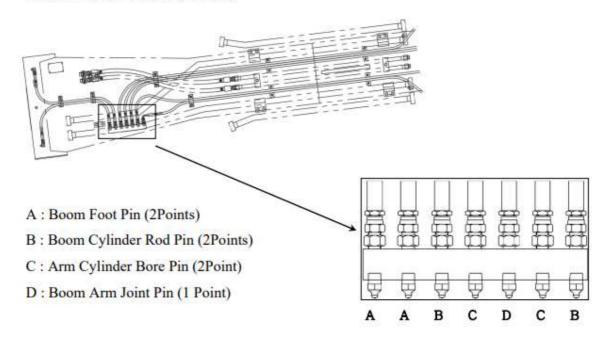
# Grease every 10 hours for first 100 hours and every 50 hours thereafter.

NOTE: If the equipment has been run in water, the front attachment should be greased on a 10 hour/Daily basis.

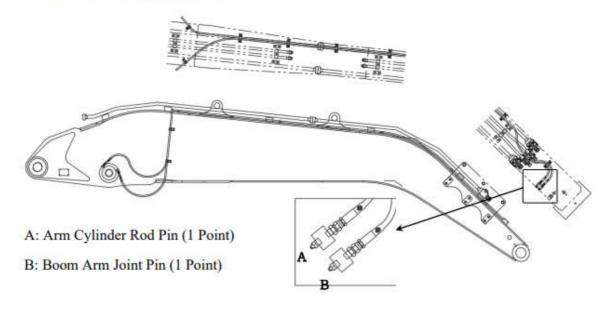
- Position machine as shown below and lower the front attachment on the ground and stop the engine
- Press the grease fitting and inject grease gun on the marked point
- After injection, clean off the old grease that has been purged



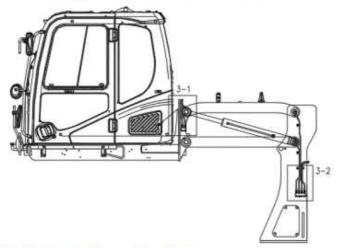
#### 1. Boom Grease Points (7 Points)



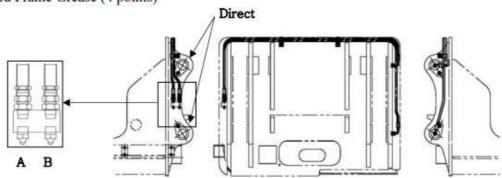
# 2. Arm Grease Points (2 Points)



# 3. Cabin Linkage Grease Points (8 Points)



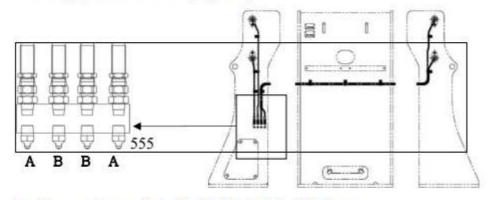
3-1. Bed Frame Grease (4 points)



A: Bed Frame & Cabin Link Joint Pin (1 Point)

B: Bed Frame & Guide Link Joint Pin (1 Point)

#### 3-2. Support Frame Grease (4 points)

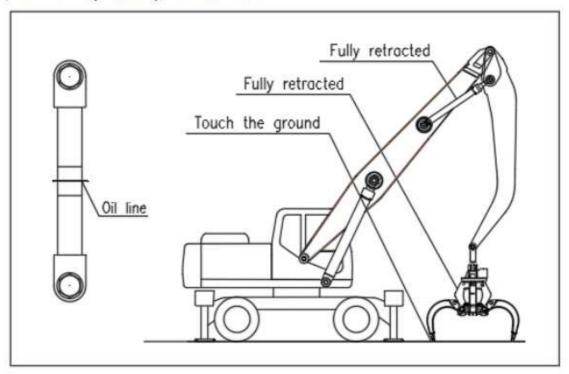


A: Support Frame & Guide Link Joint Pin (2 Points)

B: Support Frame & Cabin Link Joint Pin (2 Points)

# 5-7. Hyd oil level check

1) Posture for hydraulic system oil level check



The hydraulic tank is on the right side of the machine.

- 1. Park machine on firm and level ground. Lower attachment on ground as shown in Figure.
- 2. Lower outriggers and dozer blade to ground, to displace oil into hydraulic oil tank.
- 3. Set parking brake switch to "I" (APPLIED) position.
- 4. Move engine speed to "LOW IDLE".
- 5. Move safety lever to "LOCK" position

# PARTS MANUAL

**MOVING YOU FURTHER** 

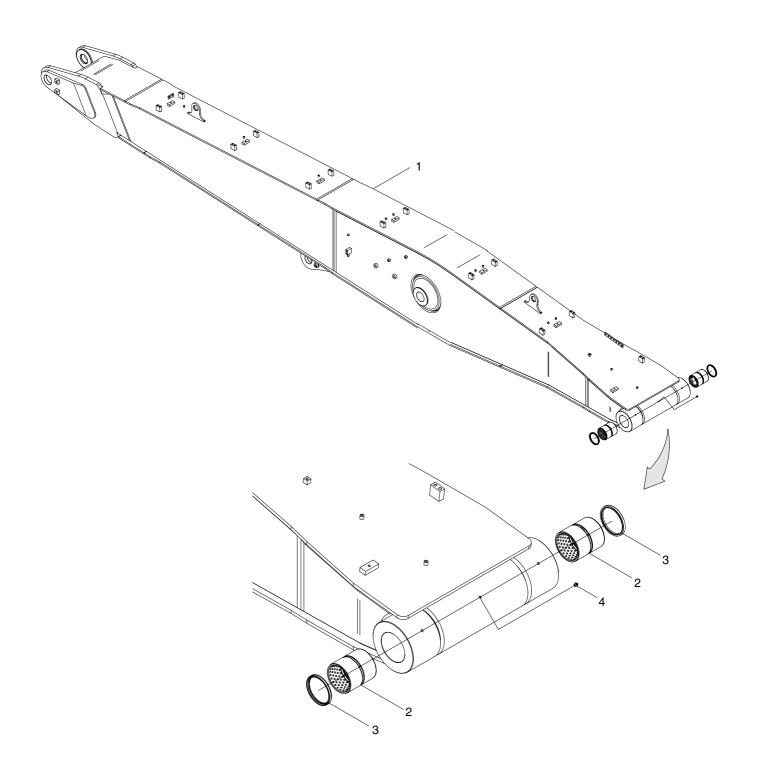
MATERIAL HANDLER

R210W-95MH



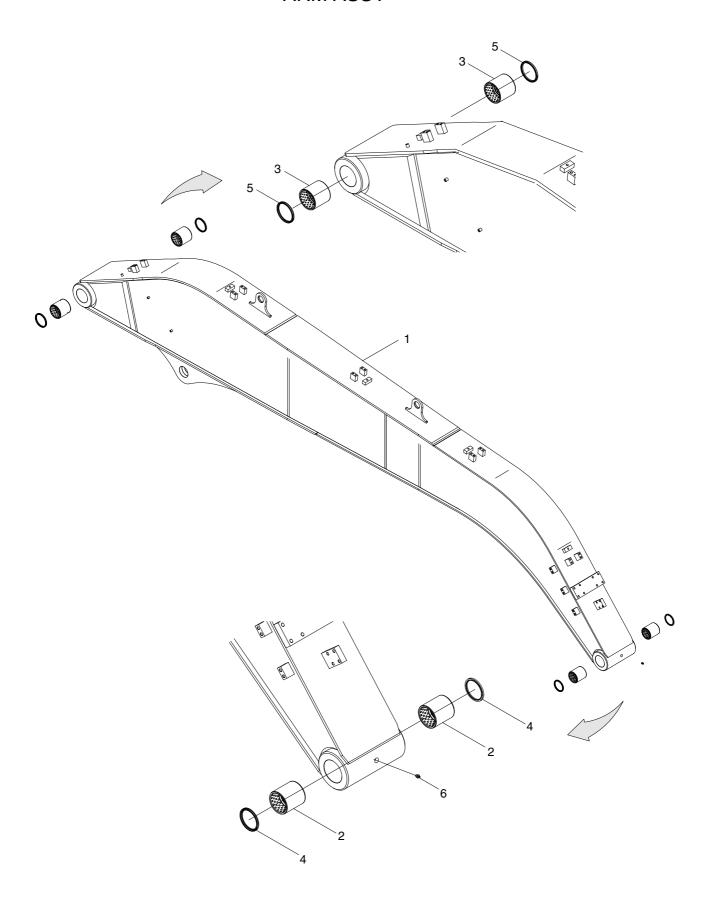
# R210W-9SMH (MATERIAL HANDLER)

BOOM ASSY		3010
ARM ASSY		
BOOM PIPING		
ARM PIPING		
GREASE PIPING		
BOOM MOUNT GROUP		
MAIN PIPING KIT		3070
LIFTING CABIN 1	S	3080
LIFTING CABIN 2		
LIFTING CABIN 3		3100
LIFTING CABIN 4		3110
LIFTING CABIN 5		3120
LIFTING CABIN 6		
LIFTING CABIN 7	S	3140
LIFTING CABIN 8	S	
LIFTING CABIN 9	S	3160
LIFTING CABIN 10	S	
LIFTING CABIN 11	S	3180
LIFTING CABIN 12	S	
LIFTING CABIN 13	S	3200
LIFTING CABIN 14	S	
LIFTING CABIN 15	S	3220
LIFTING CABIN 16	S	
LIFTING CABIN 17	S	3240
LIFTING CABIN 18	S	
LIFTING CABIN 19	S	3260
LIFTING CABIN 20	S	
LIFTING CABIN 21	S	3280
ADDITIONAL COUNTERWEIGHT ASSY	S	3290
ORANGE GRAPPLE (DMSG800)	S	300



BOOM ASSY R210W-9SMH

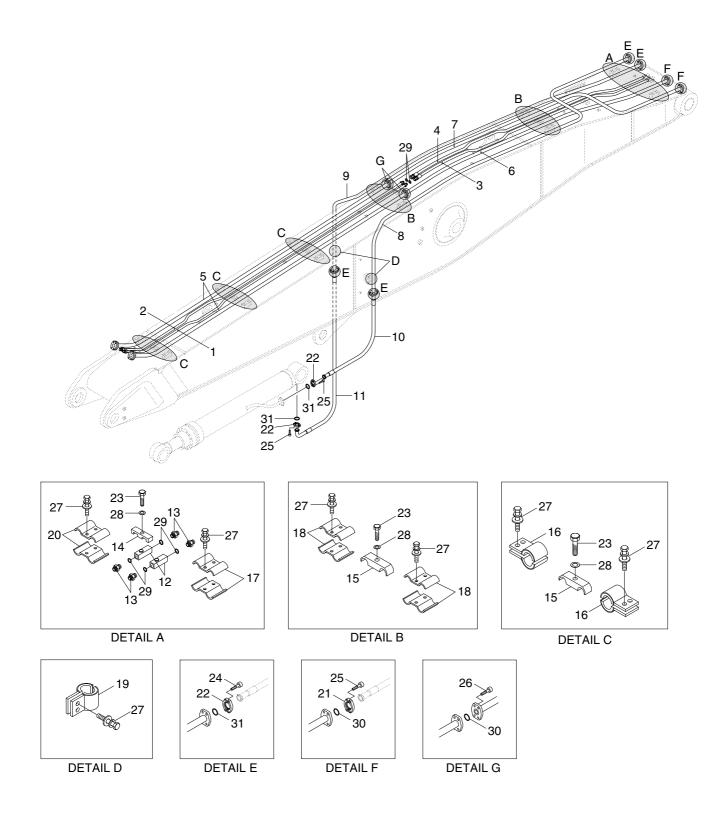
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1 2 3 4	61Q6-18010 X172-183130 Y020-090111 S652-810002	BOOM ASSY BUSHING-DIMPLE SEAL-DUST NIPPLE-GREASE	1 2 2 1			
						5040



ARM ASSY R210W-9SMH

ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	61Q6-28010	ARM ASSY	1			
2	X171-163100	BUSHING-DIMPLE	2			
	X171-183110	BUSHING-DIMPLE	2			
4	Y020-080011	SEAL-DUST	2			
5	Y020-090111	SEAL-DUST	2			
6	S651-810002	NIPPLE-GREASE	1			

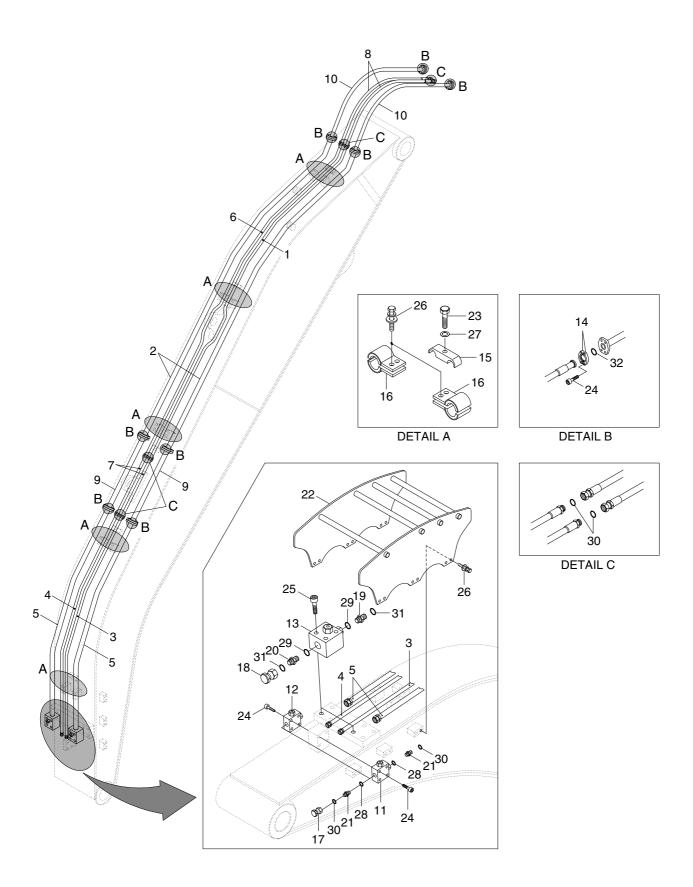
# **BOOM PIPING**



BOOM PIPING R210W-9SMH

ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	31Q6-58010GG	PIPE ASSY	1	,		
2	31Q6-58020GG	PIPE ASSY	1			
3	31Q6-58030GG	PIPE ASSY	1			
4	31Q6-58040GG	PIPE ASSY	1			
5	31Q6-58050GG	PIPE ASSY	2			
6	31Q6-58060GG	PIPE ASSY	1			
7	31Q6-58070GG	PIPE ASSY	1			
8	31Q6-58080GG	PIPE ASSY	1			
9	31Q6-58090GG	PIPE ASSY	1			
10	P680-168321	HOSE-OIL	1			L=1050
11	P700-168321	HOSE ASSY-FLG	1			L=1050
12	31Q8-57300	VALVE-CONTROL	2			
13	X500-430003	CONNECTOR-ORFS	4			
14	31Q8-57260	CLAMP	1			
15	31M6-65100	CLAMP	6			
16	31Q4-50230	CLAMP-PIPE	12			
17	31Q4-50210	CLAMP-PIPE	2			
18	31Q4-50220	CLAMP-PIPE	8			
19	31E7-01711	CLAMP ASSY-BAND	4			
20	31E7-01750	CLAMP ASSY-BAND	2			
21	P173-120102	FLANGE-SPLIT	4			
22	P173-160104	FLANGE-SPLIT	12			
23	S017-100506	BOLT-HEX	7			
24	S109-100306	BOLT-SOCKET	16			
25	S109-100406	BOLT-SOCKET	16			
26	S109-100506	BOLT-SOCKET	8			
27	S037-123526	BOLT-W/WASHER	28			
28	S411-100006	WASHER-SPRING	7			
29	S621-014001	O-RING	6			
30	Y470-120000	SEAL-TRAP	4			
31	Y470-160000	SEAL-TRAP	6			

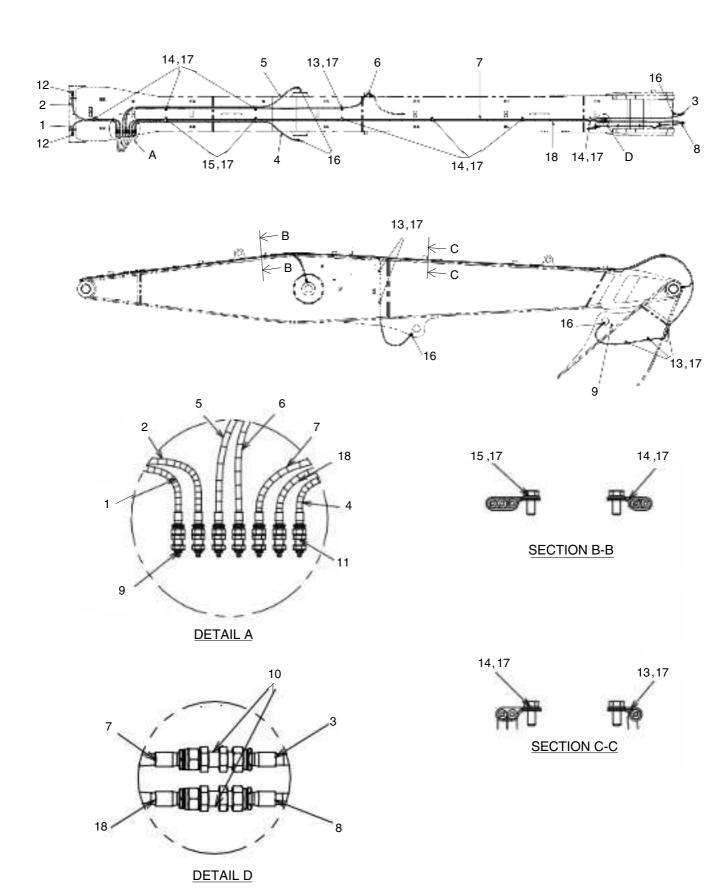
# **ARM PIPING**



ARM PIPING R210W-9SMH

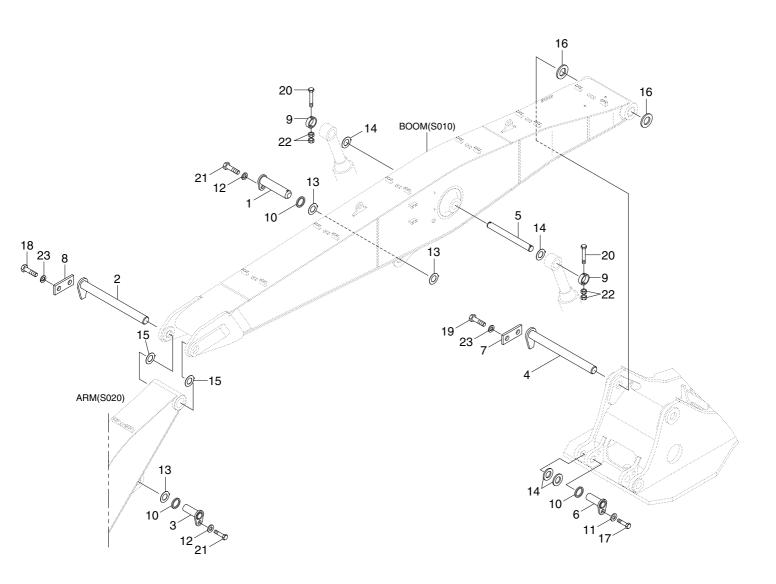
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	31Q6-68010GG	PIPE ASSY	1			
2	31Q6-68020GG	PIPE ASSY	2			
3	31Q6-68030GG	PIPE ASSY	1			
4	31Q6-68040GG	PIPE ASSY	1			
5	31Q6-68050GG	PIPE ASSY	2			
6	31Q6-68060GG	PIPE ASSY	1			
7	P910-086010	HOSE ASSY-ORFS&THD	2			L=500
8	P910-086028	HOSE ASSY-ORFS&THD	2			L=1400
9	P680-126312	HOSE-OIL	2			L=600
10	P680-126328	HOSE-OIL	2			L=1400
11	31Q8-67170	VALVE ASSY-STOP	1			
12	31Q8-67180	VALVE ASSY-STOP	1			
13	31Q4-97011	VALVE ASSY-STOP	2			
14	P173-120102	FLANGE-SPLIT	16			
15	31M6-65100	CLAMP	5			
16	31Q4-50230	CLAMP-PIPE	20			
17	X710-100104	CAP-ORFS	2			
18	X710-100105	CAP-ORFS	2			
19	31Q4-93390	ADAPTER	2			
20	X500-110004	CONNECTOR-ORFS	2			
21	X500-110003	CONNECTOR-ORFS	4			
22	36QA-68170	COVER ASSY	1			
23	S017-100506	BOLT-HEX	5			
24	S109-100406	BOLT-SOCKET	40			
25	S109-100706	BOLT-SOCKET	8			
26	S037-123526	BOLT-W/WASHER	32			
27	S411-100006	WASHER-SPRING	5			
28	S631-018004	O-RING	4			
29	S631-024001	O-RING	4			
30	S621-014001	O-RING	12			
31	S621-018001	O-RING	4			
32	Y470-120000	SEAL-TRAP	8			

# **GREASE PIPING**



GILL						
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	P840-042016	HOSE ASSY-SYNF&THD	1			L=800
2	P840-042019	HOSE ASSY-SYNF&THD	1			L=950
3	P840-042036	HOSE ASSY-SYNF&THD	1			L=1800
4	P840-042042	HOSE ASSY-SYNF&THD	1			L=2100
5	P620-043048	HOSE ASSY-THD	1			L=2400
6	P840-042086	HOSE ASSY-SYNF&THD	1			L=4300
N7	P840-042107	HOSE ASSY-SYNF&THD	1			L=5350
8	P860-043056	HOSE ASSY-SYNF&THD	1			L=2800
9	S651-810002	NIPPLE-GREASE	8			
10	31Q8-57910	CONNECTOR	2			
11	31W5-70060	CONNECTOR	7			
12	31NB-50280	ELBOW-90	2			
13	31Q6-50371	CLAMP-HOSE	6			
14	31Q6-50381	CLAMP-HOSE	7			
15	31Q6-50391	CLAMP-HOSE	2			
16	P010-430011	CONNECTOR	5			
17	S035-082026	BOLT-W/WASHER	14			
N18	P840-042106	HOSE ASSY-SYNF&THD	1			L=5300
	•					

## **BOOM MOUNT GROUP**

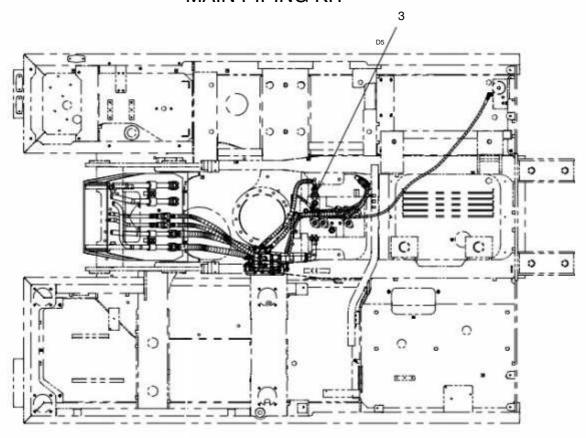


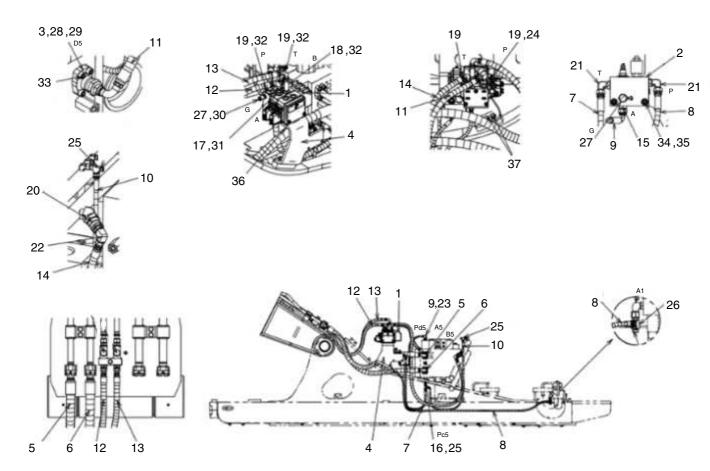
## **BOOM MOUNT GROUP**

ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	61Q6-07210	PIN-JOINT	1			
2	61Q6-07220	PIN-JOINT	1			
3	61Q6-07230	PIN-JOINT	1			
4	61Q6-00030	PIN-JOINT	1			
5	61N6-11151	PIN-JOINT	1			
6	61Q6-01600GG	PIN-JOINT	2			
7	61Q8-00310	PLATE	1			
8	61Q8-00320	PLATE	1			
9	61Q6-00320	STOPPER-PIN	2			
10	61Q8-00140	SPACER-PIN	4			
11	61N8-00310-DA	WASHER-HARDEN	2			
12	61N8-00320-DA	WASHER-HARDEN	2			
13	61Q8-08050	SHIM	4			
14	61Q8-08030	SHIM	8			
15	61Q6-08290	SHIM	2			
16	61Q6-08310	SHIM	2			
17	S017-16025D	BOLT-HEX	2			
18	S017-16035D	BOLT-HEX	2			
19	S017-16040D	BOLT-HEX	2			
20	S017-161606	BOLT-HEX	2			
21	S017-20030D	BOLT-HEX	2			
22	S205-16100B	NUT-HEX	4			
23	S411-160006	WASHER-SPRING	4			

#### R210W-9SMH

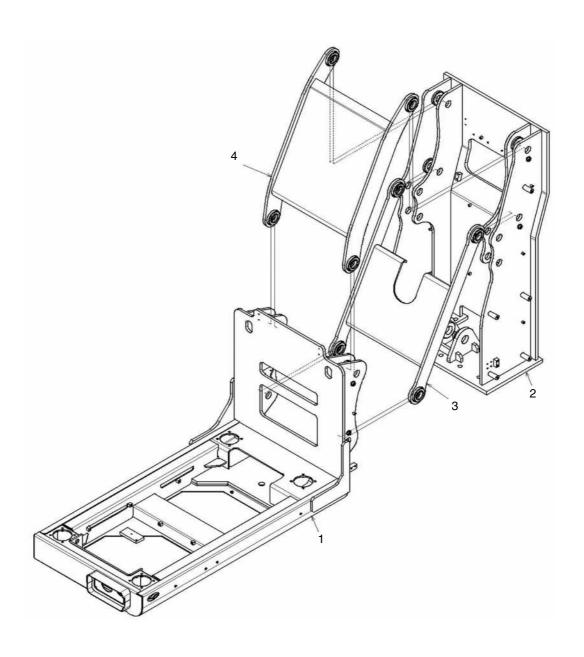
#### MAIN PIPING KIT



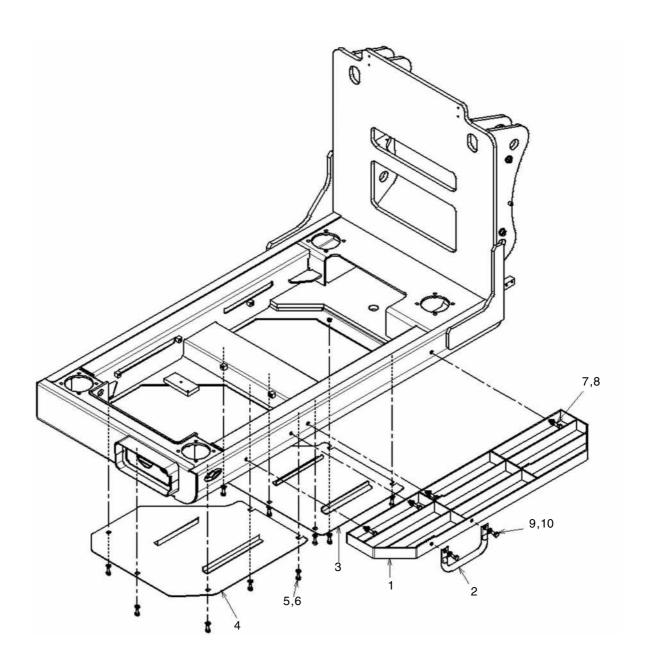


## MAIN PIPING KIT

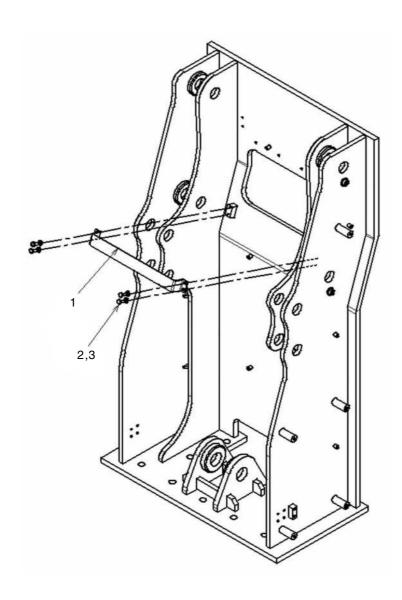
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	XKBN-06566	VALVE	1			
2	XKBN-06567	VALVE-SOLENOID	1			24V
3	XKBN-06568	PIPE ASSY	1			
4	XKBN-06569	BRACKET-VALVE	1			
5	XKBN-06570	HOSE-P.D	1			L=1190
6	XKBN-06571	HOSE-P.D	1			L=1240
7	XKBN-06572	HOSE-OIL	1			L=1050
8	XKBN-06573	HOSE-OIL	1			L=2500
9	XKBN-06574	HOSE-OIL	1			L=900
10	XKBN-06575	HOSE-OIL	1			L=1150
11	XKBN-06576	HOSE-P.D	1			L=750
12	XKBN-06577	HOSE-P.D	1			L=950
13	XKBN-06578	HOSE-P.D	1			L=1050
14	XKBN-06579	HOSE-P.D	1			L=1900
15	XKBN-03092	CONNECTOR	1			
16	XKBN-04498	CONNECTOR	1			
17	XKBN-06109	CONNECTOR	1			
18	X511-108536	CONNECTOR-LONG	1			
19	X500-110017	CONNECTOR-ORFS	2			
20	XKBN-06406	CONNECTOR	1			
21	XKBN-04489	ELBOW	2			
22	XKBN-06457	ELBOW-90	1			
23	XKBN-04490	ELBOW-90	1			
24	X850-535300	ELBOW-90	1			
25	X840-515151	TEE-R	2			
26	X840-525152	TEE-R	1			
27	XKBN-04512	COUPLING	2			
28	XKBN-02075	O-RING	1			
29	Y171-024004	O-RING	3			
30	XKBN-06580	SEAL	1			
31	XKBN-06581	SEAL	2			
32	XKBN-06582	SEAL	2			
33	XKBN-04534	BOLT-SOCKET	4			
34	XKBN-06093	BOLT-SOCKET	2			
35	XKBN-00065	WASHER-SPRING	2			
36	S035-082526	BOLT-W/WASHER	4			
37	S037-123026	BOLT-W/WASHER	3			



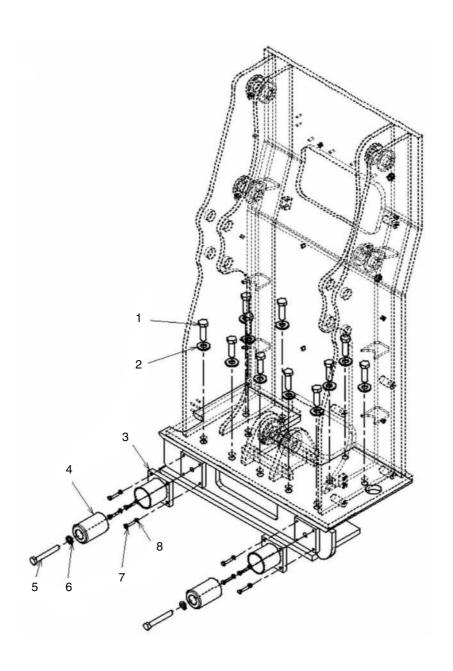
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06584	. CABIN ASSY-BASE	1			
2	XKBN-06585	. SUPPORT ASSY	1			
3	XKBN-06586	. LINK ASSY-UPPER	1			
4	XKBN-06587	. LINK ASSY-UNDER	1			



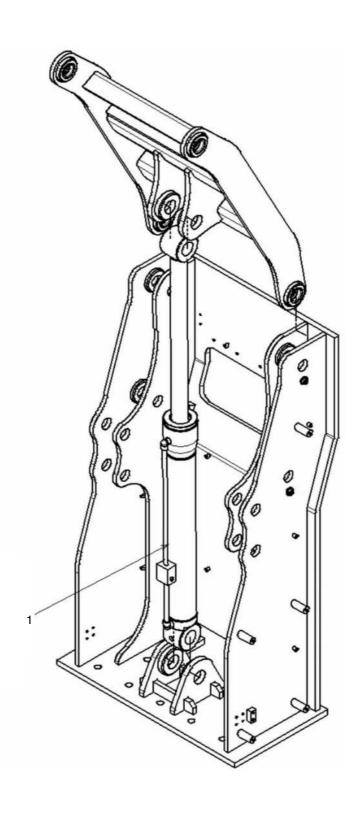
R210W-9SMH



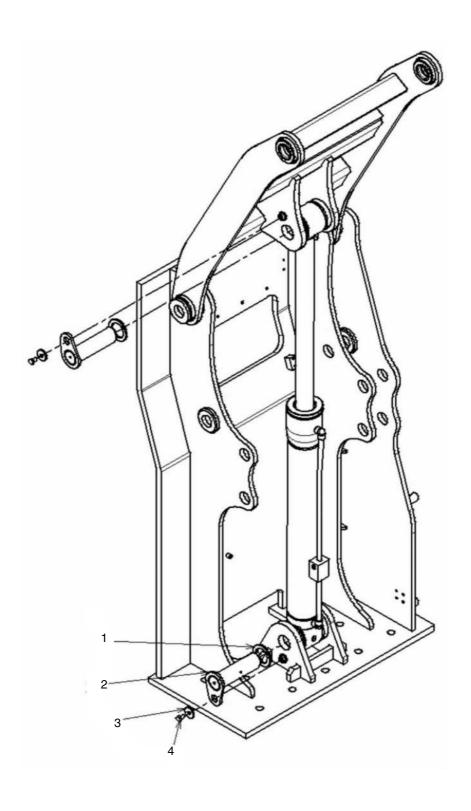
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ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06591	. PLATE	1			
2	XKBN-06592	. BOLT-HEX	4			
3	XKBN-06153	. WASHER	4			
	l .	l .	1	l .		l .



ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06593	. BOLT-HEX	11			
2	XKBN-06594	. WASHER	11			
3	XKBN-06595	. BRACKET-URETHAN	2			
4	XKBN-06657	. RUBBER-URETHANE	2			
5	XKBN-06597	. BOLT-HEX	2			
6	XKBN-06598	. WASHER	2			
7	XKBN-06091	. BOLT-HEX	8			
8	XKBN-06599	. WASHER	8			



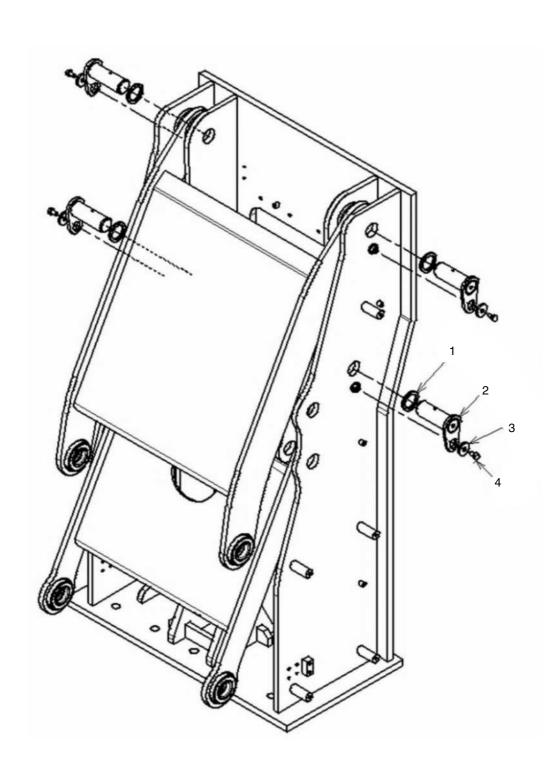
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	7.11.B11 00000	CABIN ASSY-LIFTING . CYLINDER ASSY	1			SEE PS080~PS280
1	XKBN-06600	. CYLINDER ASSY	1			



ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06601	. WASHER-PIN	2			
2	XKBN-06602	. PIN ASSY	2			
3	XKBN-06603	. WASHER	2			
4	XKBN-03043	. BOLT-HEX	2			
		<u> </u>				

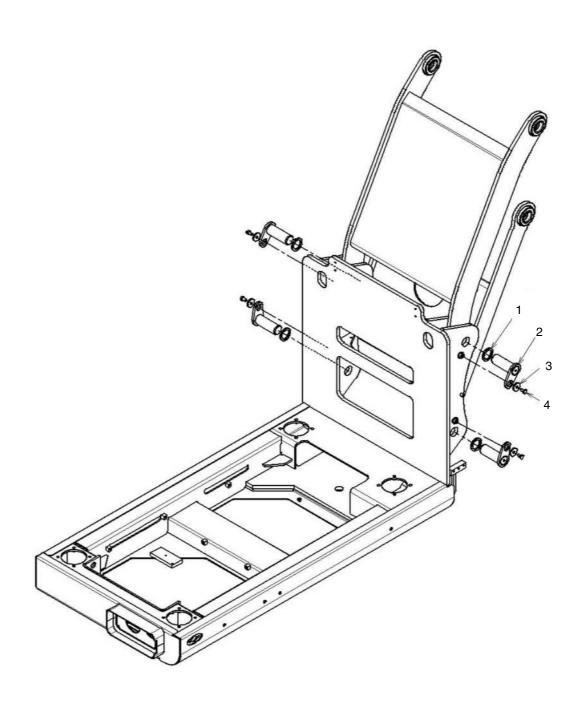
R210W-9SMH

# LIFTING CABIN (7)

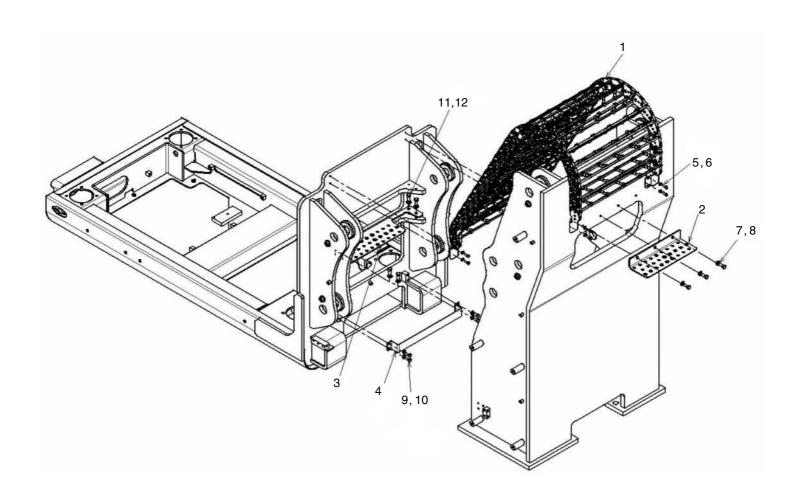


ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06604	. WASHER-PIN	2			
2	XKBN-06605	. PIN ASSY	2			
3	XKBN-06603	. WASHER	2			
4	XKBN-03043	. BOLT-HEX	2			

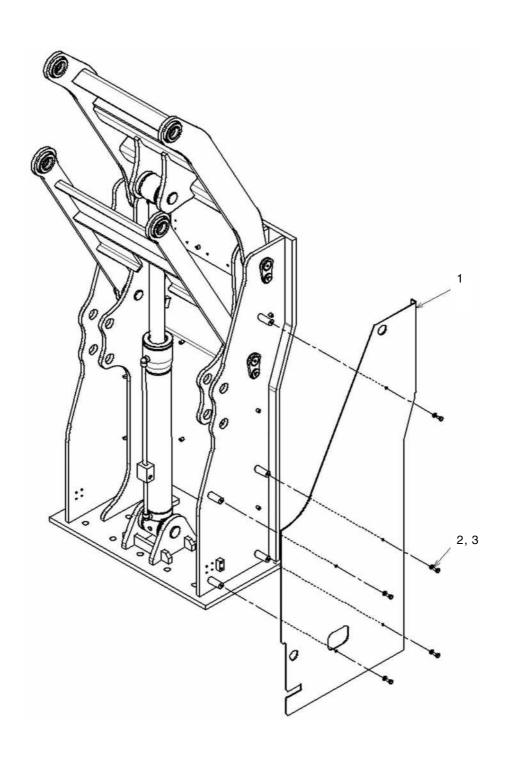
# LIFTING CABIN (8)



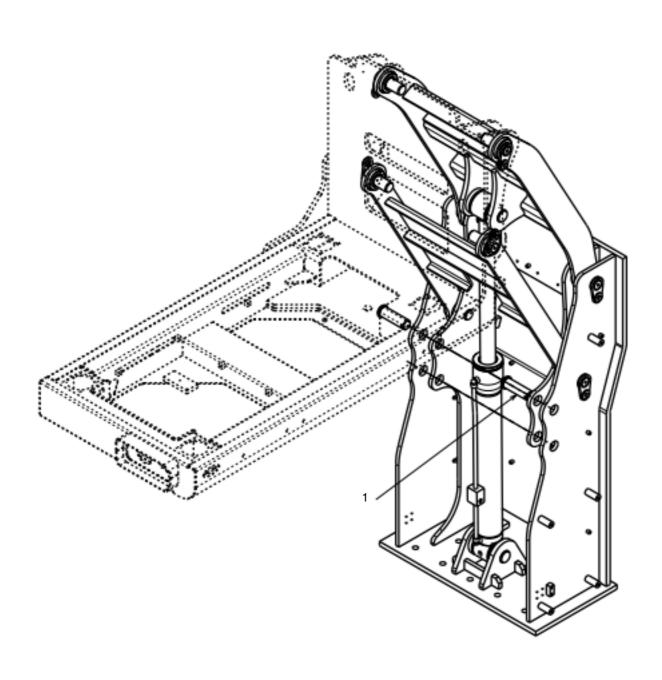
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06604	. WASHER-PIN	2			
2	XKBN-06605	. PIN ASSY	2			
3	XKBN-06603	. WASHER	2			
4	XKBN-03043	. BOLT-HEX	2			



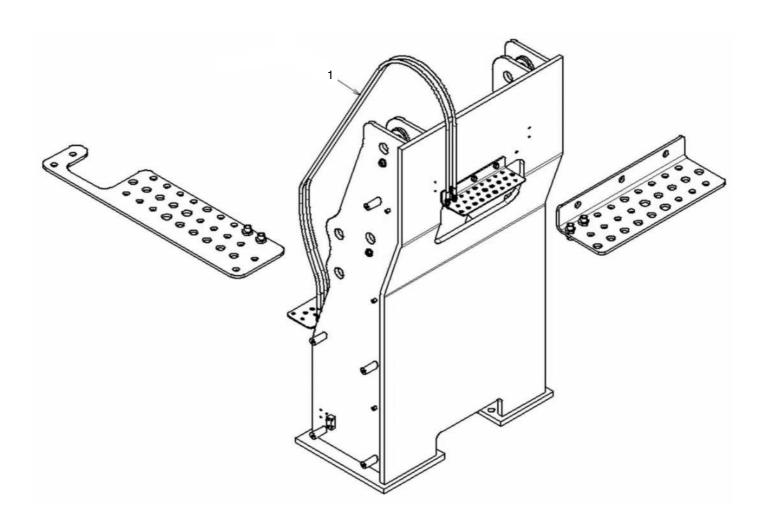
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06604	. WASHER-PIN	1			
2	XKBN-06606	. PLATE-HOSE	1			
3	XKBN-06607	. PLATE-HOSE	1			
4	XKBN-06591	. PLATE	1			
5	XKBN-06592	. BOLT-HEX	4			
6	XKBN-06153	. WASHER	4			
7	XKBN-06166	. BOLT-HEX	3			
8	XKBN-06145	. WASHER	3			
9	XKBN-06592	. BOLT-HEX	4			
10	XKBN-06153	. WASHER	4			
11	XKBN-06166	. BOLT-HEX	4			
12	XKBN-06145	. WASHER	4			



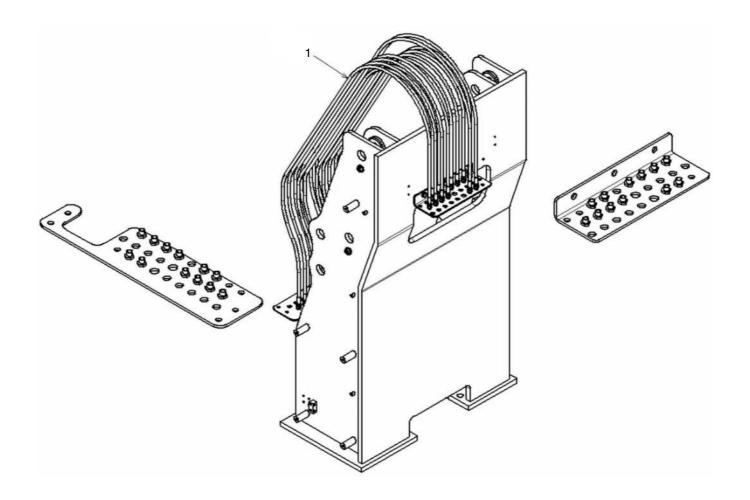
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			
1	XKBN-06608	. COVER-SIDE	1			
2	XKBN-00359	. BOLT-HEX	5			
3	XKBN-06341	. WASHER	5			



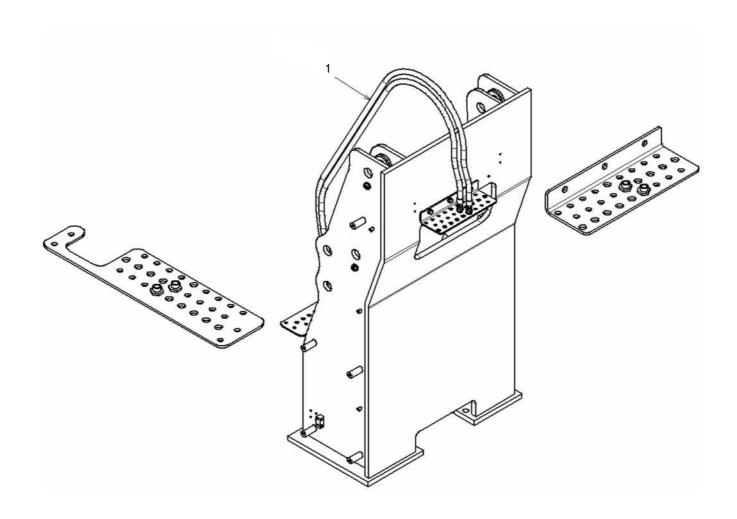
	ING CADII			T	1	1121011-3011111
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
* 1	XKBN-06583 XKBN-06609	CABIN ASSY-LIFTING . PIN-SAFETY	1 2			



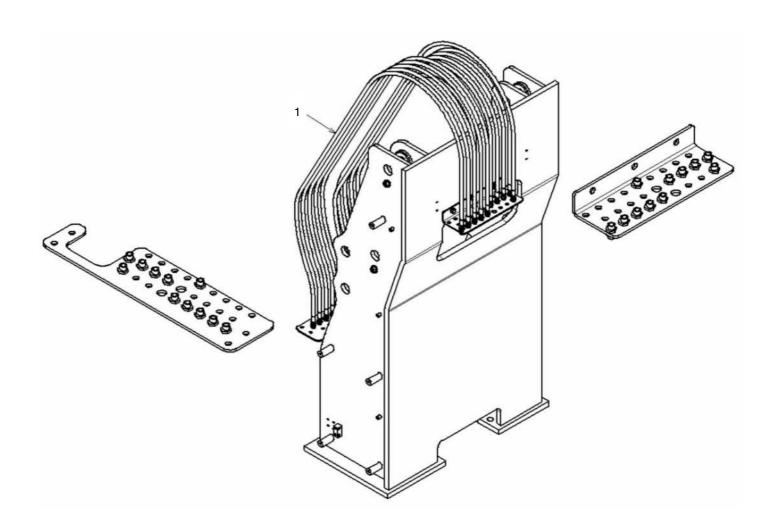
	ING CADIN	· · · ·		I		1121077-3017111
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583 XKBN-06610	CABIN ASSY-LIFTING . HOSE ASSY	1			SEE PS080~PS280
'	ANDIN OUTO	. 11001 A001	'			



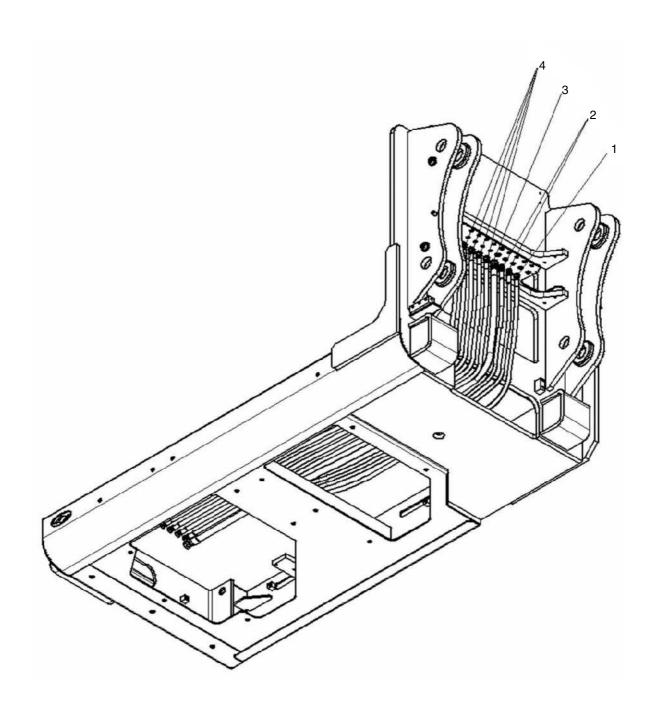
	ING CADII		1	1		T (2 10 VV - 3 O IVII 1
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06611	. HOSE ASSY	12			



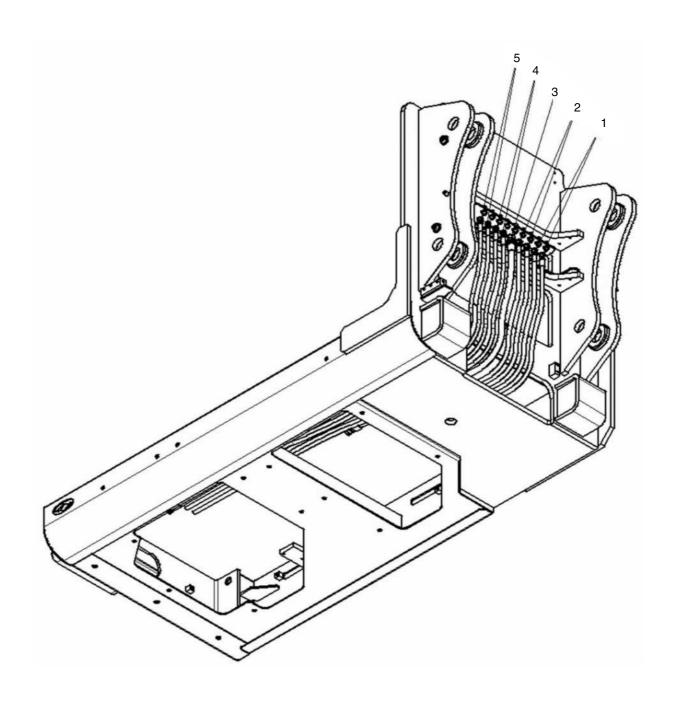
	ING CADIN			T		112 10 10 - 30 1011 1
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
* 1	XKBN-06583 XKBN-06612	CABIN ASSY-LIFTING . HOSE ASSY	1 2			L=2500



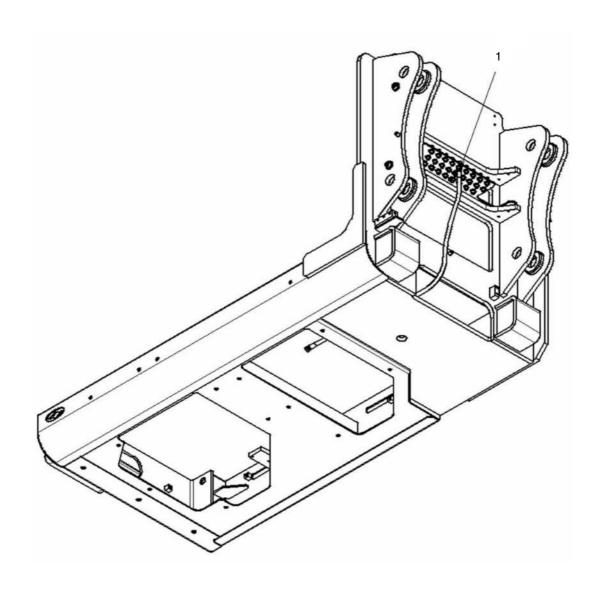
	ING CADII					NZ 1077-3017111
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
* 1	XKBN-06583 XKBN-06612	CABIN ASSY-LIFTING . HOSE ASSY	1 11			L=2500



	ING CADII	T	_	1(210W-30Will				
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK		
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280		
1	XKBN-06613	. HOSE ASSY	1			L=1800		
2	XKBN-06614	. HOSE ASSY	2			L=1800		
3	XKBN-06615	. HOSE ASSY	1			L=2100		
4	XKBN-06616	. HOSE ASSY	5			L=2100		

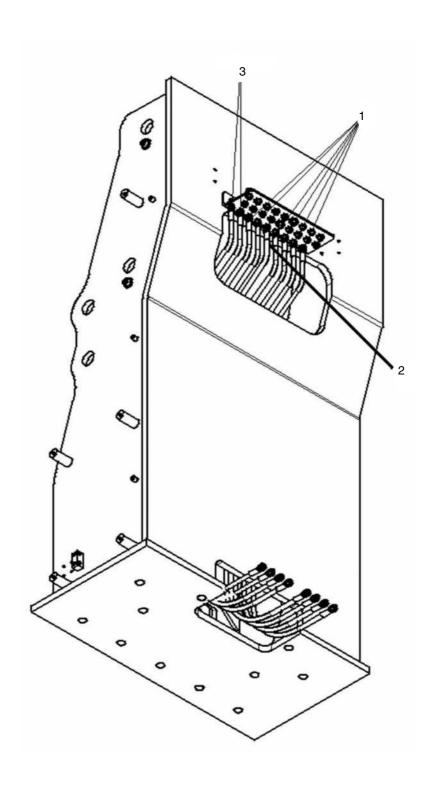


ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06617	. HOSE ASSY	2			L=1500
2	XKBN-06618	. HOSE ASSY	2			L=1500
3	XKBN-06619	. HOSE ASSY	1			L=1300
4	XKBN-06620	. HOSE ASSY	2			L=2100
5	XKBN-06621	. HOSE ASSY	2			L=2100
·						



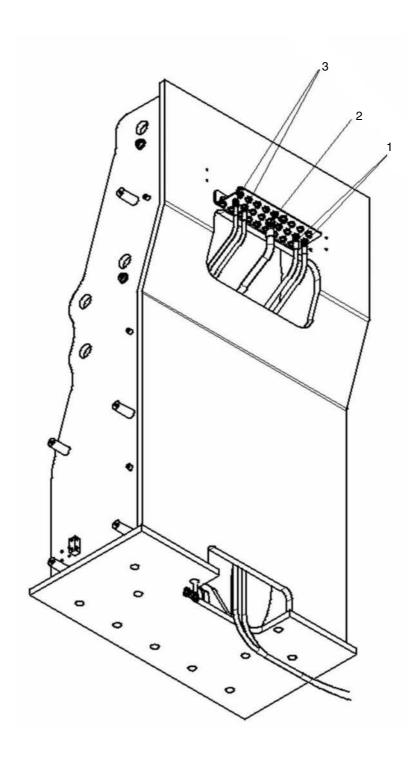
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
		. HOSE ASSY	1			L=1300

## **LIFTING CABIN 19**



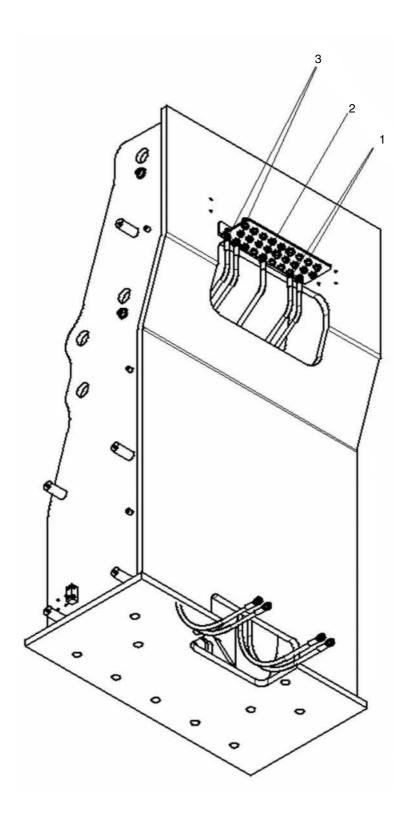
	II TING CADIN 19								
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK			
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280			
1	XKBN-06623	. HOSE ASSY	6			L=2000			
2	XKBN-06624	. HOSE ASSY	1			L=1000			
3	XKBN-06625	. HOSE ASSY	2			L=2000			
	•								

## **LIFTING CABIN 20**



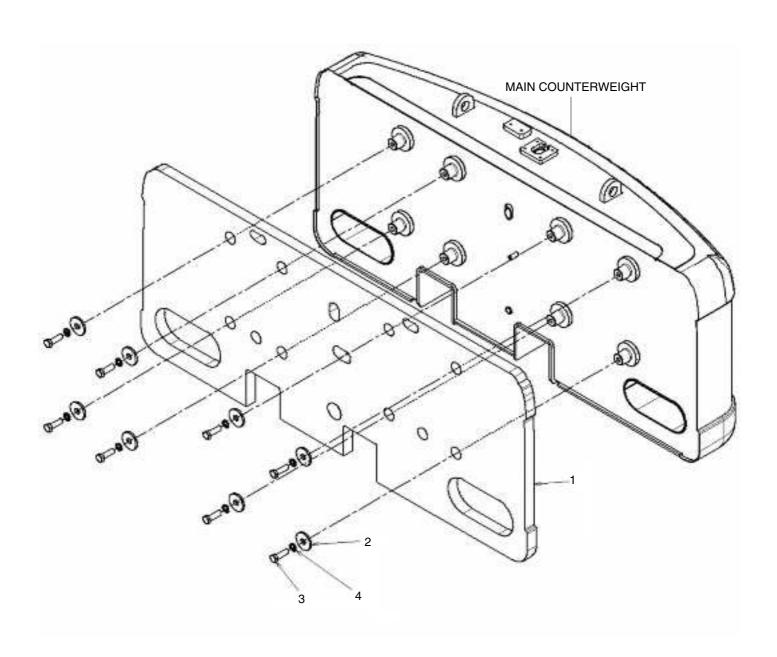
	II TING CADIN 20								
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK			
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280			
1	XKBN-06626	. HOSE ASSY	2			L=2900			
2	XKBN-06627	. HOSE ASSY	1			L=1000			
3	XKBN-04431	. HOSE ASSY	2			L=1000			

## **LIFTING CABIN 21**



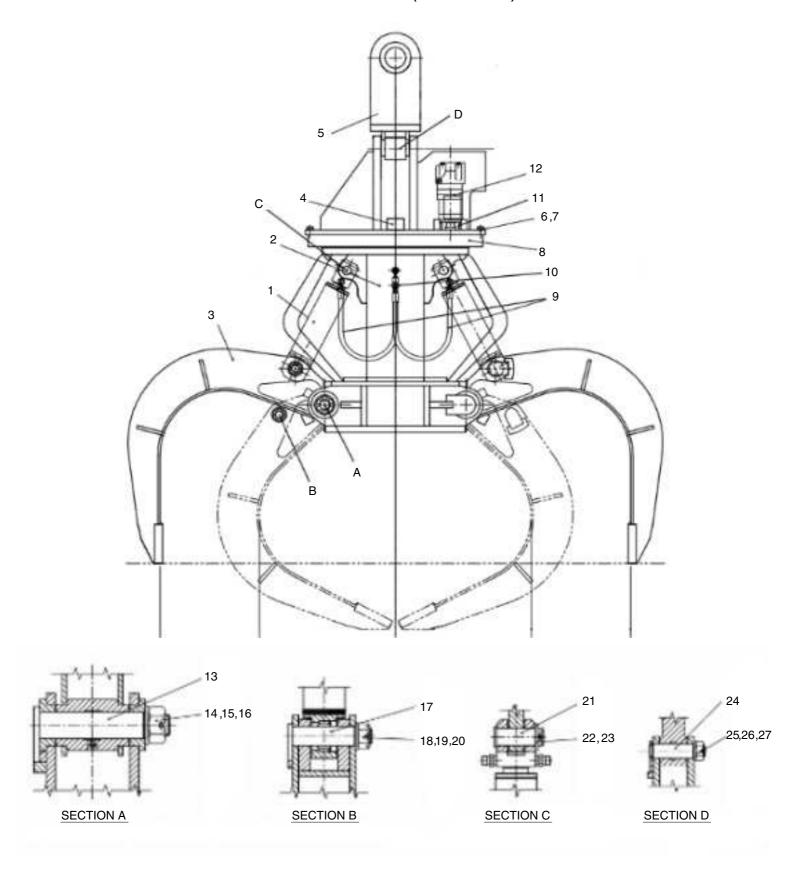
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06583	CABIN ASSY-LIFTING	1			SEE PS080~PS280
1	XKBN-06623	. HOSE ASSY	2			L=2000
2	XKBN-06624	. HOSE ASSY	1			L=1000
3	XKBN-06625	. HOSE ASSY	2			L=2000

#### ADDITIONAL COUNTERWEIGHT ASSY



	THONAL	1121011-301111				
ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
*	XKBN-06628	COUNTERWEIGHT ASSY	1			
1	XKBN-06629	. COUNTERWEIGHT	1			
2	XKBN-06630	. PLATE	8			
3	XKBN-06631	. BOLT-HEX	8			
4	XKBN-06632	. WASHER	8			
	1					<u> </u>

# ORAGNE GRAPPLE (DMSG800)



ITEM	PART NO	DESCRIPTION	QTY	SERIAL NO	ITC	REMARK
1	XKBN-06633	CYLINDER ASSY	5			
2	XKBN-06634	BODY ASSY	1			
3	XKBN-06635	GRAB ASSY	5			
4	XKBN-06636	JOINT-CENTER	1			
5	XKBN-06637	EXTENSION-ARM	1			
6	XKBN-06638	BOLT-STAY	1			
7	XKBN-06639	WASHER-SPRING	20			
8	XKBN-06640	BEARING-SWING	1			
9	XKBN-06641	HOSE-HYD	10			
10	XKBN-06642	NIPPLE-BODY	10			
11	XKBN-06643	GEAR&PINION	1			
12	XKBN-06644	MOTOR-HYD	1			
13	XKBN-06636	JOINT-CENTER	5			
14	XKBN-06645	NUT	5			
15	XKBN-06646	WASHER-PLAIN	5			
16	XKBN-06647	PIN-SPLIT	5			
17	XKBN-06648	PIN	5			
18	XKBN-06649	NUT-HEX	5			
19	XKBN-06650	WASHER-PLAIN	5			
20	XKBN-06651	PIN-SPLIT	5			
21	XKBN-06652	PIN-CYL	5			
22	XKBN-06653	WASHER-PLAIN	5			
23	XKBN-06651	PIN-SPLIT	5			
24	XKBN-06654	PIN-JOINT	1			
25	XKBN-06645	NUT	1			
26	XKBN-06656	WASHER-PLAIN	1			
27	XKBN-06647	PIN-SPLIT	1			

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31Q4-50230	S030	16	61Q6-08310	S060	16	S109-100406	S030	25
31Q4-50230	S040	16	61Q6-18010	S010	1	S109-100406	S040	24
31Q4-93390	S040	19	61Q6-28010	S020	1	S109-100506	S030	26
31Q4-97011	S040	13	61Q8-00140	S060	10	S109-100706	S040	25
31Q6-50371	S050	13	61Q8-00310	S060	7	S205-16100B	S060	22
31Q6-50381	S050	14	61Q8-00320	S060	8	S411-100006	S030	28
31Q6-50391	S050	15	61Q8-08030	S060	14	S411-100006	S040	27
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31Q6-58020GG	S030	2	P010-430011	S050	16	S621-014001	S030	29
31Q6-58030GG	S030	3	P173-120102	S030	21	S621-014001	S040	30
31Q6-58040GG	S030	4	P173-120102	S040	14	S621-018001	S040	31
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31Q6-58090GG	S030	9	P680-168321	S030	10	S652-810002	S010	4
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31Q6-68040GG	S040	4	P840-042036	S050	3	X500-110003	S040	21
31Q6-68050GG	S040	5	P840-042042	S050	4	X500-110004	S040	20
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