

EN



**OPERATING MANUAL
& SPARE PARTS LIST**

Cargotec Korea Ltd

EN



OPERATING MANUAL

Cargotec Korea Ltd

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1. Foreword

This operator's manual for HIAB 190TM teaches you the right way to operate and maintain your crane.

In this Operating manual are :

- Important safety precautions and warnings
- Important directions for use
- An explanation of the arrangement of Operator's manual
- An explanation of the directions in the Operator's manual

▲ DANGER
If you have not studied the Operator's Manual for your crane carefully, this can lead to fatal accidents or serious damage.

Thus you should :

1. Study the entire Operator's Manual carefully
2. Use the crane only after having done so
3. Follow the directions for use, operation and maintenance of the crane exactly

!NOTE

HIAB reserves the right to change specifications, equipment, operating instructions and maintenance instructions without prior notice

2. The Operator's Manual

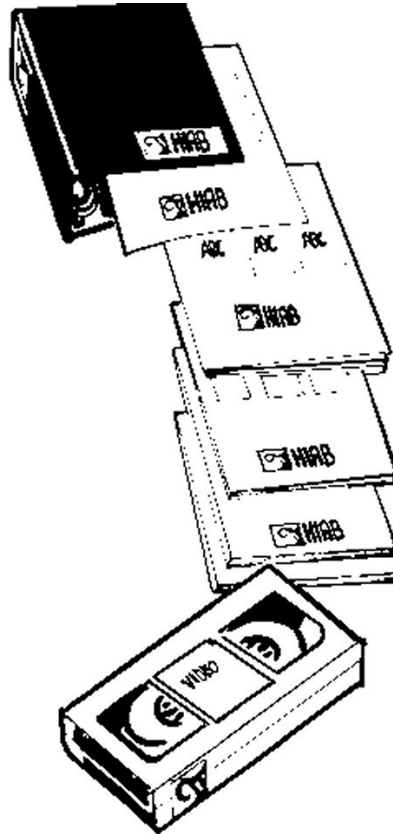
2-1. Structure

The Operator's Manual for your crane consists of :

- The Operator's Manual applies to all HIAB stiff-boom cranes.

It contains important safety precautions and warnings. The operator's Manual also contains important general instructions for use.

- Operation and Maintenance of your type of crane
- Technical Data for your crane
- Descriptions of options and extensions for your crane



2-2. Indications in the Operator's Manual

The following indications are used in the Operator's Manual :

! TIP

Tip to make work easy to carry out

! NOTE

Extra information that can prevent problems

CAUTION

Hazard for the crane or crane components.
Follow the instructions carefully



WARNING

Danger of injury to yourself or to bystanders, or
danger of serious damage
to the crane or other objects.
Follow the instruction carefully.



DANGER

Danger to life for yourself or to bystanders.
Follow the instructions carefully.



!NOTE

The sign  above occurs in the text as a black triangle ▲.

The same status is valid for both signs.

2-3. Other indications

Symbol for reference to illustration. ❶

Refers to an illustration.

Symbol for reference to a component in an illustration. ①

Refers to a component in an illustration.

[Option]

Indication for parts that are non-standard for the crane, but an option.

!NOTE

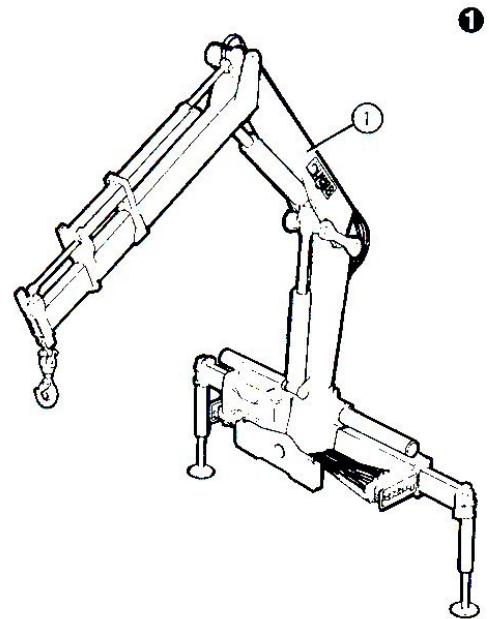
1. Do this
2. Do that

If actions are numbered, you should most certainly carry them out in numerical order!

!TIP

Are you looking for information?

Use the Table of Contents and the Index.



3. Safety precautions and warnings

3-1. Study these instructions carefully!

▲ DANGER

If you have not studied the Operator's Manual for your crane carefully, this can lead to fatal accidents and serious damage.



Thus you should:

1. Study the entire Operator's Manual carefully
2. Use the crane only after having done so
3. Follow the directions for use, operation and maintenance of the crane exactly

3-2. Knowledge required

▲ DANGER

Only persons with the requisite knowledge and experience with cranes may use the crane. Never operate the crane when you are sick, tired out, under the influence of medicines, alcohol or other drugs

1. Take the delivery instructions from your HIAB dealer.

Or be instructed by an experienced person from your own company.

2. Only then should you operate your crane. Ensure that you meet the statutory requirements of the country in which you will use the crane (for example, certificate, obligatory safety-helmet)

▲ DANGER

Carry out yourself only the maintenance work prescribed in the Operation and Maintenance for your type of crane. All other maintenance work should be done in a HIAB service workshop.

▲ Deal yourself only with the faults described in the Operation and Maintenance for your type of crane. All other work to rectify faults may only be performed by personnel in a HIAB service workshop.



3-3. Operating conditions

You may use the crane only under the following conditions :
in the open air, or in spaces with sufficient ventilation

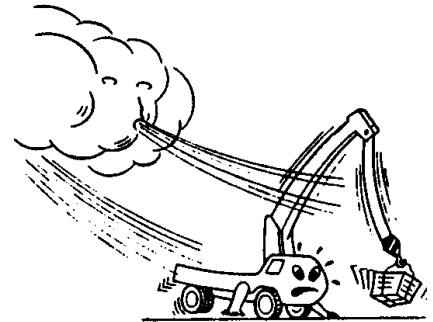
▲ DANGER

If you use the crane in a confined space you should suffocate from the exhaust gases from the vehicle.

With wind speed less than 13.3 m/sec [approx. 29.7 mph]
Consult the wind speed table, Appendix 1.

▲ DANGER

Never use the crane in a high wind or storm.
When wind speeds exceed 13.3 m/sec
the crane will behave unpredictably.



▲ DANGER

Never use the crane during a thunder-storm.

▲ DANGER

At temperature below 0°C (32 °F) additional
precautions are needed when starting crane
operations. See the instructions in the Operation
and Maintenance for your type of crane.

On a flat surface. The maximum
permissible slope for your crane is
in the technical Data.

▲ DANGER

The crane can move uncontrollably
on a slope of more than
the maximum permissible one.



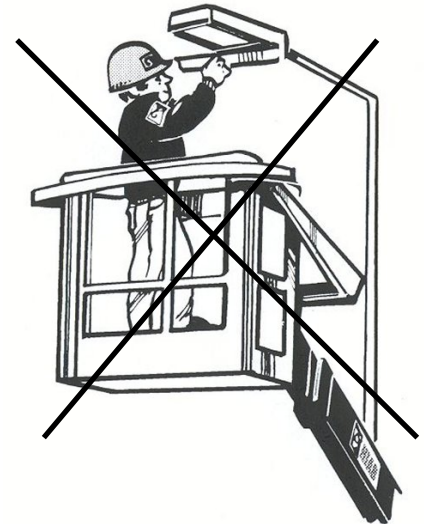
3-4. Use and maximum load

Use your crane only for loading and unloading cargo.

▲ DANGER

Never lift people with the crane!

People may only be lifted by cranes that are approved for it and equipped with a special platform for lifting people for work at heights.



▲ WARNING

Never use your crane for long periods continuously. (unless it has been made suitable for this purpose). Your crane is not a production crane and is not intended for continuous use.

Continuous use can shorten its life considerably.

!NOTE

The load plate and the load diagram on your crane show what are the maximum loads you can lift in the operating reach of your crane.

▲ DANGER

Never change the settings of the safety valves.

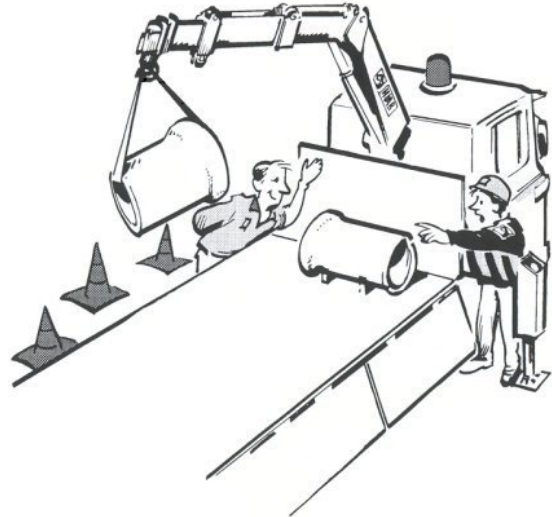
3-5. Preparation for use

▲ DANGER

Ensure that there are no unauthorized persons within the operating range of your crane!

! TIP

Mark out the working range, with for example, cones.



! TIP

Put on your vehicle warning lights.

▲ DANGER

If a part of the crane comes in contact with an electricity line, you will certainly be electrocuted!

▲ Maintain the following minimum distances between the crane and overhead electricity lines unless otherwise prescribed by national rules.

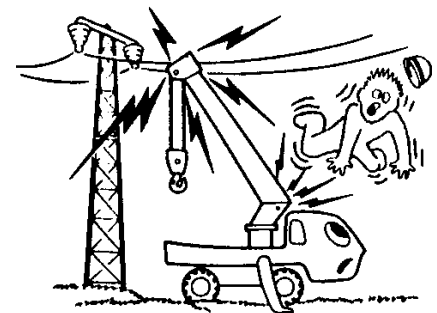


Table 1 : Minimum distance between crane and overhead electricity lines

Voltage(V)	Minimum distance to an insulated conductor	Minimum distance to an uninsulated conductor
< 500 V	0.6 m	2.5 m
500 ~ 40,000 V	2 m	5 m
> 40,000 V	-	8 m

Voltages are found :

- Up to 500V : to houses
- 500 ~ 40,000 V : trams, trains
- over 40,000V : power transmission

▲ DANGER

Put on the vehicle parking brake!
Otherwise the vehicle can begin to slide during lifting.

▲ Never use the outrigger legs as a parking brake. Then too, the vehicle could start to slide.

▲ Put on a safety helmet.
(legally compulsory in some countries!)

▲ Check that the ground is sufficiently flat.
Use chocks under the wheels on a gentle slope.



▲ Check that the ground is sufficiently firm. Check also that the ground is not undermined. Look out for sewers, cellars, excavations etc.
The outrigger legs must not be able to sink in.

▲ DANGER

On a slippery surface, for example because of frost :
Place chocks under the wheels.

▲ Check that the add-on lifting accessories are in good order!
Add-on lifting accessories are sometimes fitted on the crane (winch, jib) or placed between the boom tip and the load (grapple, rotator).
Separate lifting accessories are connected to the standard load hook (slings, chains, shackles etc).

▲ WARNING

Check that there are no obstacles within the working range.



3-6. Use of the crane

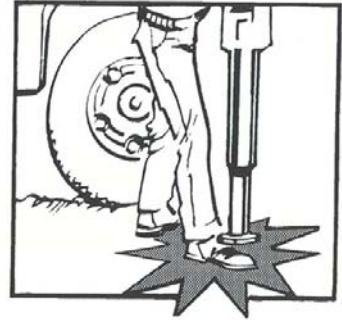
3-6-1. Starting crane operation

▲ DANGER

Ensure that you can see the outrigger legs when you are operating them.

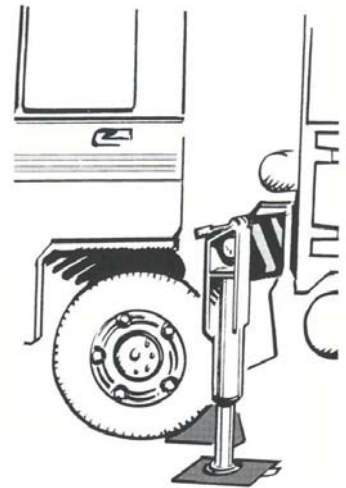
Operate the outrigger legs from the side of the legs concerned.

Do not stand in front of the hydraulically-operated outrigger legs when you are operating them!



▲ WARNING

Be careful that you do not lower the outrigger legs onto your foot.

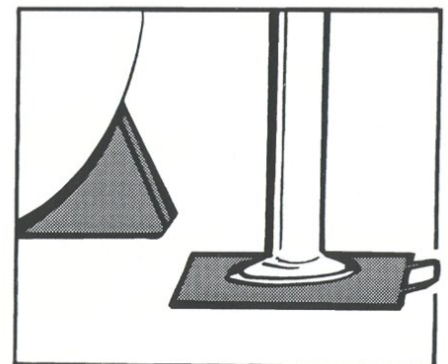


▲ DANGER

Where the ground is not firm enough, use support plates under the outrigger legs for additional support. Use support plates that are large and firm enough for your crane.

Check that the support plate as it comes under load is not pushed into the ground.

Check that the support plate does not bend under load.



▲ Do not lower the outrigger legs on the edge of an embankment, soft shoulder, slope etc. Lower the outrigger legs only on a flat surface.

▲ Slide the outrigger extension beams on both sides of the vehicle out completely. Then lower the outrigger legs for support.

▲ If outrigger extension beams are not slide out completely, then the crane can tip over.

▲ **WARNING**

Place the outrigger legs with low force on the ground.

Only for cranes with 2 outrigger legs :

Do not raise the vehicle! If you raise the vehicle with the outrigger legs this can damage the outrigger legs.

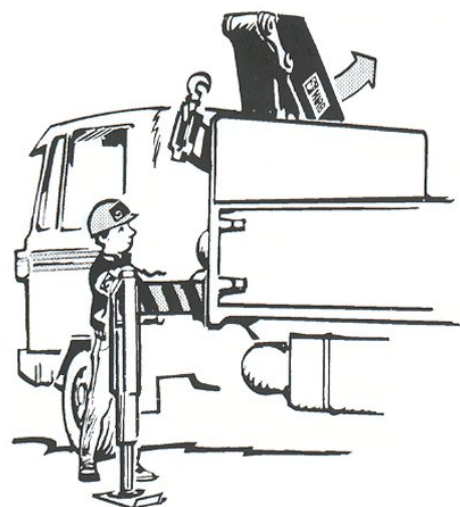
▲ **DANGER**

Never operate the outrigger legs if the crane has a load.

▲ **DANGER**

Unfold the crane according to the directions in the operation and maintenance for your crane.

▲ Never unfold the loader from the position shown in fig. 5

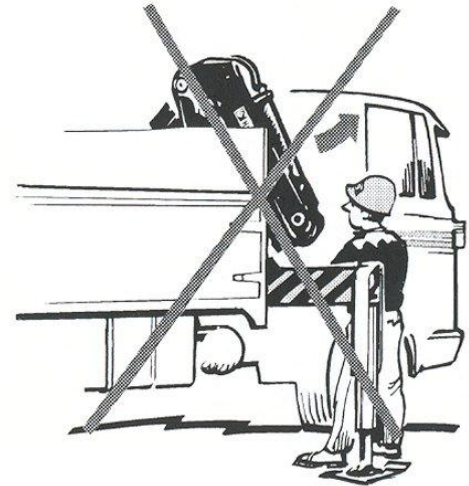


3-6-2. Crane operation

5

▲ DANGER

Keep checking that there is no unauthorized person within the operating reach of the crane!



▲ Make certain that you can always see the load! If your view of the loads is not adequate, have someone else give you signals. Appendix 2 contains a list of signals. Make certain that you and the person Assisting you knows these signals.

▲ Watch out for the safety of the person giving the signals!

▲ Never move the vehicle if you have a freely-suspended load on the crane.

▲ Never walk or stand under a suspended load! When operating never stand below the boom system or load!



▲ WARNING

Never slew at full speed to the final position. This will damage the slewing system.

▲ **WARNING**

Never push a load along the ground or the vehicle load space with the extension boom. This can cause damage, that will need expensive repairs, to the extension cylinder.

▲ Never use the extension boom as a jack. This could damage the slewing bearings and the connection between the crane column and the crane base.

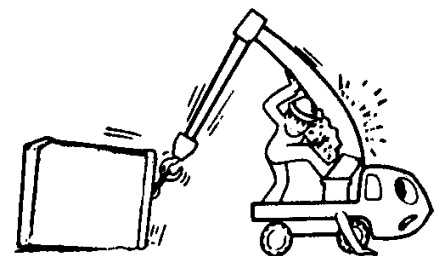
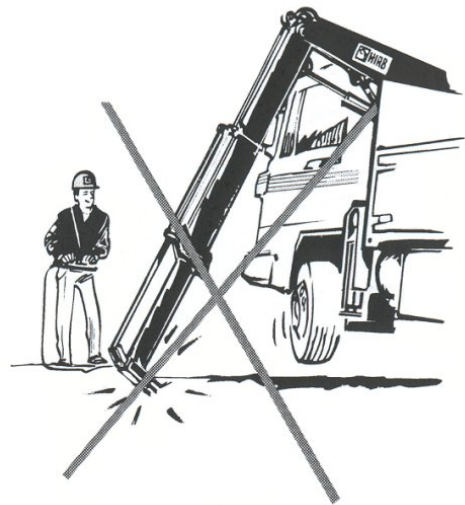
▲ Always lift the load from the ground before you start to slew. Do not tow the load over the ground. This can damage the boom system.

▲ If you are working with loads in tight openings (for example, windows) :

Check that the boom system can move freely upward and downward.

The boom system will bend somewhat when loading and unloading the crane.

▲ If the boom system is in a high position (inner boom above 70°) do not allow the boom to lower at full speed. The crane can go into uncontrolled movement.



▲ When loading the vehicle :

Take the load off the outrigger legs by withdrawing them slightly.

The outrigger legs must remain in light contact with the ground.

▲ Never operate the outrigger legs if the crane has a load.

▲ CAUTION

Operate the crane with smooth and gentle lever movements.

▲ If a cylinder is at its end position, free the operating lever.

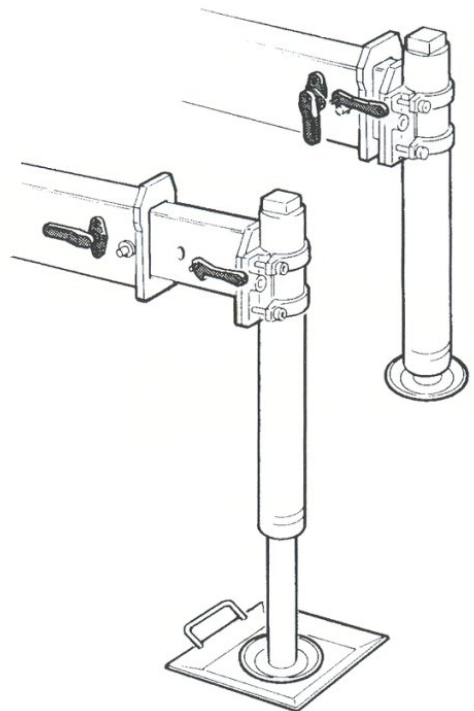
Otherwise you will damage the hydraulic system.

3-6-3. Ending crane operation

▲ DANGER

Always end crane operation as follows :

- Fold up the crane according to the instructions in the Operation and Maintenance for your type of crane.
- Withdraw the outrigger legs and outrigger extension beams.
- Lock the outrigger legs and outrigger extension beams.



- Check that the locking works properly.
- Disengage the P.T.O or power supply after the work.
If you drive with the P.T.O or power supply engaged,
this will cause serious damage to the P.T.O/gearbox combination.
- Only after doing so should you drive away with the vehicle.

▲ DANGER

After use, always place the crane in the transport position!

If you can't park the crane and lifting accessories in the transport positions, but have to park it on the load space or over the load ;
secure the boom and the lifting accessories to prevent any movement
of
the crane and the lifting accessories.



3-7. Driving with the crane

▲ DANGER

Never drive the vehicle if there is a load suspended from the crane.

▲ Before you start to drive away :

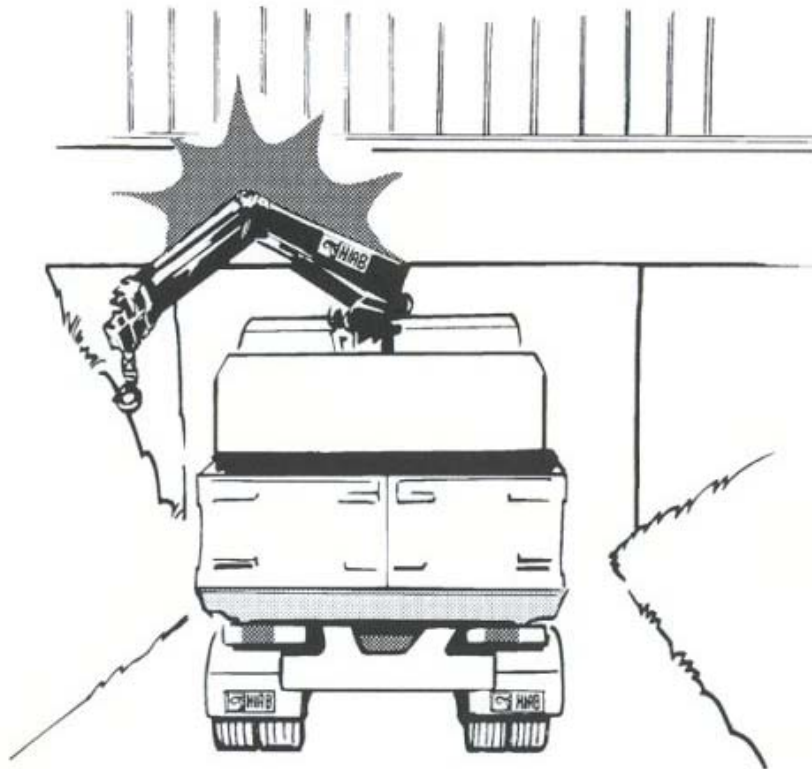
Check that you have no pump flow to the crane control valve.

The PTO or power supply must be disengaged.

▲ Take care that the width and height of the crane in the transport position

can produce no danger because of the headroom of bridges, tunnels etc.

▲ Take care with overhead power lines! Be sure that a part of the crane never comes in contact with overhead power lines.

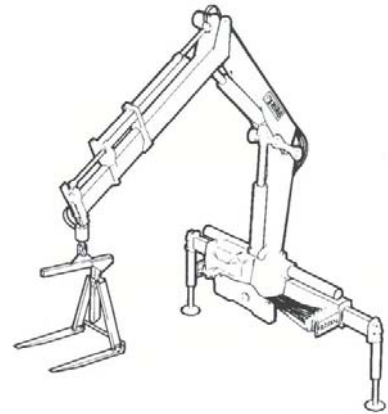


3-8. Use of lifting equipment

▲ DANGER

Use only lifting accessories (winch, grapple, rotator) which are suitable for your crane.
Get in touch with a HIAB dealer.

▲ Never attempt to install add-on lifting accessories yourself! Add-on lifting accessories may only be installed by an authorized HIAB dealer.



▲ When using lifting accessories :

Follow the instructions supplied with the equipment! Watch out for hazards!

Never try to adjust lifting accessories when you are working on the crane!

▲ DANGER

After fitting of the lifting accessories :

1. Check that the lifting accessories is securely fixed.
2. Only then should you use your crane.



▲ WARNING

When connecting and disconnecting lifting accessories :

- Clean the couplings.
- Dirt will damage the hydraulic system.
- Take care that your fingers are not trapped.

3-9. Use of demountable cranes

▲ DANGER

Ensure that there are no unauthorized persons in the immediate vicinity of the crane. When putting the crane onto or off the vehicle people can suffer fatal crushing injuries!

▲ After setting up : Check that the crane is properly locked!

▲ WARNING

Be cautious when putting the crane onto and off the vehicle. Putting it on and off roughly can seriously damage the crane or the vehicle.



3-10. Maintenance and service

▲ DANGER

Only carry out the maintenance yourself that is prescribed in the Operation and Maintenance for your type of crane.

All other maintenance work may only be carried out by HIAB service workshop!

▲ Do not do any welding work on the crane yourself! Welding work on the crane may only be carried out by, or in close consultation with, a HIAB service workshop.



▲ WARNING

Before welding on the vehicle

1. Disconnect the MINUS (-) cable,
2. Disconnect the PLUS (+) cable.
3. Place the earth connection as close as possible to the welding spot.
4. After this the welding work can be carried out.

After welding on the vehicle

1. Connect the PLUS (+) cable
2. Connect the MINUS (-) cable

▲ DANGER

Do not drill into the crane yourself.

Drilling work on the crane may only be carried out by, or in close consultation with, a HIAB service workshop.

▲ Never try to reinstall the crane.

Only a HIAB Dealer. may reinstall the crane.

▲ WARNING

Carry out the periodic maintenance according to the Operation and Maintenance for your type of crane.



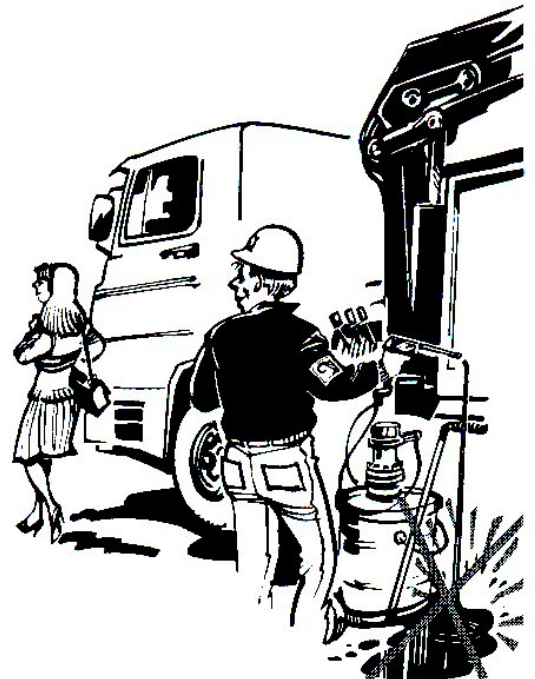
!NOTE

Always use original HIAB parts and tools.

▲ WARNING

Take the crane at least once a year to a HIAB service workshop for inspection and maintenance.

▲ Maintain lifting accessories according to the supplier's instructions.



- ▲ Clean your crane and accessories regularly, but :
 - Do not use any aggressive cleaning agents.
 - Never use a high-pressure cleaner on the control valves, cylinders, oil tank or on electronic parts. Only the crane surface may be cleaned with a high-pressure cleaner

▲ **WARNING**

Remember the environments.

- Do not spill oil when topping-up.
- Dispose of waste oil and oil filters to local regulations.

3-11. Faults

▲ **DANGER**

Ensure that faults in the crane are rectified immediately!

Follow the instructions for faults, in the Operation and Maintenance for your type of crane, exactly.

Never rectified faults yourself that may only be rectified by a HIAB service workshop.

▲ **DANGER**

If there is an oil leakage from the hydraulic system :

Keep well away from an oil leak.

The oil spraying out can cause serious injuries.

The oil in the hydraulic system is at a high pressure.

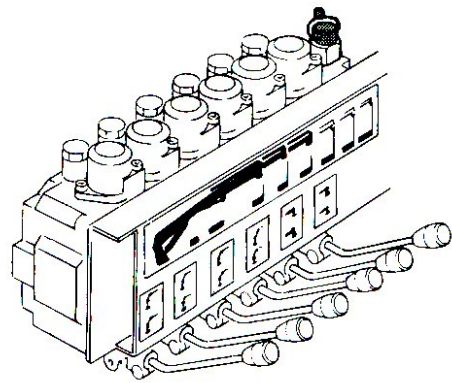
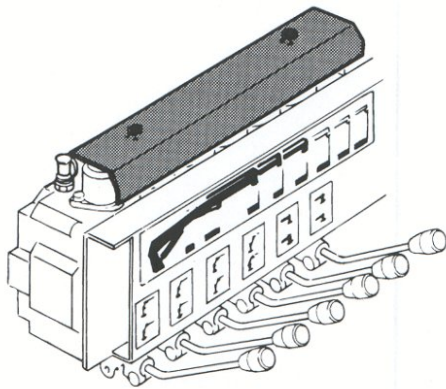
1. Disengage the P.T.O or power supply.
2. For further instructions see the Operation and Maintenance for your type of crane.

3-12. Warranty

!NOTE

HIAB only provides a warranty if :

- The instructions for maintenance and service have been followed, and
- Original HIAB parts have been used, and
- All the seals are still intact and
- The maintenance schedule in your Crane logbook is filled in up-to-date.

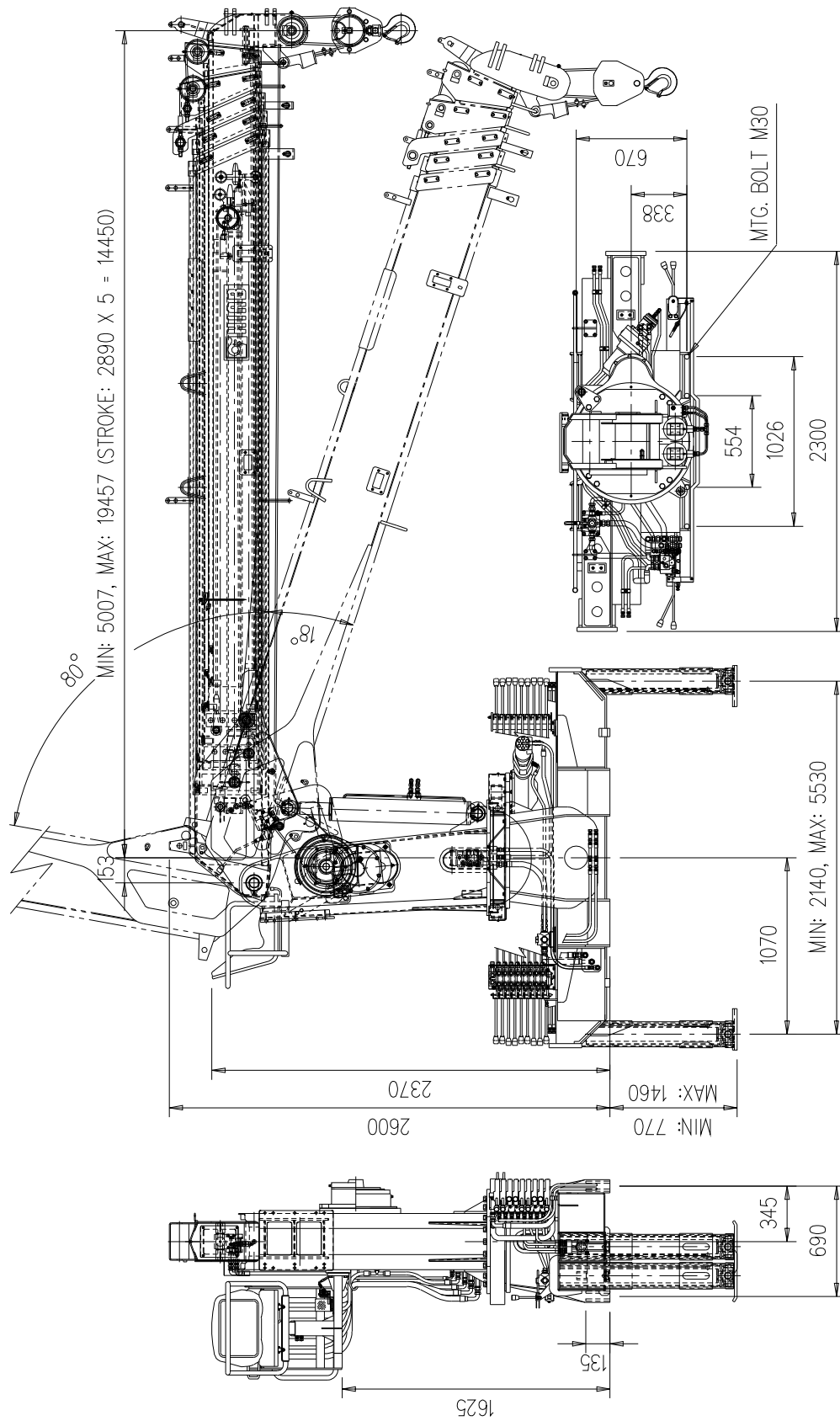


4. Technical description

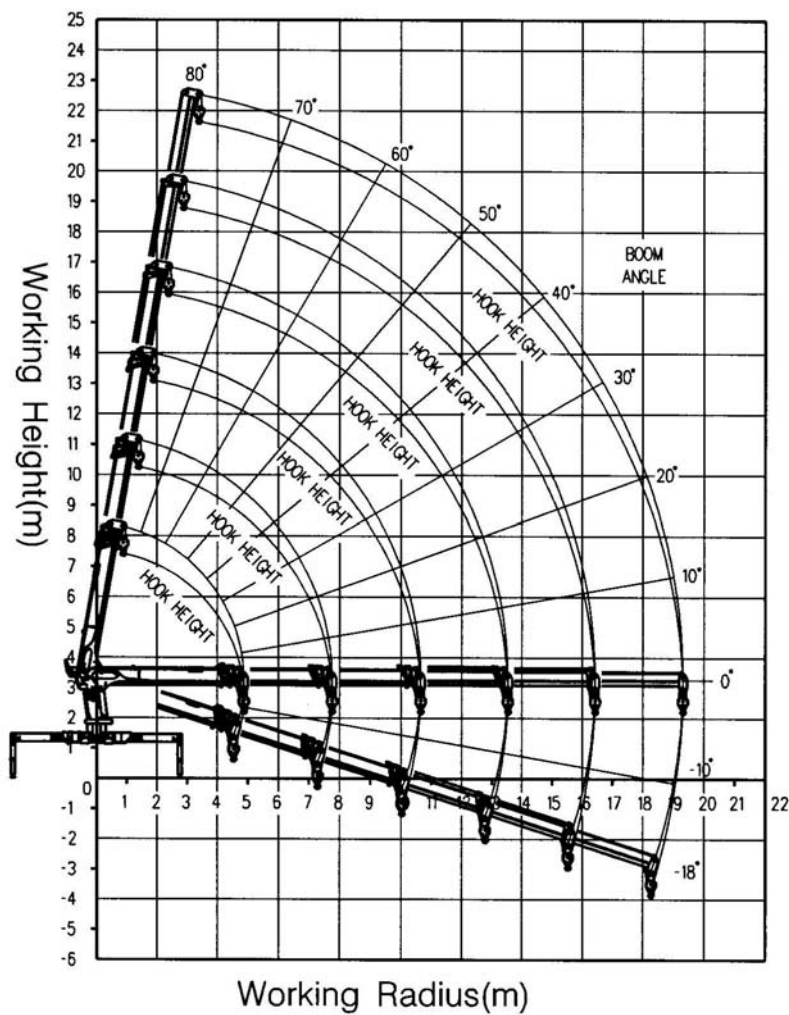
4 - 1 Specification

Description		Specification	Remarks
Lifting Capacity		18.1 ton-m	
Max. working Radius		19.5 m	
Outreach - Lifting Capacity		1.62 m - 8,000 kg 3.88 m - 3,630 kg 6.89 m - 2,050 kg 11.84 m - 1,140 kg 15.57 m - 770 kg 19.17 m - 520 kg	
Max. working height		20.6 m	
Rated oil Flow		63ℓ / min (1000 rpm)	
Working pressure		210 bar	
Boom	Type	Hexagonal, 6 sections	
	Lifting angle/speed	-18 ~ 80°/ 18 sec	
	Extension speed	14.45 m / 33 sec	
Winch	Type	Spur gear reduction type with mech. brake	
	Lifting capacity	8,000 kg (4 falls)	
	speed	min. 8.m/min ~max.11m/mm	
Slewing	Type	Worm gear reduction	
	Angle	360 deg continue	
	Speed	1.8 rpm	
O / R Span		5.7 m	
Safety function		Counter balance valve Pilot check valve Pressure relief valve Hy'd swing brake Hook latch Winch auto brake	
Weight		3,250 kg	with support legs

4 - 2 Outline view

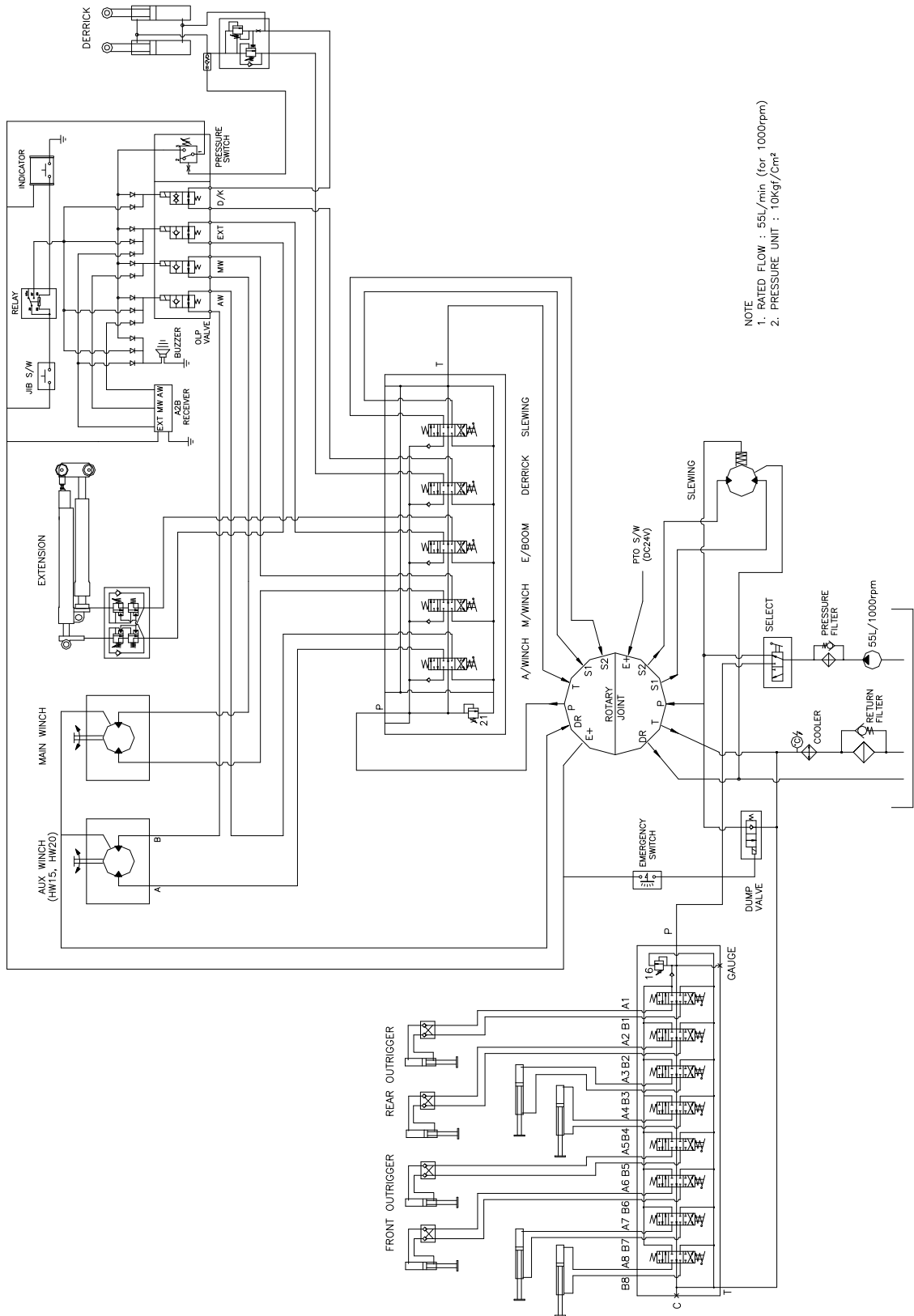


4 - 3 Lifting capacity table & working radius



boom angle	BOOM (m)											
	1 st boom		2 nd boom		3 rd boom		4 th boom		5 th boom		6 th boom	
	R(m)	Q(kg)	R(m)	Q(kg)	R(m)	Q(kg)	R(m)	Q(kg)	R(m)	Q(kg)	R(m)	Q(kg)
80°	0.75	8,000	1.25	6,800	1.75	4,500	2.25	2,400	2.76	1,800	3.26	920
70°	1.62	8,000	2.61	5,000	3.60	3,560	4.58	2,400	5.57	1,800	6.56	920
60°	2.44	6,320	3.48	3,630	5.33	2,550	6.77	1,940	8.22	1,540	9.66	920
50°	3.17	5,250	5.03	2,950	6.89	2,050	8.75	1,540	10.60	1,210	12.46	920
40°	3.81	4,610	6.02	2,540	8.24	1,750	10.45	1,300	12.67	1,010	14.88	810
30°	4.33	4,170	6.83	2,260	9.33	1,540	11.84	1,140	14.34	880	16.84	700
20°	4.71	3,840	7.42	2,050	10.14	1,390	12.86	1,010	15.57	770	18.28	610
10°	4.94	3,500	7.79	1,850	10.63	1,240	13.48	900	16.33	680	19.17	520
0°	5.02	3,170	7.91	1,650	10.80	1,100	13.69	780	16.58	580	19.47	440
-10°	4.94	2,780	7.78	1,400	10.63	910	13.48	640	16.32	460	19.17	340
-18°	4.76	2,370	7.51	1,140	10.26	720	13.01	490	15.76	340	18.51	230

4 - 4 Hydraulic diagram



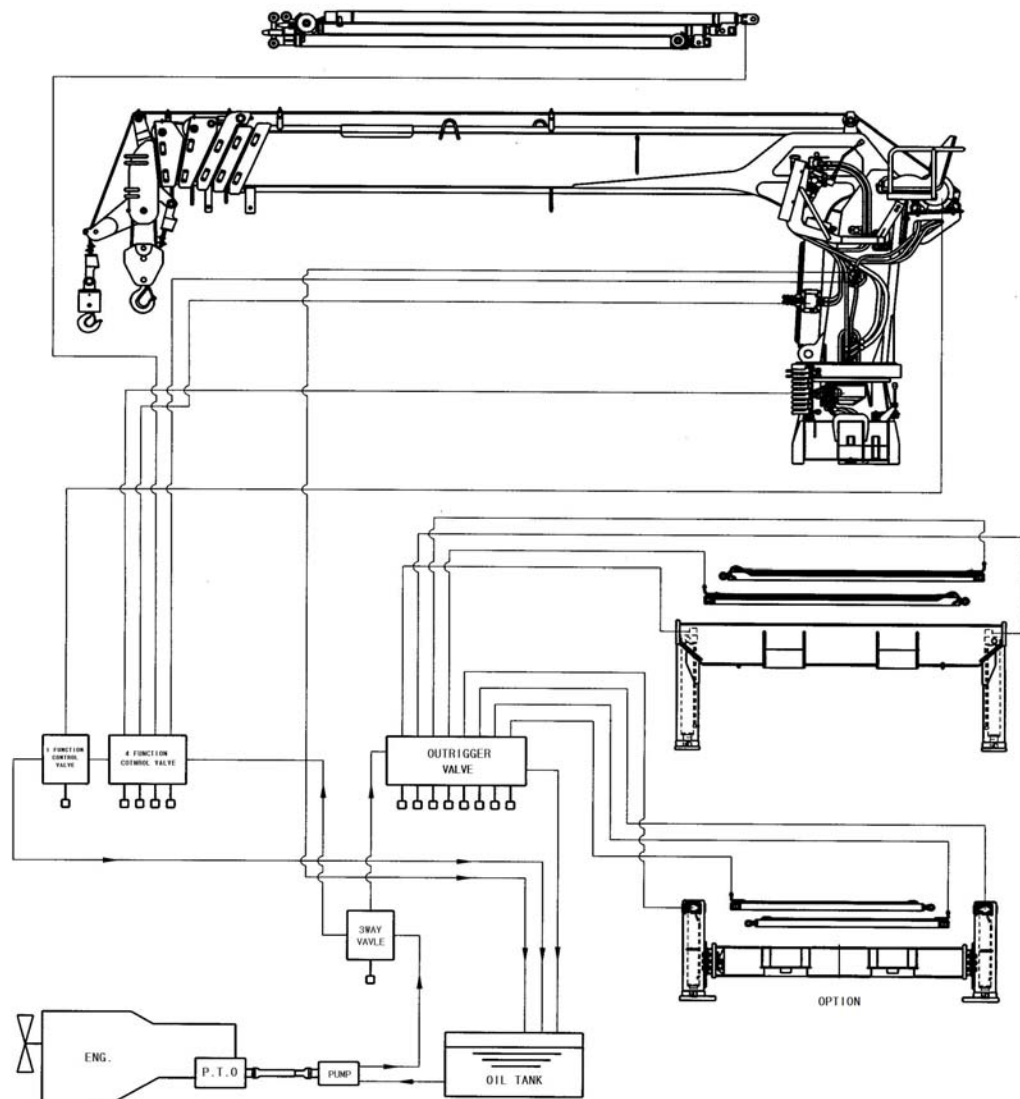
NOTE
 1. RATED FLOW : 55L/min (for 1000rpm)
 2. PRESSURE UNIT : 10Kgf/Cm²

5. General description

5 - 1 Basic operation principle

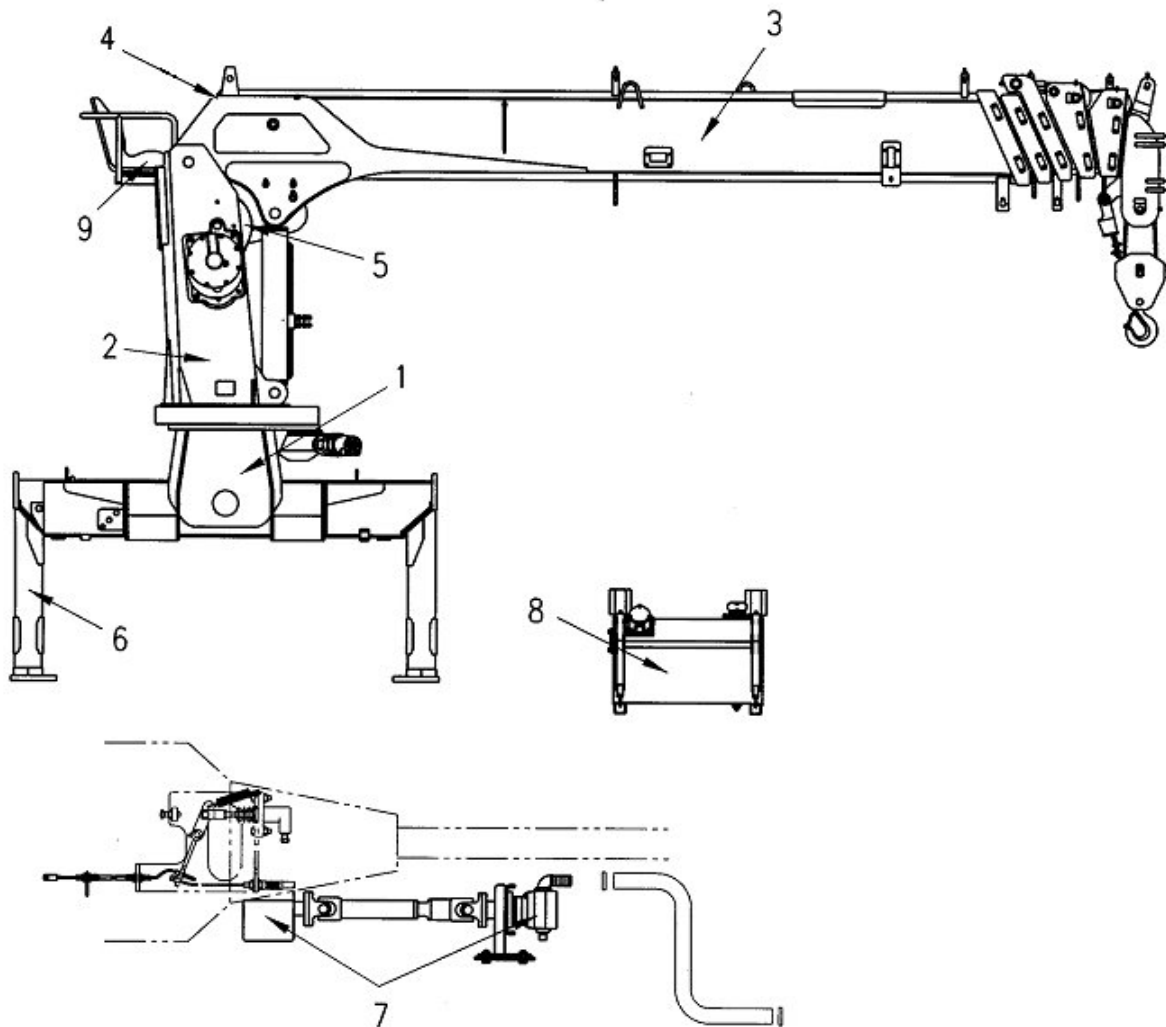
Hiab 190TM crane consists of mainly steel structures and hydraulic components.

The required power source for crane operation comes, via the chassis' power take off (PTO), from the hydraulic pump giving high pressure hydraulic oil. This high pressure oil operates the cylinders and motors through the control valve and returns to the oil tank.



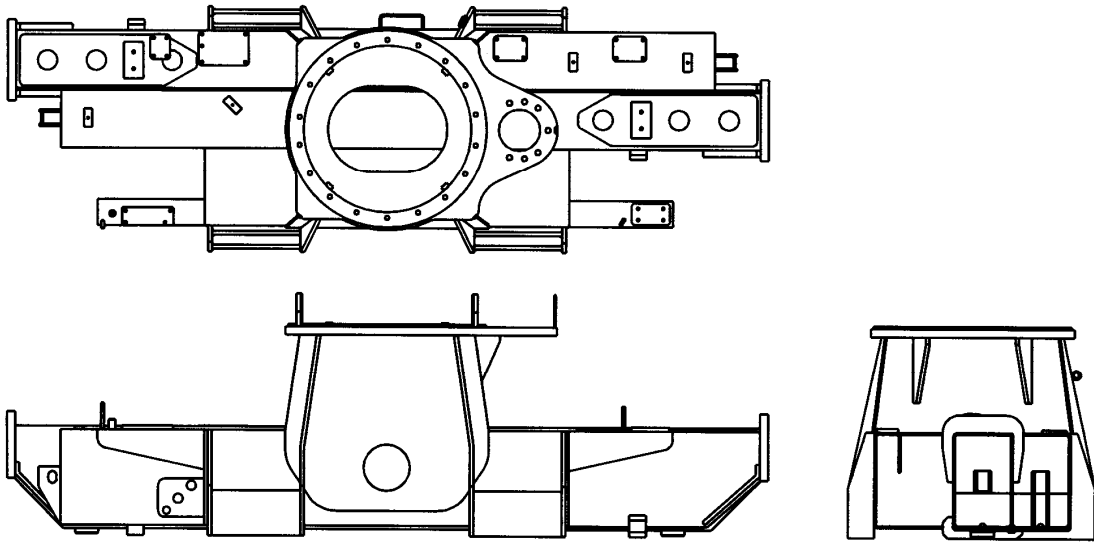
5 - 2 Main components

- 1) Base
- 2) Column
- 3) Boom system
- 4) Control valve
- 5) Winch
- 6) Outrigger system
- 7) PTO & Pump
- 8) OIL TANK
- 9) TOP SEAT

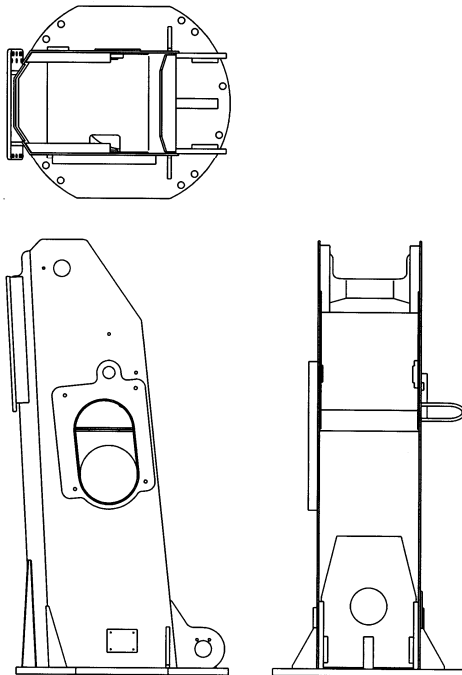


5 - 3 Base

The base is connected with the column structure by slewing bearing, which makes the crane rotate, and is mounted on the chassis frame with strong anchor bolts.



5 - 4 Column



The column is of a closed welded box design and connected with the base.

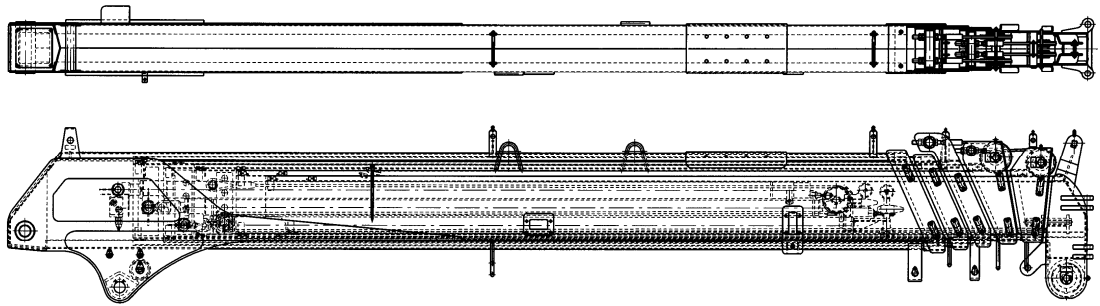
The column supports the boom system via derrick cylinder.

The winch system is mounted in the column structure.

5 - 5 Boom system

The boom system consists of main boom, six extension booms and extension cylinders moving each boom.

The three cylinders are of a double acting type. The counter balance valve of each cylinder makes the cylinders operate at constant speed regardless of the suspended load.



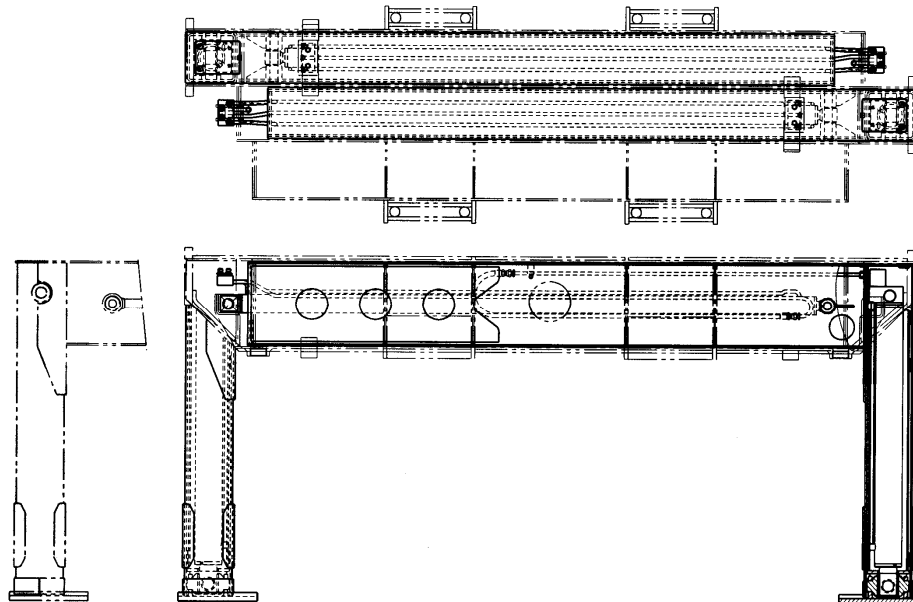
5 - 6 Control Valve

The Hiab 190TM stiff boom crane is equipped with two(2) 4-function control valves connected serially.

One is for main controls of the crane (slewing, boom lifting, extension, winch), and the other is for the outrigger control (outrigger beam extending, outrigger jack cylinder). Both valves are equipped with built-in main relief and port relief valves shown in the hydraulic diagram. The relief valves makes that the crane can not lift in excess of the designed load chart.

5 - 7 Outrigger system

The outrigger system consists of outrigger beam and legs which make the chassis stable when the crane is operating. The pilot check valves are installed on leg cylinders to prevent the leg cylinders to go down when driving and from hose failure when operating the crane. Before operating the crane, spread the outrigger and settle the outrigger firmly on the ground to prevent tilting or too much stress on tires and frame of the chassis.

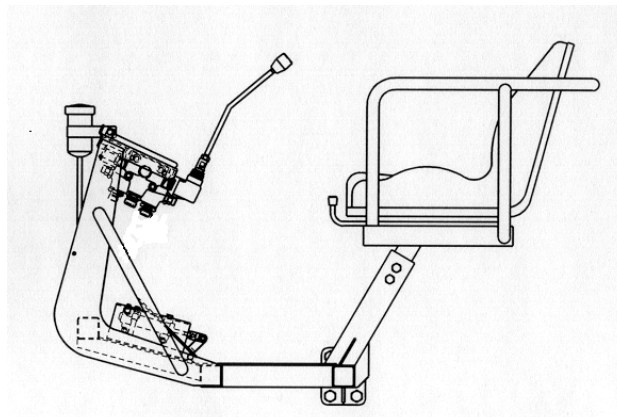


5 - 8 Winch

The winch consists of hydraulic motor, gearbox and winch drum. The winch is installed inside of the column structure. The mechanical brake is included in winch gearbox.

5 - 9 Top seat

4-function main control valve which controls slewing, boom lifting, extension, winch is mounted on the top seat with manual acceleration pedal to control chassis' rpm. Also the top seat can be adjusted to fit operator's body.



5 - 10 Electric OLP system [option]

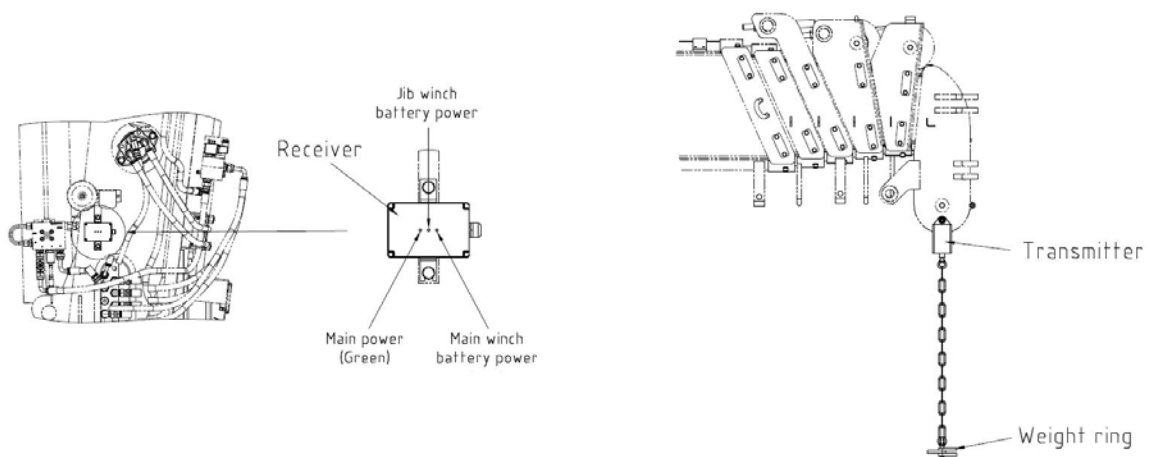
Over load protection alarm and cut-off system is installed on HIAB 190TM.

When OLP is activated, only the extension can be moved inwards and the winch can be lowered to solve the over load situation.

5 - 11 Over winding alarm and cut-off (A2B system) [option]

Hiab 190TM is equipped with an over winding alarm and cut-off system. The device is a wireless type.

When the hook block hits the weight ring at the boom tip, the alarm and cut-off system will be activated.

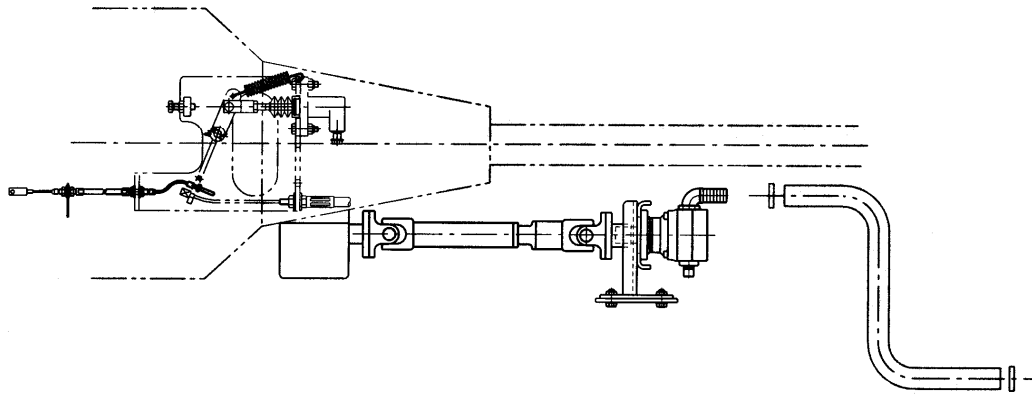


- Before operating the crane, check the power LEDs on the receiver box. Make sure that the left LED for main power is lit green and two warning LEDs for batteries in the transmitters are not lit when A2B works normally. If the middle or right LED is blinking red, the battery inside the transmitter needs to be replaced. The battery type is AA, 1.5V and two batteries are installed on each transmitter.
- If the alarm is activated, retract the boom or lower the hook.
- Be careful when extending the boom or raising the hook because the alarm system cannot be activated due to a fault.

5 - 12 PTO & pump

The PTO is mounted to the gearbox of the chassis. This rotating power rotates the pump creating high hydraulic oil pressure. The cylinders and motors are activated by this high pressure oil.

The PTO is designed according to the chassis, so you must consult the chassis manufacturer when you select the PTO.



5 - 13 Oil Tank

The Hiab 190TM crane is equipped with an oil tank for separate mounting.

The oil tank consists of tank body itself, return filter, suction strainer, air breather, oil level gauge and drain plug which can be used for drainage of the water or some dirt accumulated in the tank bottom.

6. Operation

6 - 1 Before operating the crane

- Secure the hand brake of the chassis
- Check the oil level in the hydraulic oil tank
- Engage the PTO
- Extend the outrigger beam and down the outrigger legs firmly on the ground

6 - 2 Warming up when cold weather

In cold weather, the viscosity of the operating oil could be very high. It can make some damages to the hydraulic components. Please warm up as follows.

- Engage the PTO and run the hydraulic oil pump at low RPM.
- After 10-15 minutes without movement of the control valve, operate the crane slowly.

6 - 3 Operating the outrigger

The outrigger control valve levers are vertically installed on both sides of the crane.

The first lever : front left side shift cylinder

The second lever : front right side shift cylinder

The third lever : front left jack cylinder

The fourth lever : front right jack cylinder

The fifth lever : rear left side shift cylinder

The sixth lever : rear right side shift cylinder

The seventh lever : rear left jack cylinder

The eighth lever : rear right jack cylinder

(All directions here specified when you are looking from rear towards the truck cab)

- Extend the outrigger beam
- Down the outrigger legs firmly on the ground

The stability is up to the length of outrigger extension.

Be careful not to lift up the chassis ' tires.

Please avoid sloped grounds.

The load is clear of the ground.

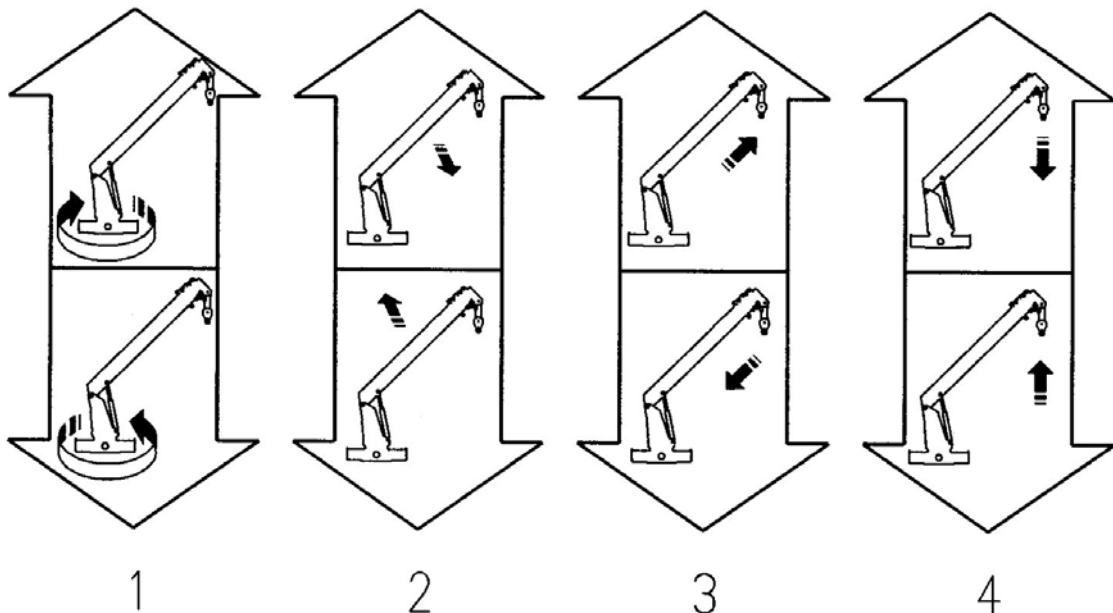
6 - 4 Operation of crane

Standard control valve 4 levers for operating crane.

Before operating the crane, adjust the four (4) way valve lever to main control valve side.

Please refer to below chart explaining the function of each lever.

NO.	Operated components	Pull	Push
1	Slewing	Left	Right
2	Derrick	Up	Down
3	Extension	Retracting	Extending
4	Winch	Up	Down



(note)

1) When boom raising / lowering,

Move the lever slowly when loaded.

Fast movement could cause tilting of the chassis or damages to the crane due to dynamic forces.

2) When hook raising / lowering,

Do not lower more when load touches the ground.

If you do so, the wire can get tangled.

When load is lowered, minimum 3 turns of wire should remain on the drum

To keep good laying of the wire, wind slowly.

3) When extending,

Thanks to selector valve, boom extends from 1ST to the last sequent.

When retracting, conversely.

Be carefully aware of the hook movement.

When extending, hook is up and when retracting, hook is down.

4) When slewing, slew as slow as possible

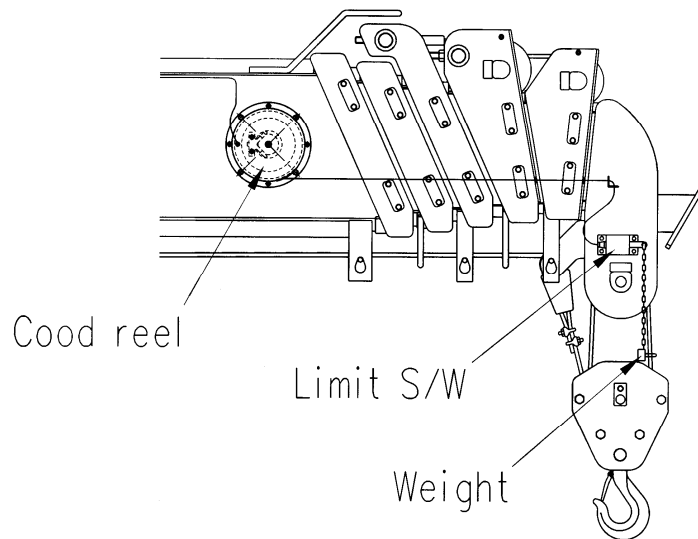
When you rotate the crane to the truck cab position, be careful about the stability.

Never slew until the load is clear of the ground.

6 - 5 Over winding alarm [option]

Hiab 190TM is equipped with an over winding alarm system. If the hook block is too near the boom tip, the alarm system will be activated.

- Before operating the crane, turn on the over winding alarm switch.
- If the alarm is activated, retract the boom or lower the hook.
- After operating the crane, turn off the over winding alarm switch.

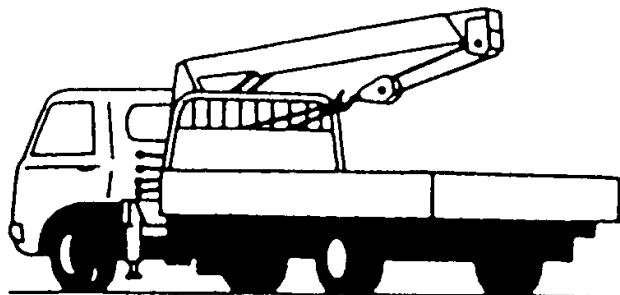


(note) Do not shorten the wire length.

Please be careful when the extending boom or the raising hook, because the alarm system can not be activated when of the electric wire is damaged etc.

6 - 6 After operation the crane (for driving)

- Retract the booms fully
- Rotate the boom at the driving position
(front or rear side. Refer the sticker on slewing cover and column base plate)
- Retract the outrigger legs fully
- Retract the outrigger beam fully
- Lower the boom at lowest position
- Settle the hook with the safety rope on the chassis
- Operate (wind) the winch until the safe rope is tensioned
- Put manual accel lever put at neutral position
- Disengage the PTO, then the pump stop to run



(note) Driving with the pump running may cause PTO and pump damages.
It's very dangerous to drive without the hook in a fixed position
Check again that the outrigger system is fully retracted and locked.

7. Safety instruction when operating

- Press the clutch pedal fully and then engage or disengage the PTO
- When cold weather, please warm up the operating oil for 10 - 15 minutes
- Operate the crane on even ground condition
- Before operating the hook, turn on the overwinding alarm switch
- Be careful not to touch the hook block on the ground, which could cause the wire to get tangled
- Do not drag the load using the crane which may cause damage to the crane
- Do not exceed the lifting capacity shown in the load table
- Slew as slow as possible
- When load and unload in underground, check the remaining wire length on the winch drum. Minimum 3 turns.
- Do not leave from the operating position when load is suspended
- Do not be allowed that unauthorized persons is in the working area
- Make sure that the hook is firmly fixed and the PTO disconnected before driving
- You should consult your dealer and/or trained person if you find some problems

- Operate the crane smoothly

If operated fast, the life cycle of the crane can be reduced and/or there can be some component troubles.

At starting/finishing point, the movement should be reduced.

- Before operating the crane, make sure the outrigger system is extended and firmly settled on the ground. If the ground is not rigid, use auxiliary support plate under the support leg plate.

(note) In case low rpm of the engine, boom can

tremble and/or do not move. In this case a little increase of the engine rpm can make it possible.

The oil temperature should be kept below 80°C. High oil temperature can cause damages to the hydraulic components.

From 45°C to 55°C is the best operating temperature for the crane.

8. Preventive service & Maintenance

8 - 1 Daily Inspection

Where?	What?
Power take off	<ul style="list-style-type: none"> ● Abnormal noise and/or heat? ● Engaging movement is smooth or not?
Drive shaft	Loosened or not?
Oil tank	<ul style="list-style-type: none"> ● Oil level? ● Leakage?
Slewing system	<ul style="list-style-type: none"> ● Leakage? ● Greasing condition? ● No loosened bolts? ● Abnormal noise?
Derrick cylinder	<ul style="list-style-type: none"> ● Shaft condition? ● No loosened bolt? ● Leakage? ● No movement when stopped?
Boom system	<ul style="list-style-type: none"> ● No loosened bolt? ● Any crack? ● Smooth extending/retracting?
Winch gear box	<ul style="list-style-type: none"> ● Oil leakage? ● Abnormal noise?
Pump	<ul style="list-style-type: none"> ● Mounting condition? ● Leakage? ● Abnormal noise?
Hook	<ul style="list-style-type: none"> ● Rotate when loaded? ● Any damages?
Wire rope	Any damage?
Control lever	<ul style="list-style-type: none"> ● Smooth movement? ● Return neutral position well when release the lever?
Outrigger system	<ul style="list-style-type: none"> ● Any crack? ● Leakage of the cylinder? ● Any internal leakage?
Control valve	<ul style="list-style-type: none"> ● Any leakage? ● Smooth movement?
Overwinding alarm	Alarm when activated?
Hook latch	Enough spring tension?
Pipes & hoses	Any leakage?
Base	Mounting bolt condition?

8 - 2 Slewing bearing & mounting bolts

If there is some abnormal noise from the slewing system and/or the mounting parts when operating the crane or driving, please consult your Hiab dealer or service center. That kind of noise could come from loosened condition of the mounting bolts. At least, mounting bolts of slewing bearing located inside of the column should be checked every 2 years.

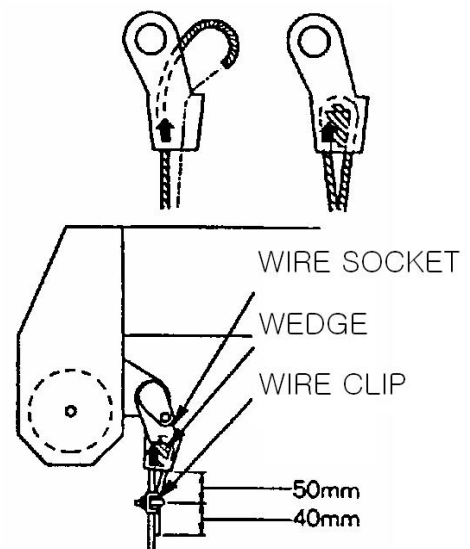
8 - 3 Wire rope

1) How to fit the wire rope

Pass the end of a wire rope into the wire socket along the arrow mark on the socket.

Do not forget to attach the wedge and wire clip.

When attaching the wire socket to the boom, make sure that the arrow mark on the face of the wire socket faces outwards as shown in the drawing.



2) Adjusting twisted wire rope

Wire rope tends to turn in the untwisting direction under tension. When the hook carries two or more wire rope slings, they can easily turn, especially when they are still new. Wire rope becomes steady with use.

The wire rope adjustment procedure is:

- Extend the boom fully

- Set the boom to an angle of about 65 deg

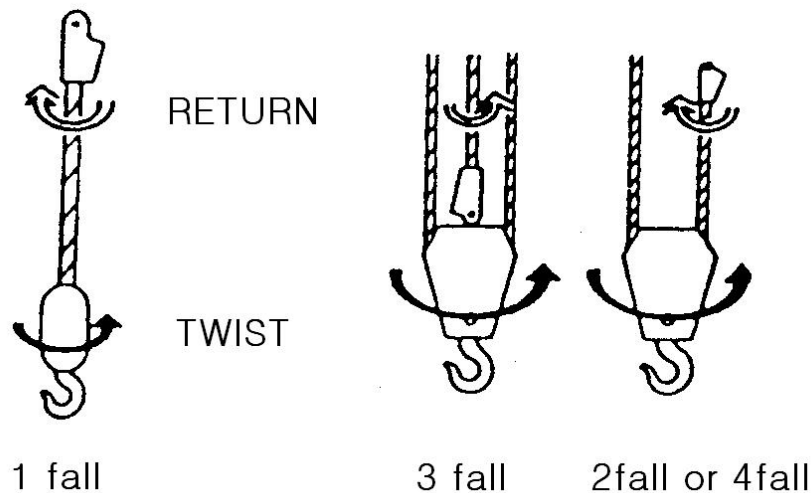
- Hoist a load so that the wire ropes will be tense

- Check the wire ropes for the number of turns

- Remove the wire socket, and turn it in the wire rope untwisting direction by the number of wire rope turns multiplied by the number of wire rope slings.

- After attaching the wire rope socket back in position, wind up and down the wire ropes all the way and repeat it a few times to check that they are back to normal. If there is still a twist remaining, repeat the above process.

- Turn the wire socket opposite to the wire rope twisting direction, except in the case of 3-rope sling in which case the wire socket should be turned in the same direction.



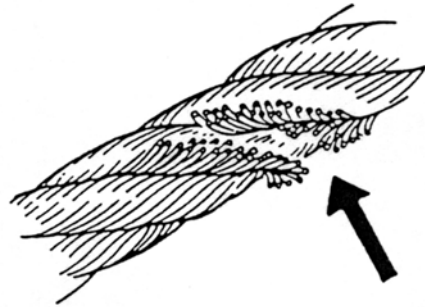
3) How to look after the winch rope

The winch rope must be regularly cleaned and greased for maximum life, bearing in mind that the rope is subject to wear and to heavy stresses which set a limit of its service life. It is good practice to replace the rope at regular intervals by a new one. The gradual wear and unravelling of the rope is difficult to detect and to gauge.

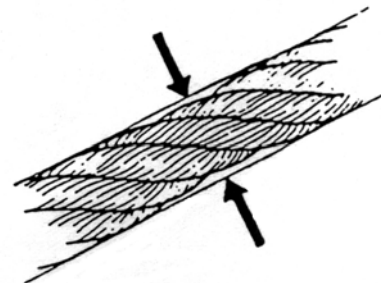
However, the following safety rules applying to winch ropes can be followed.

The winch rope must be changed as soon as any of the following occur;

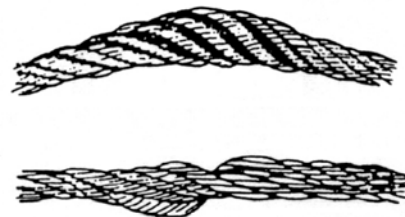
- When 5 % of wires in any length of ten rope diameters are broken, worn or corroded



- When visible changes occur in the diameter (more than 7 %) of the winch in comparison with the normal stretching and diameter reduction of a newly fitted rope



- The rope develops kinks or a heavy spiral twist



4) Lubricating a winch wire

when the rope is used for a long period it becomes dry, which gives rise to rapid wear and to rust attacks.

Accordingly, it is necessary to lubricate or grease the rope at regular intervals.

Lubrication must be carried out as follows:

- Clean dust and dirt off the rope and wipe it dry
- Apply an appropriate amount of a recommended lubricant with a brush, rag or similar implement. Be sure that only a rope lubricant is used.

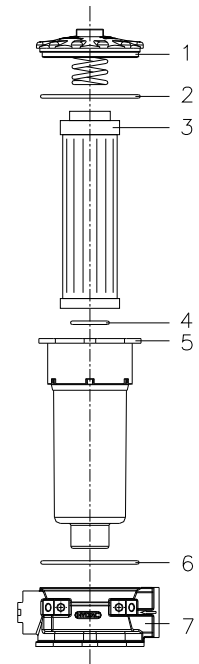
8 - 4 Changing a filter insert

A clean hydraulic system gives better operating economy. The oil filter insert should therefore be changed for the first time after 50 running hours and from then on every 500 running hours, subject to a minimum of at least two changes a year.

For best results, always fit a genuine Hiab insert.

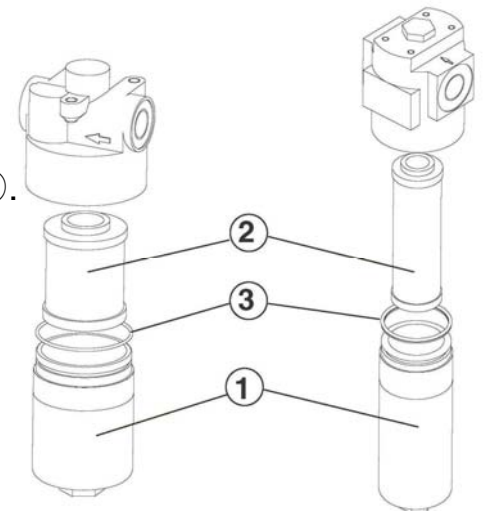
Replacing the return oil filter insert

- Clean the immediate surroundings of the return filter.
- Turn the cover ① to free it while pressing on it
- Pull the return filter out of the oil tank
- Remove the filter insert ③
- Insert a new filter insert
- Fit new sealing rings ②, ④
- Replace the return filter in the tank
- Attach the cover on the return filter



Replacing the filter insert in the pilot filter and in the high pressure filter

- Clean the immediate surroundings of the pressure filter.
- Dismantle the filter housing ①.
- Remove the filter insert ②.
- Clean the filter housing.
- Fit a new filter insert. Also fit new sealings ③.
- Reassemble the filter housing.



▲ WARNING

Dirt will damage the hydraulic system

8 - 5 Inspection points when operating

- Is there any leakage?
- Does the crane operate smoothly?
- Is there any abnormal noise?
- How about the oil temperature?

If the oil temperature is higher than 75 deg C, then stop the crane operation

8 - 6 Inspection after operation

- Clean & smooth for next use?
- Any crack & abnormal noise?
- Any leakage in connections?

8 - 7 Inspection & maintenance after one month in operation

- Check the pressure settings and lead seals
- Check for oil leakage
- Check and advance screwed connections
- Check and advance hose and pipe couplings
- Check catches and other locking devices
- Check the functions and levers of the control valve
- Check hook, ropes and any other lifting gear that is used
- Check that all the prescribed notices are in place
- Carry out a visual inspection of structural parts to detect deformation and cracks etc.
- Cleaning, replacement of filters

- Check oil levels and lubrication in accordance with the lubrication chart in the manual
- Put the crane through test-running and test-loading, and listen for any suspicious noises

8 - 8 Inspection & maintenance after 6 months in operation

- Clean the crane
- Check pressure settings and lead seals
- Check for oil leakage
- Check and advance screwed connections
- Check and advance hose and pipe couplings
- Check catches and other locking devices
- Check the functions and levers of control valve
- Check hook, ropes and any other lifting gear that is used
- Check that all the prescribed notices are in place
- Carry out a visual inspection of structural parts to detect deformation and cracks etc.
- Clean or replace the filters
- Check oil levels and lubrication in accordance with the lubrication chart in the manual
- Put the crane through test-running and test-loading, and listen for any suspicious noises
- Do a security check on the mountings of the pump and anchor bolts
- Clean or change the hydraulic oil

9. Lubrication

9 - 1 Hydraulic oil changing

Check the level in the tank every day. The oil level must be visible in the sight glass. At this check, the crane must be in parked position. Top up with hydraulic oil if necessary.

Hydraulic oil becomes contaminated in time, and malfunctions may begin to appear in the hydraulic system. You should therefore change the hydraulic oil at least once a year.

After changing the oil, you must operate all the hydraulic functions of the crane through their full range. The reason for this is to expel any air that is present, which would otherwise destroy the seals in the hydraulic system.

Always bear in mind that trouble can be minimized by having a clean hydraulic system. For this reason, keep the surroundings clean whenever you have to work inside the hydraulic system.

When changing the oil, change the filters at the same time.

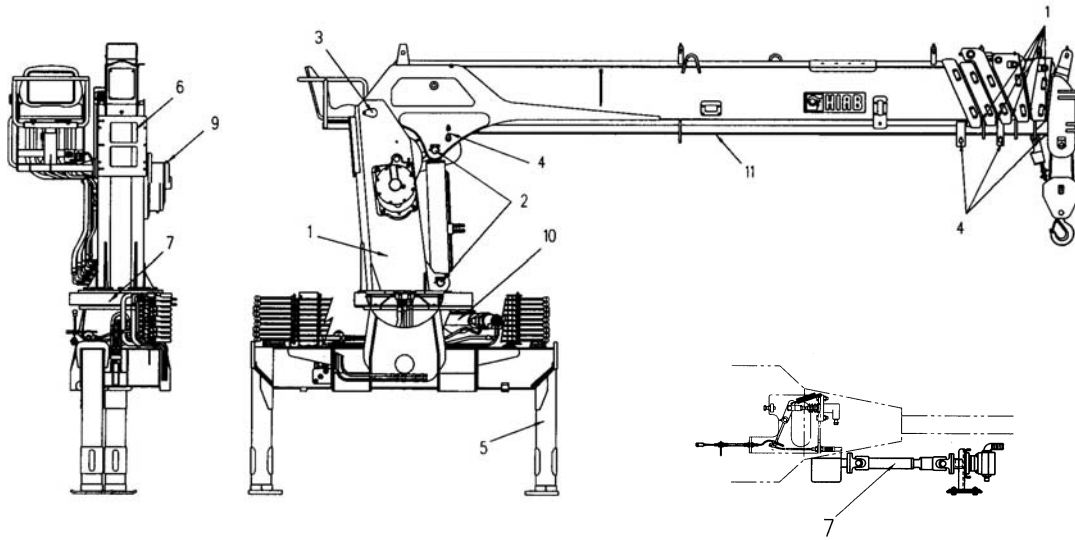
The hydraulic system and the hydraulic fluid are matched in respect of lubricating performance, effect on the seals and other materials, and non-inflammability. For this reason, do not mix different types of hydraulic fluid, such as mineral oils, synthetic fluids and water-based fluids, and never adulterate your hydraulic fluid with diesel oil or alcohol-based products.

Recommendable oil(or equivalents)

- Shell Tellus oil T 46
- Mobil DTE 15M
- Esso Unavis N 46
- Castrol Hyspin AWH-M 46
- Total Equivis ZS 46

9 - 2 Lubrication chart

Good performance and trouble-free operation of the crane depends a great deal on service. For this reason, always follow the recommendation on the lubrication chart.



Pos	Interval	Point	Rec. Lubricant	Q'ty
1	Every day	Boom pads	Shell Alvania EP grease 2 (or equivalents)	20
2		Derrick cylinder shaft		2
3		Boom + Column shaft		1
4		Wire rope roller		2
5		Outrigger cylinder shaft		2
6	Every week	Winch drum gear	Shell Alvania EP grease 2 (or equivalents)	1
7		Slewing bearing		2
8		Drive shaft		1
9	Every month	Winch gearbox	Shell Spirax HD Gear oil	1
10		Slewing gearbox	Shell Spirax HD Gear oil	1
11		Wire rope	Shell Alvania EP grease 2 (or equivalents)	1

10. Fault Tracing

Fault tracing is mainly based on organized routine for finding a certain functional disorder, its reason and how to correct it. The following charts contain some faults which may arise during operation, how they appear and which steps to be taken.

Most important, however, is that the crane is checked and necessary adjustments made before the crane is taken into operation.

Some common damages and disturbances:

- The crane is incorrectly used in a way for which it is not designed
- The crane and/or its accessories have not been properly maintained
- The crane is operated against obstacles

Fault	Possible reason	Measure
Overwinding alarm system will not be activated	<ul style="list-style-type: none"> ● Low battery voltage ● Fault in buzzer ● wire disconnect 	<ul style="list-style-type: none"> ● Change the battery ● Change the buzzer ● Connect
Still running the engine, but the crane will not operate	<ul style="list-style-type: none"> ● PTO disconnected ● Lack of operating oil ● Low setting of the relief valve ● Damage in pump 	<ul style="list-style-type: none"> ● Check the PTO ● Top up the oil ● Check the relief valve setting pressure ● Repair or change pump
Noise in power take off	<ul style="list-style-type: none"> ● Damages in bearing and/or gear ● Damage in drive shaft 	<ul style="list-style-type: none"> ● Repair or change <p>Change the drive shaft</p>
Noise in pump	<ul style="list-style-type: none"> ● Lack of oil ● Air leaking in suction pipe ● Loosening of mounting bolt of the pump ● Dirt in strainer ● Drive shaft alignment is not good ● Worn out universal joint ● Damage in pump casing 	<ul style="list-style-type: none"> ● Top up the oil ● Tightening ● Tightening <ul style="list-style-type: none"> ● Clean the strainer ● Realign <ul style="list-style-type: none"> ● Change ● Change

Boom do not extend	<ul style="list-style-type: none"> ● Dirt in counter balance valve or damage in seal ● Internal leakage in cylinder ● Sequence valve fault ● Lack of oil 	<ul style="list-style-type: none"> ● Clean and/or change ● Repair ● Clean/repair ● Top up the oil
Boom do not retract	Dirties in counter balance valve or damage in seal	Clean and/or change
Boom automatically retract when loaded	<ul style="list-style-type: none"> ● Internal leakage in cylinder ● Some leakage at connection parts ● Damage in check valve 	<ul style="list-style-type: none"> ● Repair ● Repair ● Clean and change the seal
Some noise in slewing system and/or insufficient torque	<ul style="list-style-type: none"> ● Damage of slewing gear ● Damage of the bearing in the gearbox ● Pump faulty ● Insufficient oil in the gearbox ● Motor faulty 	<ul style="list-style-type: none"> ● Change ● Change the bearing ● Repair/change pump ● Top up the gear oil ● Change motor
Jerky when slewing	<ul style="list-style-type: none"> ● Too much clearance in slewing gear and pinion ● Worn out of the wormwheel in gearbox ● Loosening of the gearbox mounting bolts 	<ul style="list-style-type: none"> ● Adjust the pinion gear ● Change the gearbox ● Tighten the bolts
Outrigger cylinder do not extend	<ul style="list-style-type: none"> ● Lack of oil ● Dirties in relief valve 	<ul style="list-style-type: none"> ● Top up the oil ● Clean and/or repair
Outrigger cylinder retract when loaded	<ul style="list-style-type: none"> ● Damage in pilot check valve ● Internal leakage in cylinder 	<ul style="list-style-type: none"> ● Repair/change ● Repair
Outrigger cylinder down when driving	<ul style="list-style-type: none"> ● Damage in pilot check valve ● Internal leakage in cylinder ● Leakage from the cylinder 	<ul style="list-style-type: none"> ● Repair/change ● Repair ● Repair
Leakage in winch motor	<ul style="list-style-type: none"> ● Drain line is clogged ● Damage of the packing 	<ul style="list-style-type: none"> ● Repair ● Repair
2 nd boom will not retract	Sequence valve faulty	Repair
3 rd boom will not extend	Sequence valve faulty	Repair

Appendix 1 : Wind speeds

Wind force	Wind speed averaged over 10 min. at a height of 10 m		characteristics
	Above flat ground		
	m/s	Wind type	
0	0.0 ~ 0.2	Calm	Calm, smoke rises vertically or nearly vertically
1	0.3 ~ 1.5	Slight breeze	Wind direction recognizable from smoke plumes, wind begins to be noticeable on the face; leaves begin to rustle and weather vanes can start to move
2	1.6 ~ 3.3		
3	3.4 ~ 5.4	Moderate wind	Leaves and twigs in continuous movement, small branches begin to move. Dust and paper begin to move over the ground
4	5.5 ~ 7.9		
5	8.0 ~ 10.7	Fairly strong wind	Small leaved branches make swaying movements : crested waves from on lakes and canals.
6	10.8 ~ 13.8	Strong wind	Large branches moving; you hear the wind whistling In the telephone wires : umbrellas can only be held With difficulty.
7	13.9 ~ 17.1	Severe wind	Entire trees moving; the wind causes difficulty when you walk into it.
8	17.2 ~ 20.7	Stormy wind	Twigs break off, walking is difficult.
9	20.8 ~ 24.4	Storm	Causes superficial damage to buildings(chimney pots, roof-tiles, and TV antennae are blown off).
10	24.5 ~ 28.4	Severe storm	Uprooted trees : considerable damage to buildings etc. (occurs infrequently on land).
11	28.5 ~32.6	Very severe storm	Causes extensive damage (occurs very infrequently on land).
12	>32.6	Hurricane	

Appendix 2 : Signals when using a crane

If you cannot see the load properly, someone else should give you signals. This appendix gives a number of the standard signals.

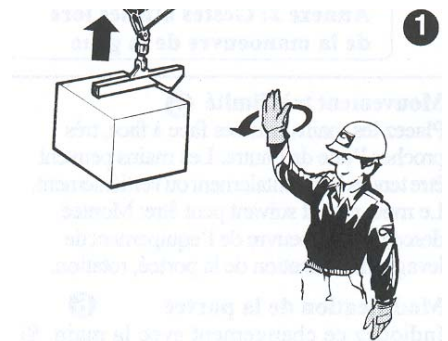
!NOTE

Have the person giving the signal stand facing you as far as possible.

The speed of the hand and arm movements indicate at what speed the crane movement should be made.

Lift

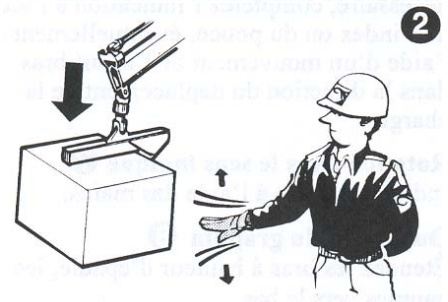
Rotate the fist about the wrist,
with the arm raised at an oblique angle.



Lower

With the arm outstretched, move the hand energetically up and down.

If necessary, the entire arm may be moved.

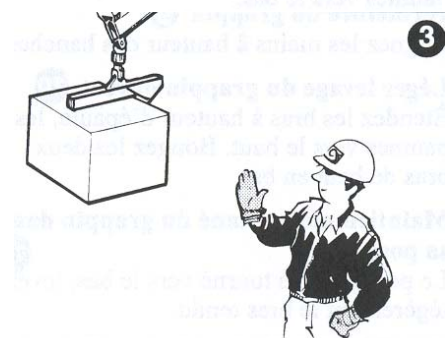


Stop all crane movements

Also : hold the load in position

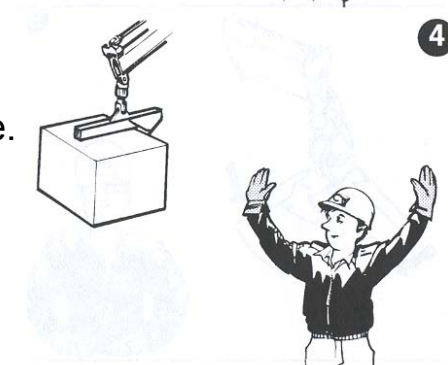
Raise the open hand, with the palm clearly visible, and the arm to shoulder height.

Keep the hand still.



Emergency stop for all movements by the crane.

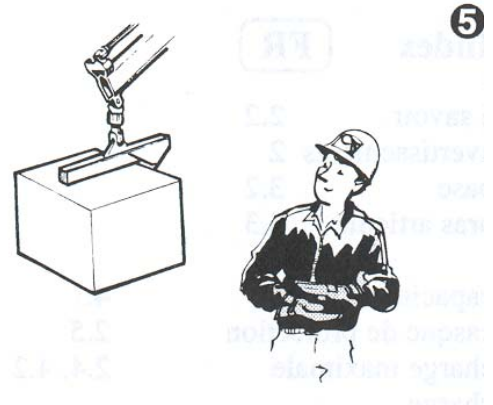
Raise the hands and the arms to an oblique angle.



Very short movement

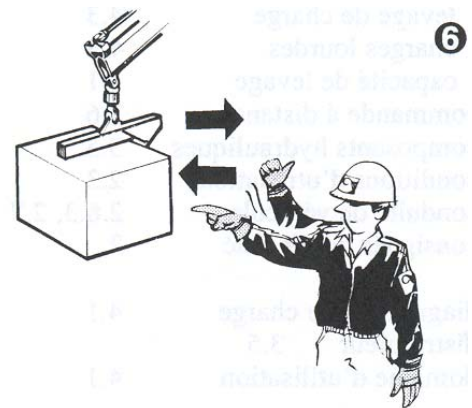
Place the hands a very short distance apart, with the palms facing each other.

The hands may be held either horizontally or vertically. The next movement may be :
Lift, lower, move the lifting gear, change the reach, or turn.



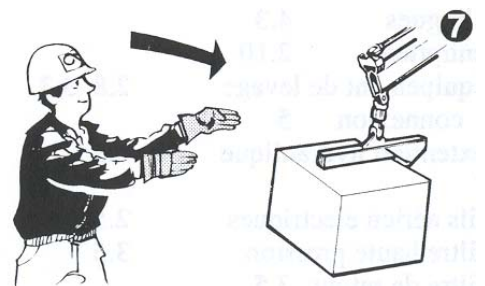
Change the reach

Indicate this by means of the hand, if necessary providing a precise indication with the index finger or the thumb and, if necessary, moving the forearm in the direction in which the load is to be moved.



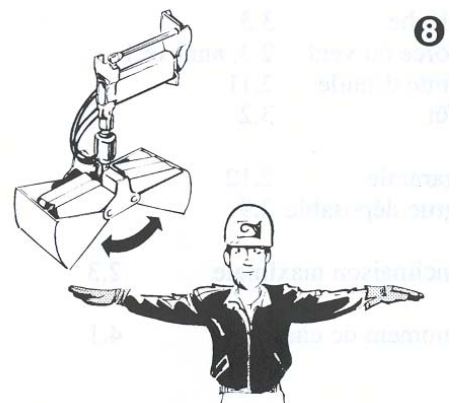
Turn in the direction indicated

Indicate the direction with the hands.



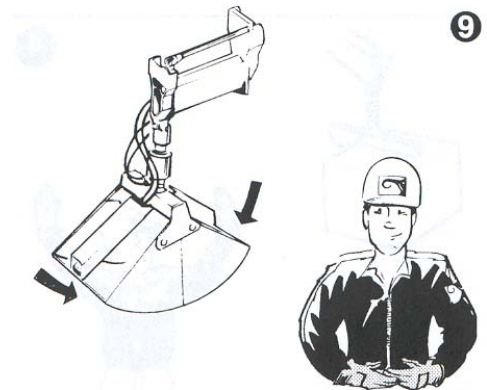
Open the grapple

Extend the arms at shoulder height, with the palms facing downwards.



Close the grapple

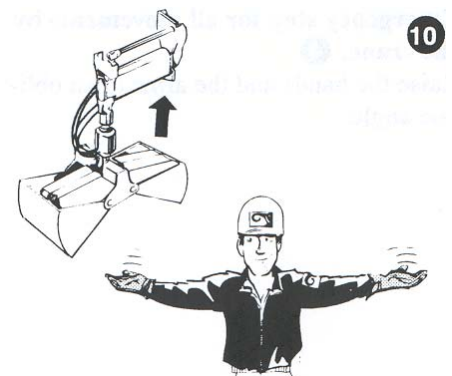
Move both hands close together.



Lift the open grapple a little

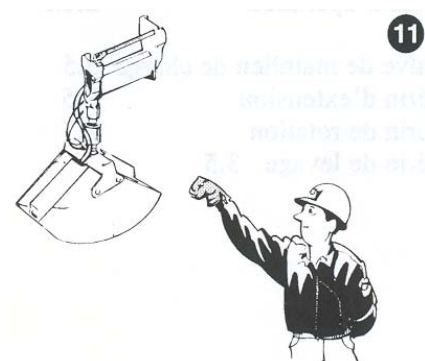
Extend both arms at shoulder height,
with the palms facing upwards.

Make vertical movements with
both arms outstretched.



Keep the grapple in position briefly

Raise the hand slightly drooping,
with the fist clenched.



EN



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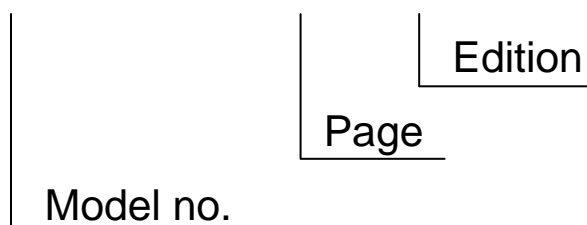
Instruction

This spare parts catalogue has several main divisions each embracing a main component group, where you can find easily the necessary part.

Each drawing is followed by the corresponding written material Parts shown in the drawings are numbers by position starting from 1, drawings are numbered as;

(page numbering)

HIAB190TM - 8 : 0



The position number is listed with written part number, description, quantity and specification / remarks.

When ordering spare parts, please inform;

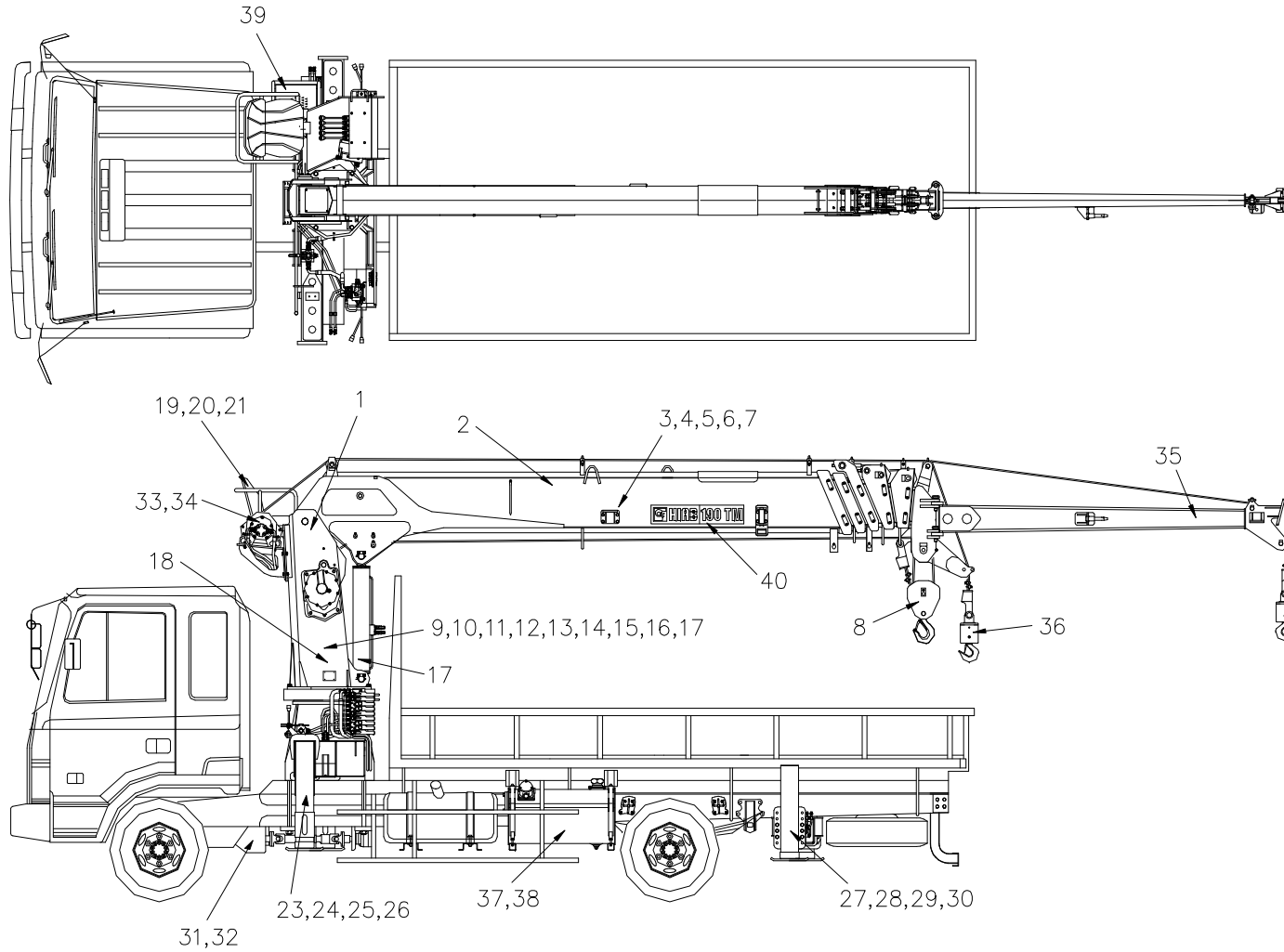
1. Model no.
2. Page numbering
3. Part number & description
4. Quantity
5. Your complete address

This spare parts catalogue can be changed without prior notice will be informed accordingly.



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB190TM-6 0 : 6
2015. 10.



SPARE PARTS LIST



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB190TM-6 0 : 6
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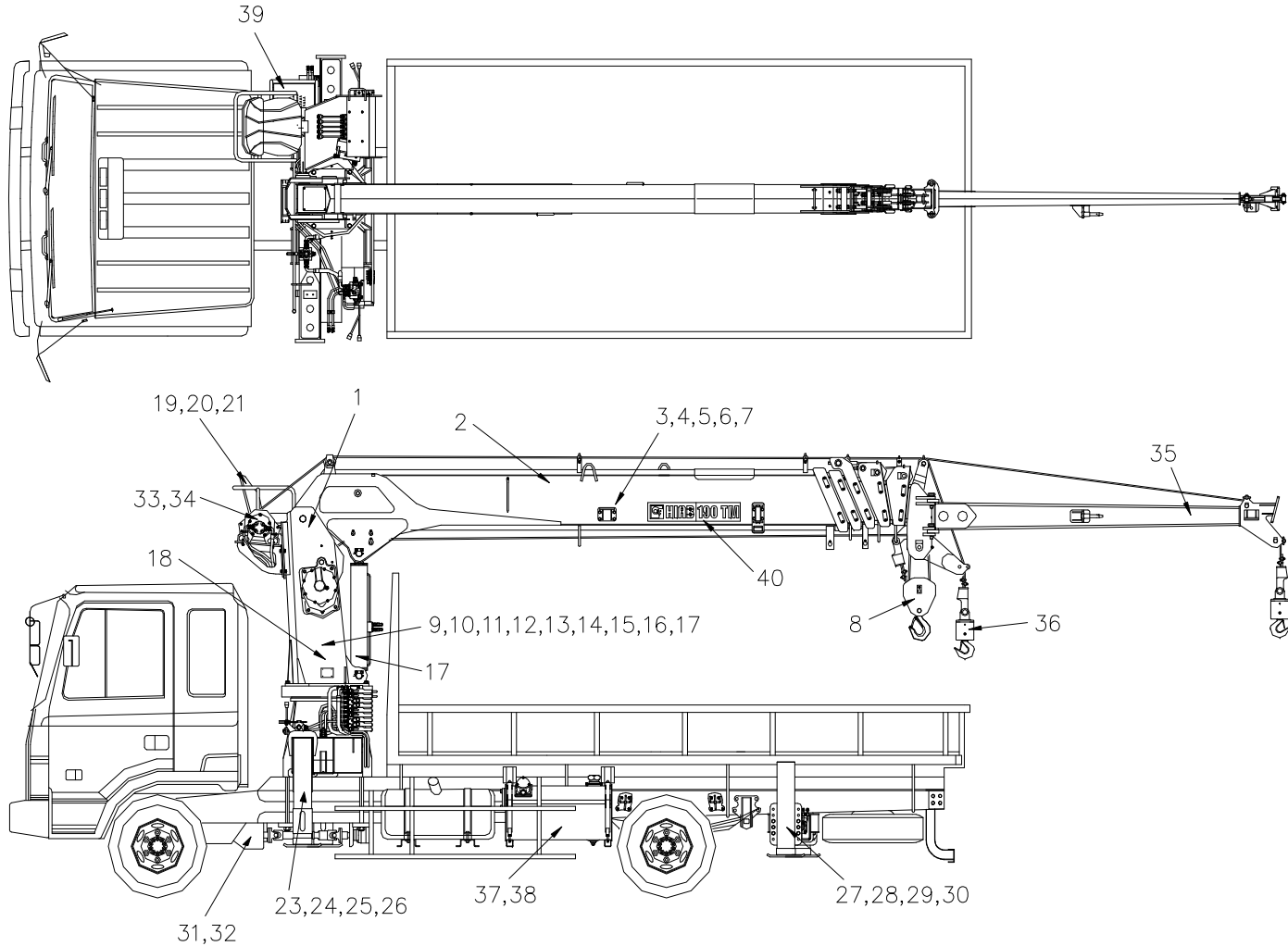
-	주요부분지시도 MAIN SUBDIVISIONS	HIAB190TM-6 - 0 : 5	11	아우트리거 컨트롤 시스템 OUTRIGGER CONTROL SYSTEM	HIAB190TM-6 - 11 : 2
1	총 결합체 HIAB190TM TOTAL ASS'Y	HIAB190TM-6 - 1 : 5	12	아우트리거 컨트롤 밸브 OUTRIGGER CONTROL VALVE	HIAB190TM-6 - 12 : 2
2	붐 시스템 BOOM SYSTEM	HIAB190TM-6 - 2 : 3	13	원치 시스템 WINCH SYSTEM	HIAB190TM-6 - 13 : 2
3	신축 실린더 결합체 EXTENSION CYLINDER ASS'Y	HIAB190TM-6 - 3 : 0	14	원치 감속기 결합체 WINCH REDUCER ASS'Y	HIAB190TM-6 - 14 : 0
4	1단 신축 실린더 결합체 1st EXTENSION CYLINDER ASS'Y	HIAB190TM-6 - 4 : 1	15	선회 감속기 REDUCER, SLEWING	HIAB190TM-6 - 15 : 0
5	2단 신축 실린더 결합체 2nd EXTENSION CYLINDER ASS'Y	HIAB190TM-6 - 5 : 0	16	선회 모터 MOTOR, SLEWING	HIAB190TM-6 - 16 : 1
6	3단 신축 실린더 결합체 3rd EXTENSION CYLINDER ASS'Y	HIAB190TM-6 - 6 : 0	17	카운터 발란스 밸브 VALVE, CONTER BALANCE (D)	HIAB190TM-6 - 17 : 2
7	카운터 발란스 밸브 VALVE, CONTER BALANCE (E)	HIAB190TM-6 - 7 : 1	18-1	데릭 실린더 결합체 DERRICK CYLINDER ASS'Y	HIAB190TM-6 - 18-1 : 1
8	쉬브 결합체 SHEAVE ASS'Y	HIAB190TM-6 - 8 : 2	18-2	데릭 실린더 결합체 DERRICK CYLINDER ASS'Y	HIAB190T-6 - 18-2 : 1
9	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	HIAB190TM-6 - 9 : 4	19	로타리 조인트 결합체 ROTARY JOING ASS'Y	HIAB190TM-6 - 19 : 1
10	베이스 호스 & 파이프 결합체 BASE HOSE & PIPE ASS'Y	HIAB190TM-6 - 10 : 3	20	탑 시트 결합체 TOP SEAT ASS'Y	HIAB190TM-6 - 20 : 4

SPARE PARTS LIST



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB190TM-6 0:6
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SPARE PARTS LIST



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB190TM-6 0 : 6
2015. 10.

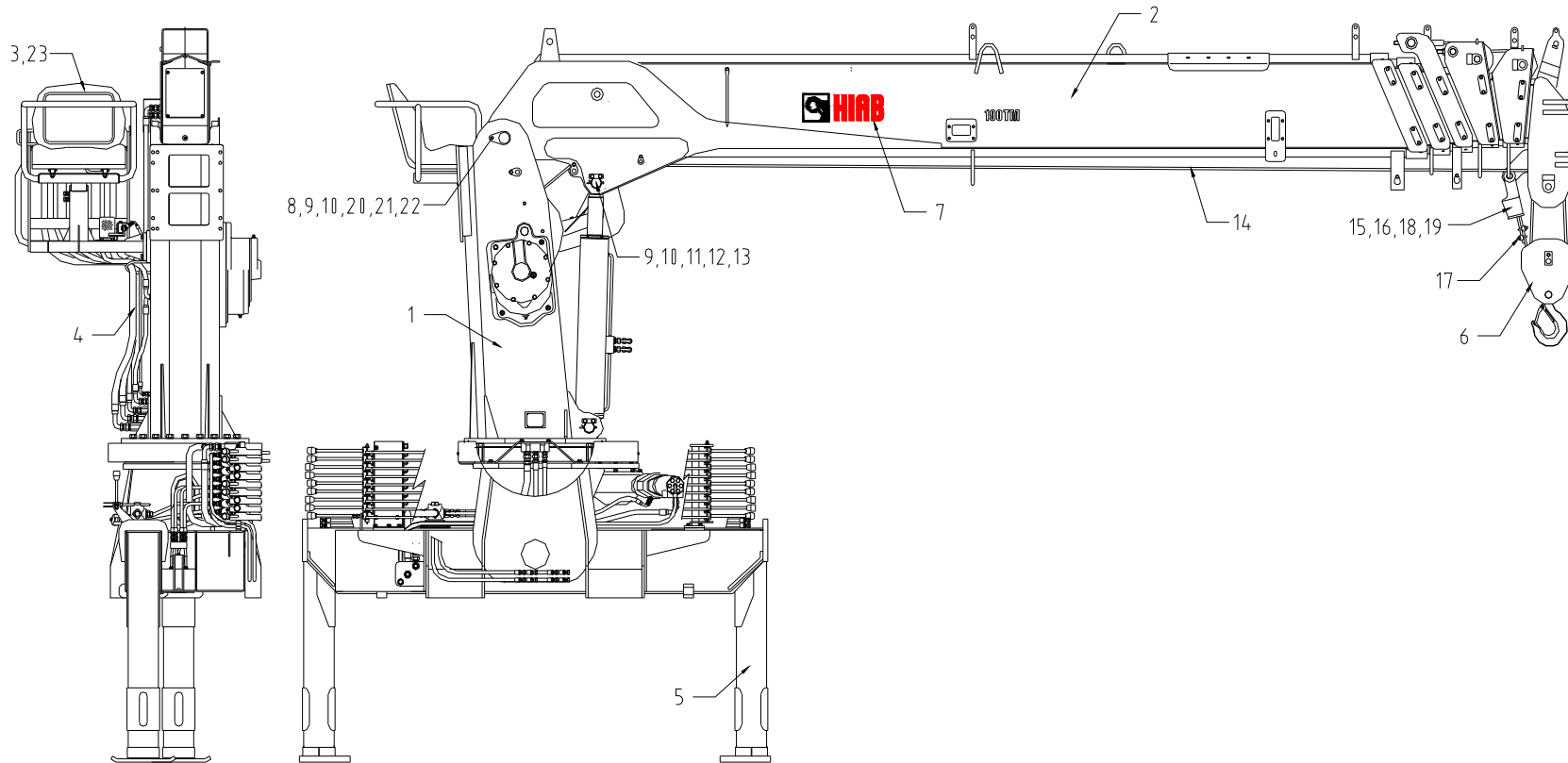
21	탑 시트 호스 결합체 TOP SEAT HOSES	HIAB190TM-6 - 21 : 3	32	펌프 PUMP	HIAB190TM-6 - 32 : 0
22	메인 컨트롤 밸브 MAIN CONTROL VALVE	HIAB190TM-6 - 22 : 1	33	보조 윈치 결합체 JIB WINCH ASS'Y	HIAB190TM-6 - 33 : 0
23	전방 아우트리거 결합체 FRONT OUTRIGGER ASS'Y	HIAB190TM-6 - 23 : 1	34	보조 윈치 JIB WINCH	HIAB190TM-6 - 34 : 0
24	전방 아우트리거 실린더 결합체 FRONT OUTRIGGER CYLINDER ASS'Y	HIAB190TM-6 - 24 : 1	35	보조 붐 결합체 JIB BOOM ASS'Y	HIAB190TM-6 - 35 : 0
25	전방 사이드 쉬프트 실린더 결합체 FRONT SIDE SHIFT CYLINDER ASS'Y	HIAB190TM-6 - 25 : 1	36	1연 회전 후크 결합체 SWIVEL HOOK ASS'Y	HIAB190TM-6 - 36 : 0
26	파일럿 체크 밸브 PILOT CHECK VALVE (D)	HIAB190TM-6 - 26 : 1	37	오일 탱크 결합체 OIL TANK ASS'Y	HIAB190TM-6 - 37 : 1
27	후방 아우트리거 결합체 REAR OUTRIGGER ASS'Y	HIAB190TM-6 - 27 : 0	38	리턴 필터 FILTER, RETURN	HIAB190TM-6 - 38 : 0
28	후방 아우트리거 실린더 결합체 REAR OUTRIGGER CYLINDER ASS'Y	HIAB190TM-6 - 28 : 0	39	사다리 마운팅 LADDER MOUNTING	HIAB190TM-6 - 39 : 0
29	후방 사이드 쉬프트 실린더 결합체 REAR SIDE SHIFT CYLINDER ASS'Y	HIAB190TM-6 - 29 : 0	40	스티커 배열 ARRANGEMENT, STICKER	HIAB190TM-6 - 40 : 2
30	파일럿 체크 밸브 PILOT CHECK VALVE (S)	HIAB190TM-6 - 30 : 0	41	전기 배선도 ELECTRIC WIRING DIAGRAM	HIAB190TM-6 - 41 : 1
31	피티오 & 펌프 마운팅 P.T.O & PUMP MOUNTING	HIAB190TM-6 - 31 : 0	42	무선 A2B 시팅 WIRELESS A2B SETTING	HIAB190TM-6 - 42 : 1

SPARE PARTS LIST



크레인 총 결합체
HIAB190TM TOTAL ASS'Y

HIAB190TM-6 1:5
2014. 12.



SPARE PARTS LIST



크레인 총 결합체
HIAB190TM TOTAL ASS'Y

HIAB190TM-6 1:5
2014. 12.

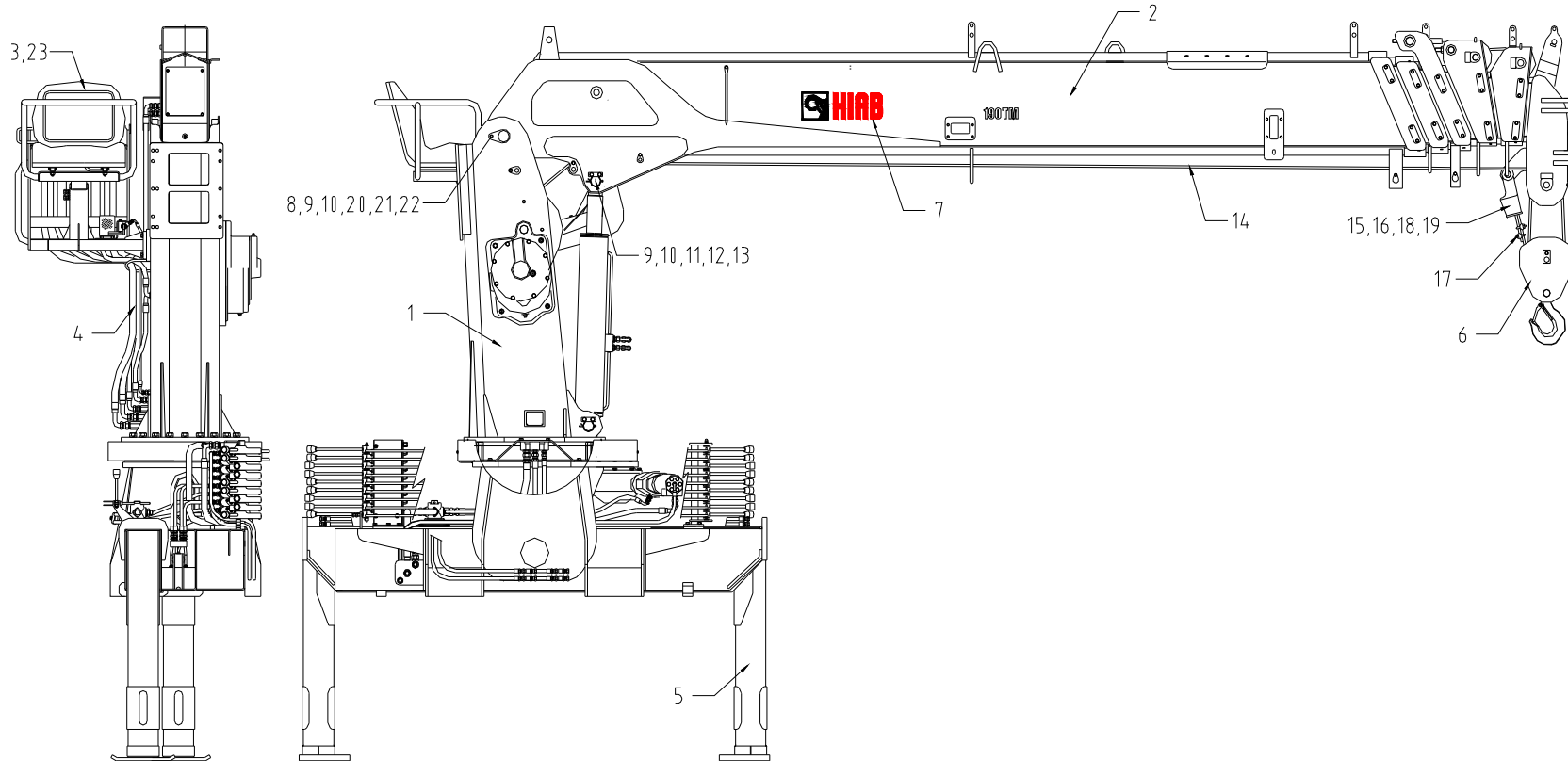
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-	A00-0325	크레인 총 결합체 HIAB190TM TOTAL ASS'Y	1		10	3613101	스프링 와셔 WASHER, SPRING	3	
1	A01-2185	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	1		11	TA1-0002	축 SHAFT	1	
2	A01-2186	붐 시스템 BOOM SYSTEM	1		12	1311941	분할 핀 PIN, SPLIT	1	
3	A01-0538	탑 시트 결합체 TOP SEAT ASS'Y	1		13	BC2-0005	플레이트 PLATE	1	
4	A01-2514	탑 시트 호스 결합체 TOP SEAT HOSE ASS'Y	1		14	S01-5169	와이어 로프 ROPE, WIRE	1	Φ11.2×118m (B종, 헤라)
5	OR1-4001	아웃트리거 시스템 OUTRIGGER SYSTEM	1		15	S01-1611	소켓 SOCKET	1	
6	A02-2565	쉬브 결합체 SHEAVE ASS'Y	1		16	S01-0002	록 핀 PIN, LOCK	1	
7	A01-2340	스티커 배열 STICKER, ARRANGEMENT	1		17	S01-1096	와이어 클립 CLIP, WIRE	1	
8	TA1-0003	축 SHAFT	1		18	S01-5396	썰기 WEDGE	1	
9	2111226	육각 머리 볼트 BOLT, HEX. HEAD	3		19	S01-1613	핀 PIN	1	

SPARE PARTS LIST



크레인 총 결합체
HIAB190TM TOTAL ASS'Y

HIAB190TM-6 1 : 5
2014. 12.



SPARE PARTS LIST



크레인 총 결합체
HIAB190TM TOTAL ASS'Y

HIAB190TM-6 1:5
2014. 12.

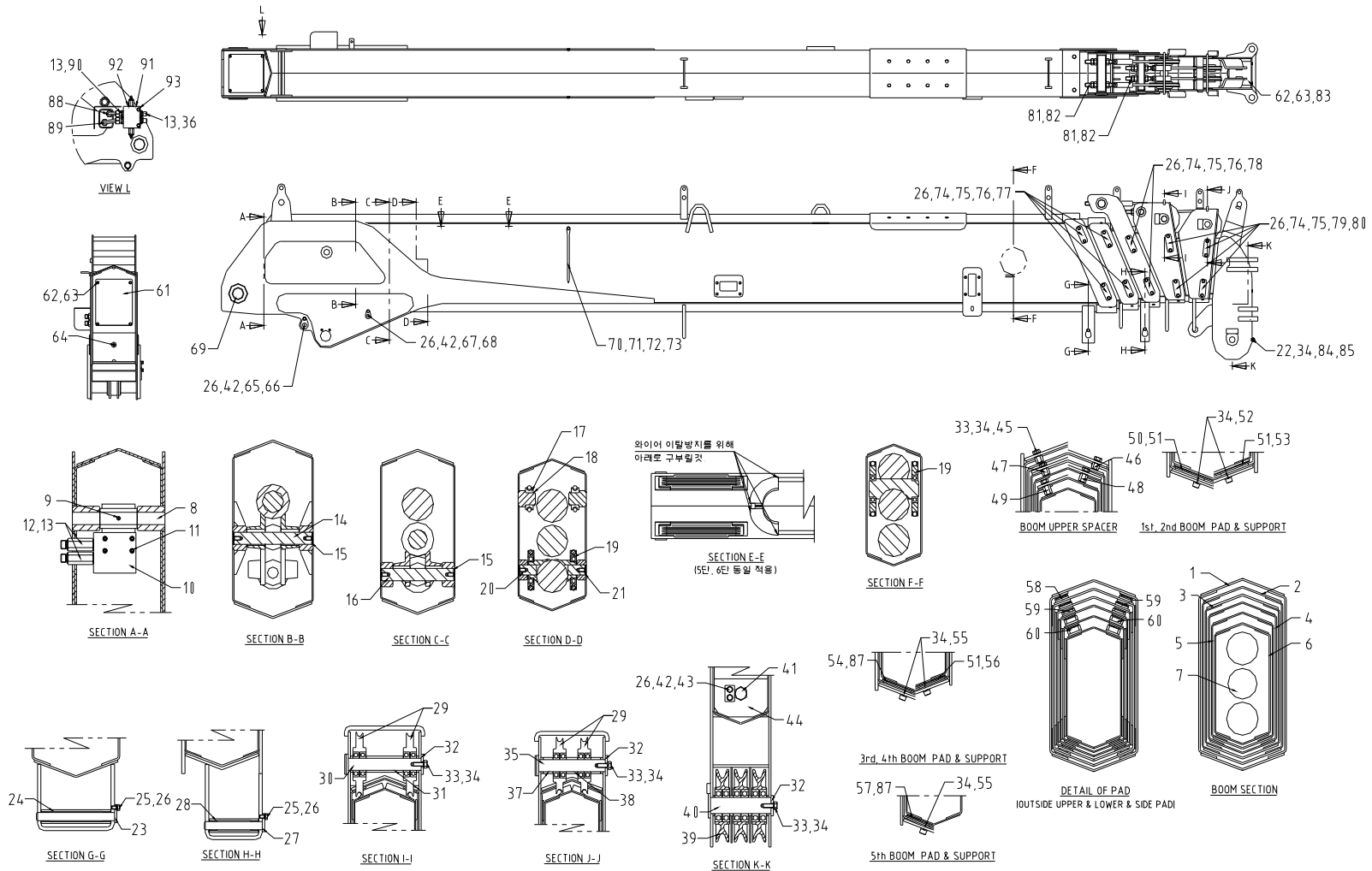
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20	TA-6002	플레이트 PLATE	1						
21	2111537	육각 머리 볼트 BOLT, HEX. HEAD	1						
22	3612121	스프링 와셔 WASHER, SPRING	1						
23	E00-0114	전기 와이어 배선 ELECTRIC WIRE DIAGRAM	1						

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

HIAB190TM-6 2 : 3
2014. 12.



SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

HIAB190TM-6 2 : 3
2014. 12.

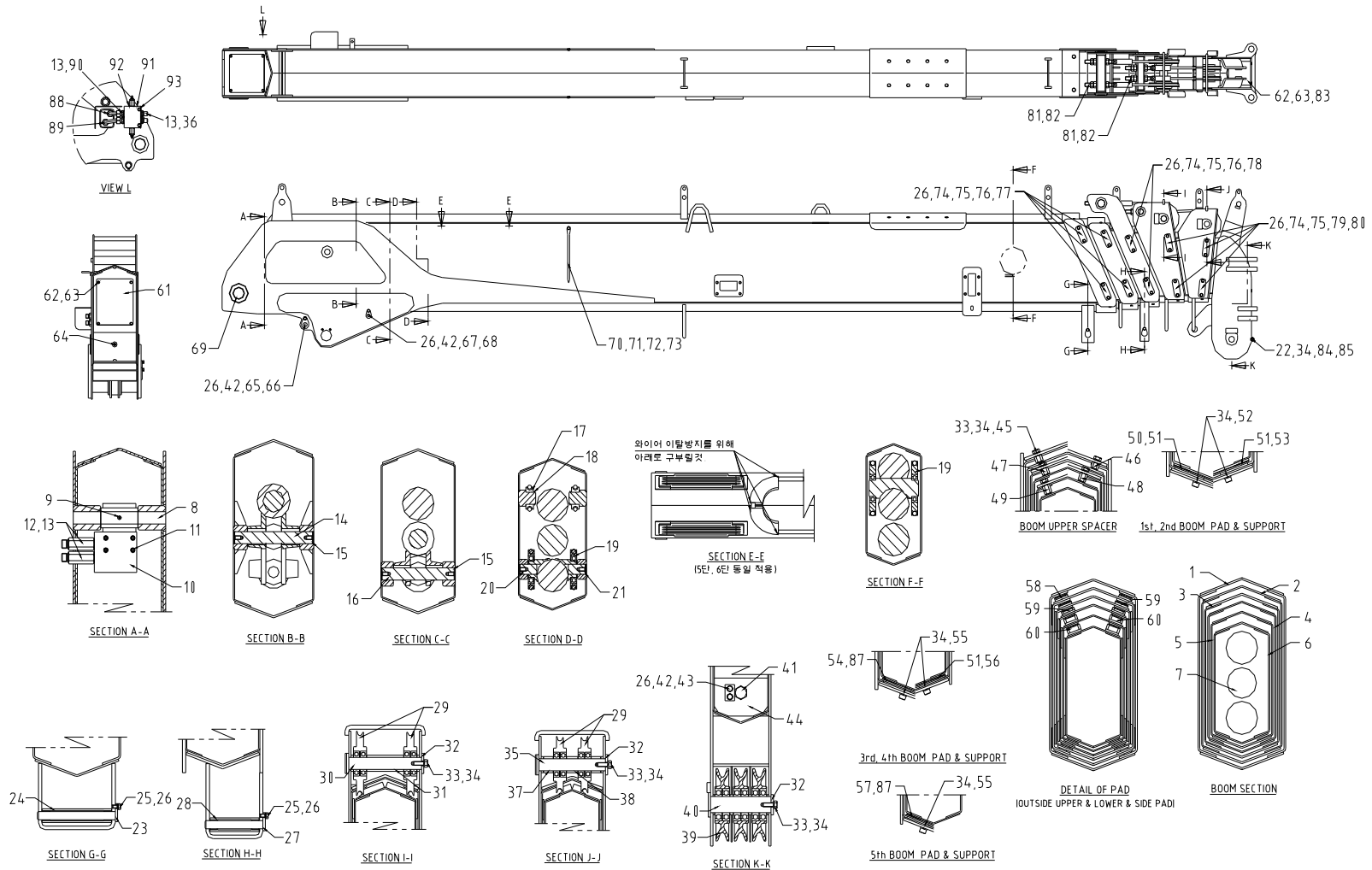
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-	A01-2186	붐 시스템 BOOM SYSTEM	1		10	M01-1078	블록 BLOCK	1	
1	A02-3056	1단 붐 결합체 1st BOOM ASS'Y	1		11	2615617	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB6×75
2	B02-8001	2단 붐 결합체 2nd BOOM ASS'Y	1		12	S01-2308	롱 니플 NIPPLE, LONG	2	PF1/2(O)×PF1/2(C)
3	B03-8001	3단 붐 결합체 3rd BOOM ASS'Y	1		13	6010212	오링 O-RING	6	1B P18
4	A02-3009	4단 붐 결합체 4th BOOM ASS'Y	1		14	BOO-0005	축 SHAFT	1	Φ30×205L
5	A02-3010	5단 붐 결합체 5th BOOM ASS'Y	1		15	4525281	멈춤 링 RING, RETAINING	4	RB30
6	A01-3011	6단 붐 결합체 6th BOOM ASS'Y	1		16	BOO-0006	축 SHAFT	1	Φ30×186L
7	H01-5866	신축 실린더 결합체 EXTENSION CYLINDER ASS'Y	1		17	S01-4537	와이어 로프 ROPE, WIRE	1	Φ10×21210L
8	BOO-6002	축 SHAFT	1	Φ30×230L	18	4510291	멈춤 링 RING, RETAINING	2	RC30
9	2340796	멈춤 나사 SCREW, SET (STICK END)	1	BM10×16	19	A05-3625	쉬브 결합체 SHEAVE ASS'Y	4	

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

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SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

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2014. 12.

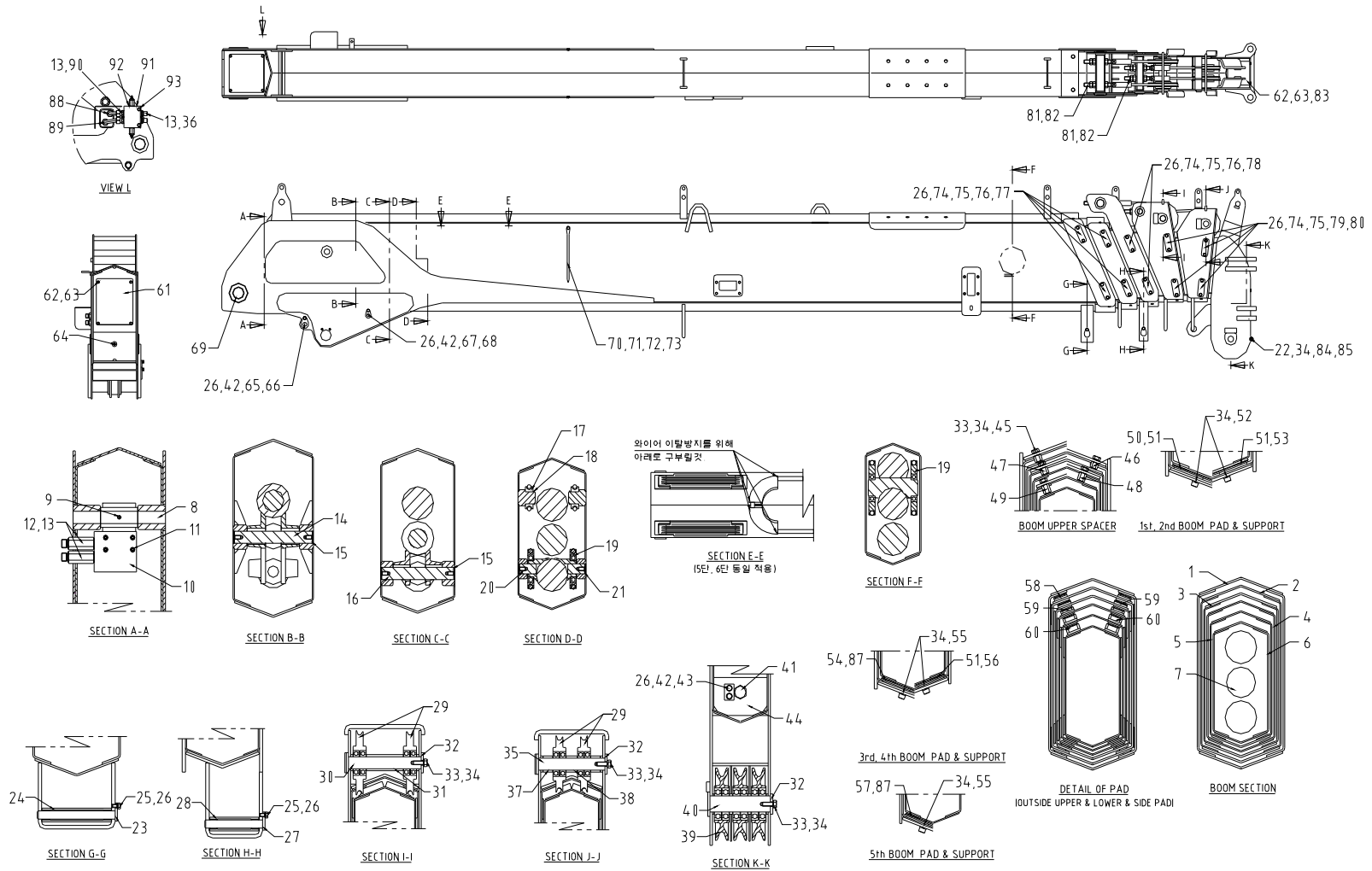
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20	BOO-0007	핀 PIN	2	Φ25×42L	30	BOO-0023	축 SHAFT	1	Φ30×189L
21	4525251	멈춤 링 RING, RETAINING	2	RB25	31	BOO-0026	스페이서 SPACER	1	Φ40×92L
22	3112106	육각 너트 NUT, HEX.	2	NA10	32	N01-0543	플레이트 PLATE	3	t=6
23	BOO-0014	축 SHAFT	1	Φ20×202L	33	2111187	육각 볼트 BOLT, HEX. HEAD	13	BA10×20
24	BOO-0016	롤러 결합체 ROLLER ASS'Y	1	Φ34×180L	34	3612101	스프링 와셔 WASHER, SPRING	25	WS10
25	2110866	육각 볼트 BOLT, HEX. HEAD	19	BA8×16	35	BOO-0027	축 SHAFT	1	Φ30×173L
26	3612081	스프링 와셔 WASHER, SPRING	47	WS8	36	9381062	파이프 니플 NIPPLE, PF PIPE	2	NFCO1/2×1/2
27	BOO-0018	축 SHAFT	1	Φ20×165L	37	BOO-0030	스페이서 SPACER	2	Φ40×29L
28	BOO-0019	롤러 결합체 ROLLER ASS'Y	1	Φ34×142L	38	BOO-0031	스페이서 SPACER	1	Φ40×22L
29	A05-2553	쉬브 결합체 SHEAVE ASS'Y	4		39	A05-2548	쉬브 결합체 SHEAVE ASS'Y	3	

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

HIAB190TM-6 2 : 3
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SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

HIAB190TM-6 2 : 3
2014. 12.

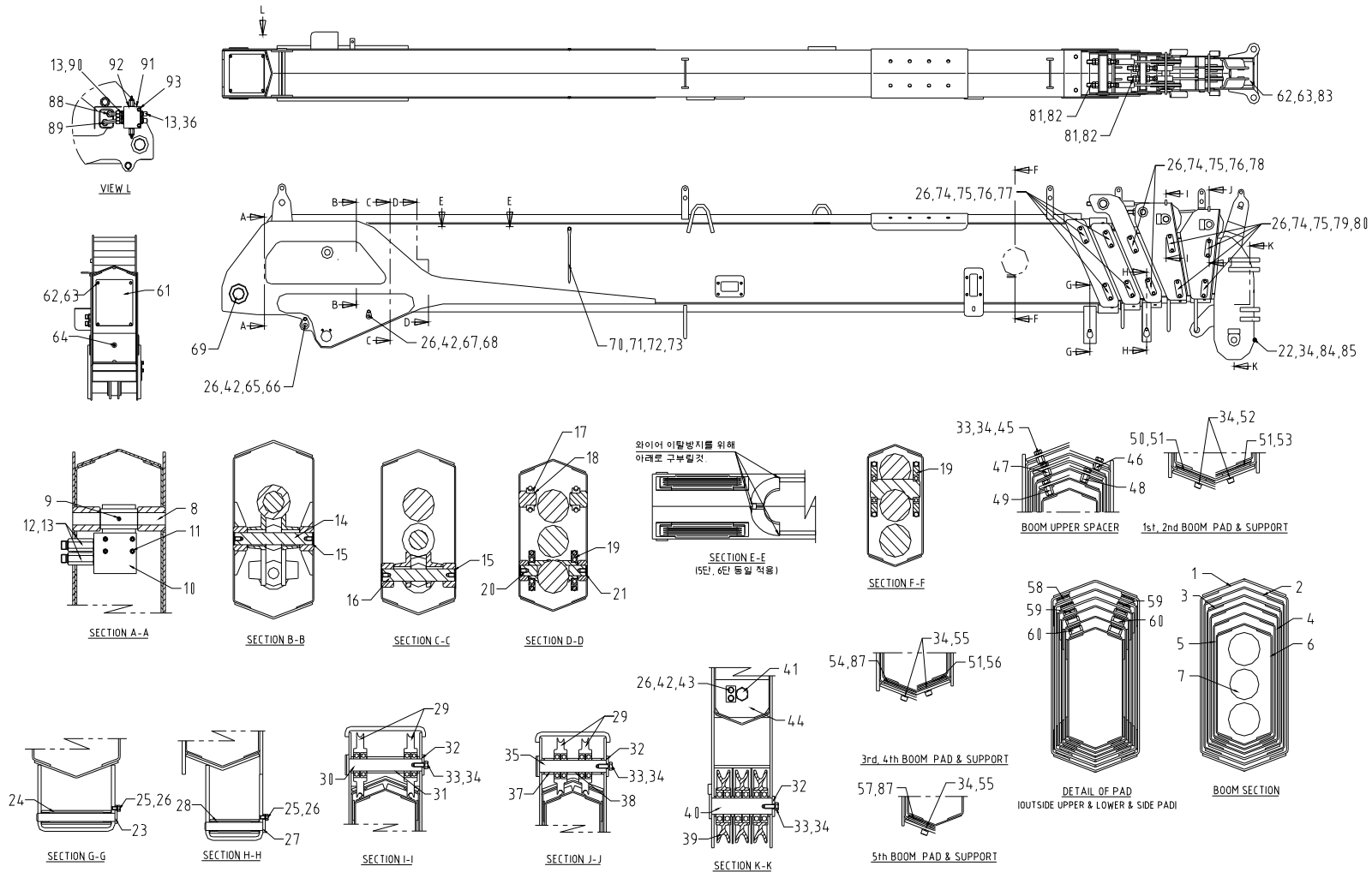
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40	BOO-0035	축 SHAFT	1	Φ40×157L	50	BOO-5052	패드 가이드 GUIDE, PAD	1	
41	BOO-0073	육각 볼트 BOLT, HEX. HEAD	1	M20×220	51	BOO-5055	슬라이드 패드 PAD, SLIDE	6	40×210×6t
42	2110886	육각 볼트 BOLT, HEX. HEAD	28	BA8×20	52	2611186	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB10×20
43	N01-0535	플레이트 PLATE	1	25×40×6t	53	BOO-5056	패드 가이드 GUIDE, PAD	1	
44	BOO-0032	와이어 가이드 GUIDE, WIRE	1		54	BOO-5059	패드 가이드 GUIDE, PAD	1	
45	BOO-0042	육각 너트 NUT, HEX.	2	t=19.5	55	2611176	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	6	BB10×18
46	BOO-0043	육각 너트 NUT, HEX.	2	t=17.5	56	BOO-5062	패드 가이드 GUIDE, PAD	1	
47	BOO-0044	육각 너트 NUT, HEX.	2	t=15.5	57	BOO-5065	패드 가이드 GUIDE, PAD	1	
48	BOO-0045	육각 너트 NUT, HEX.	2	t=24	58	BOO-8002	슬라이드 패드 PAD, SLIDE	2	35×220×10t
49	BOO-0046	육각 너트 NUT, HEX.	2	t=23	59	BOO-5037	슬라이드 패드 PAD, SLIDE	4	35×220×9t

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

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SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

HIAB190TM-6 2:3
2014. 12.

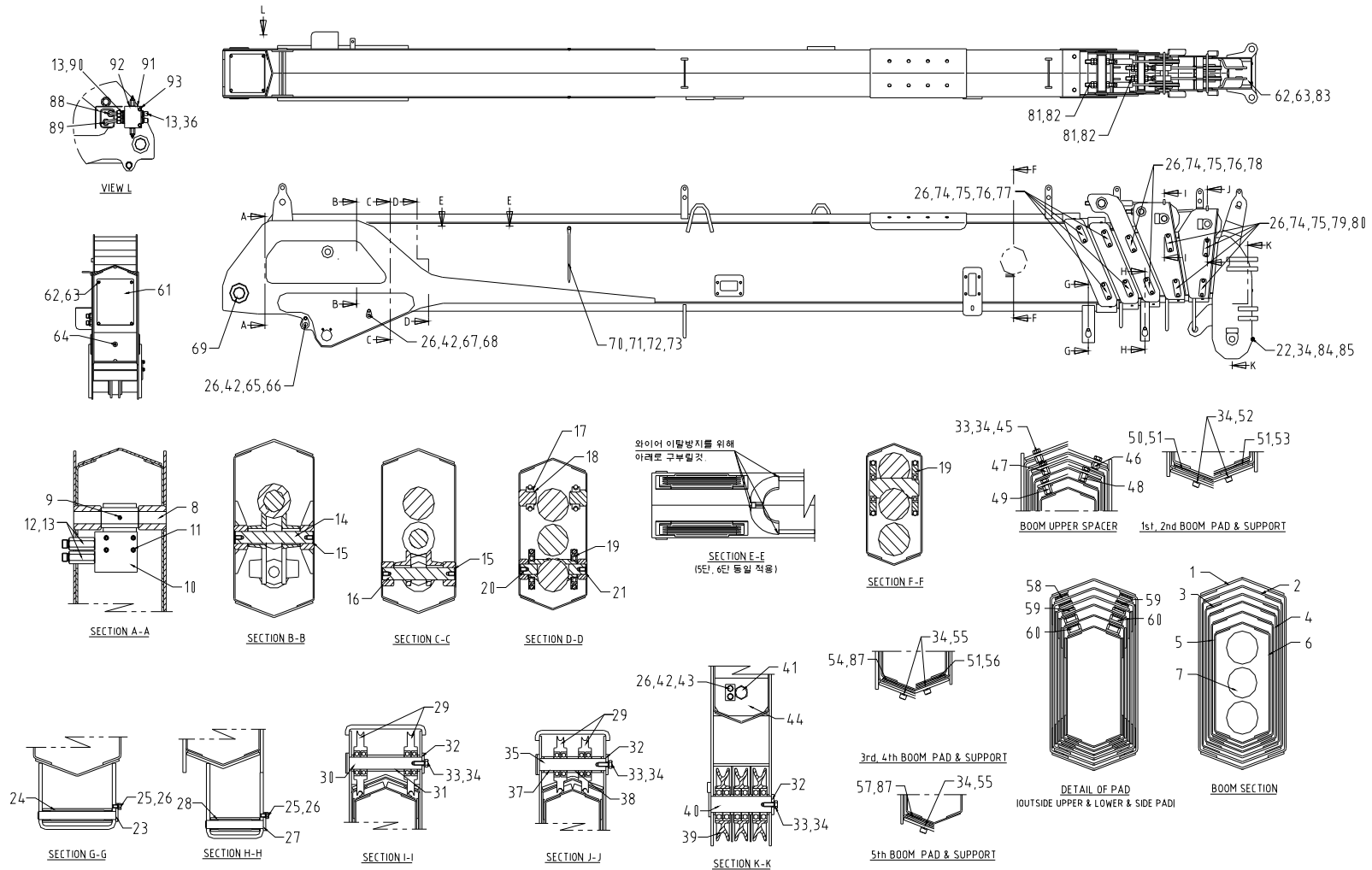
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60	BOO-5041	슬라이드 패드 PAD, SLIDE	4	35×220×18t	70	N01-0590	각도 지시계 INDICATOR, ROD	2	t=4.5
61	BOO-0062	플레이트 PLATE	1	t=2.3	71	2110906	육각 볼트 BOLT, HEX. HEAD	2	BA8×25
62	2110446	육각 볼트 BOLT, HEX. HEAD	8	BA6×16	72	3112086	육각 너트 NUT, HEX.	2	NA8
63	3612061	스프링 와셔 WASHER, SPRING	12	WS6	73	3511081	평 와셔 WASHER, PLAIN	4	WP8
64	4610702	그리스 니플 NIPPLE, GREASE	1	A-PT1/8	74	2110906	육각 볼트 BOLT, HEX. HEAD	24	BA8×25
65	S01-2246	축 SHAFT	1	Φ30×245L	75	N01-3491	플레이트 PLATE	20	32×90×12t
66	A05-1796	롤러 결합체 ROLLER ASS'Y	1	Φ48.6×228L	76	S01-3515	슬라이드 패드 PAD, SIDE	12	19×49×17t
67	BOO-8004	축 SHAFT	1	Φ20×275L	77	BOO-2053	심 SHIM	8	t=1.0
68	BOO-8005	롤러 결합체 ROLLER ASS'Y	1	Φ34×228L	78	BOO-0058	심 SHIM	4	t=2.5
69	4321291	DU 부싱 BUSHING, DU	2	MB6060DU	79	S01-3121	사이드 패드 PAD, SIDE	8	19×49×14t

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

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SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

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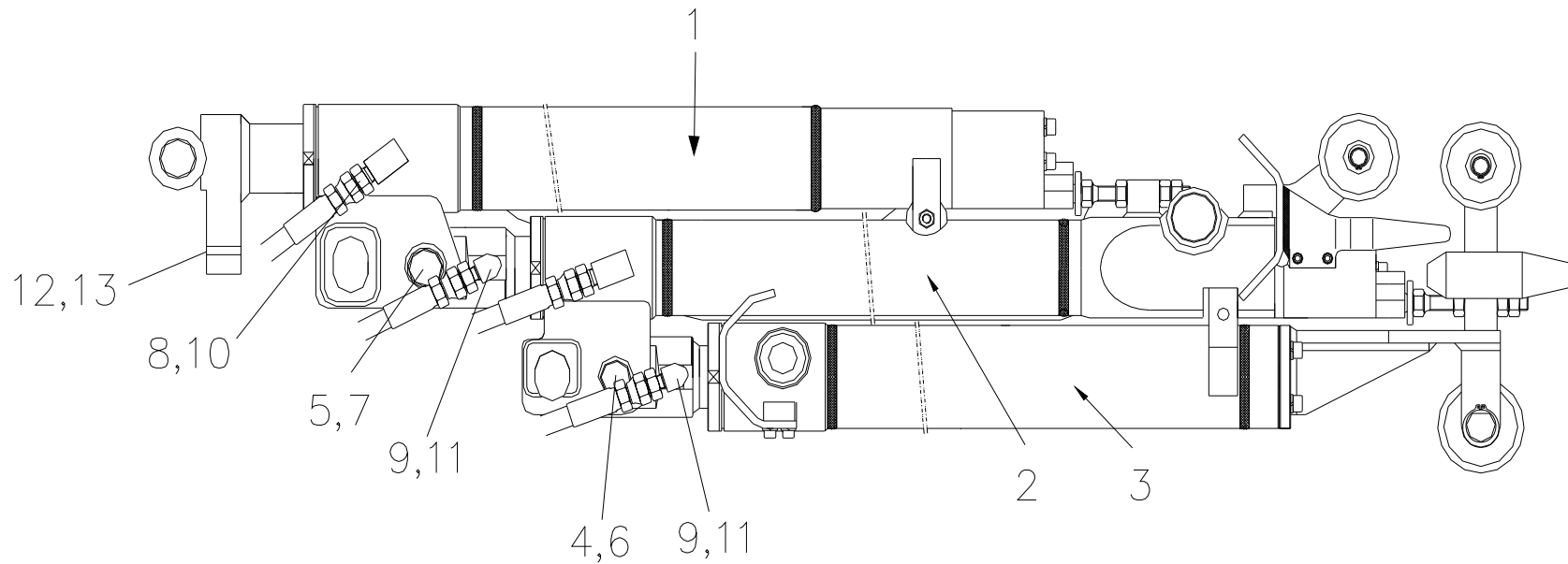
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80	BOO-0059	심 SHIM	8	t=2.0	90	9003401	파이프 니플 NIPPLE, PF PIPE	2	PF1/2(O)×Φ16
81	3112181	육각 너트 NUT, HEX.	12	NA18	91	M01-1079	브라켓 BRACKET	1	t4.5
82	S01-2993	와이어 로프 ROPE, WIRE	2	Φ10×7600L	92	H02-1003	카운터 발란스 밸브 VALVE, COUNTER BALANCE	1	
83	BOO-2039	커버 COVER	1	t=2.3	93	2186016	플랜지헤드 볼트 BOLT, FLANGE HEAD	2	BWF8×75
84	BOO-5048	볼트 BOLT	1	M10					
85	BOO-5049	파이프 PIPE	1	t=2.3					
86	BOO-5050	육각 너트 NUT, HEX.	2	NA10					
87	S01-3122	슬라이드 패드 PAD, SLIDE	4	40×210×6t					
88	H01-2328	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0					
89	H01-2329	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0					

SPARE PARTS LIST



신축 실린더 결합체
EXTENSION CYLINDER ASS'Y

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SPARE PARTS LIST



신축 실린더 결합체
EXTENSION CYLINDER ASS'Y

HIAB190TM-6 3:0
2004. 11.

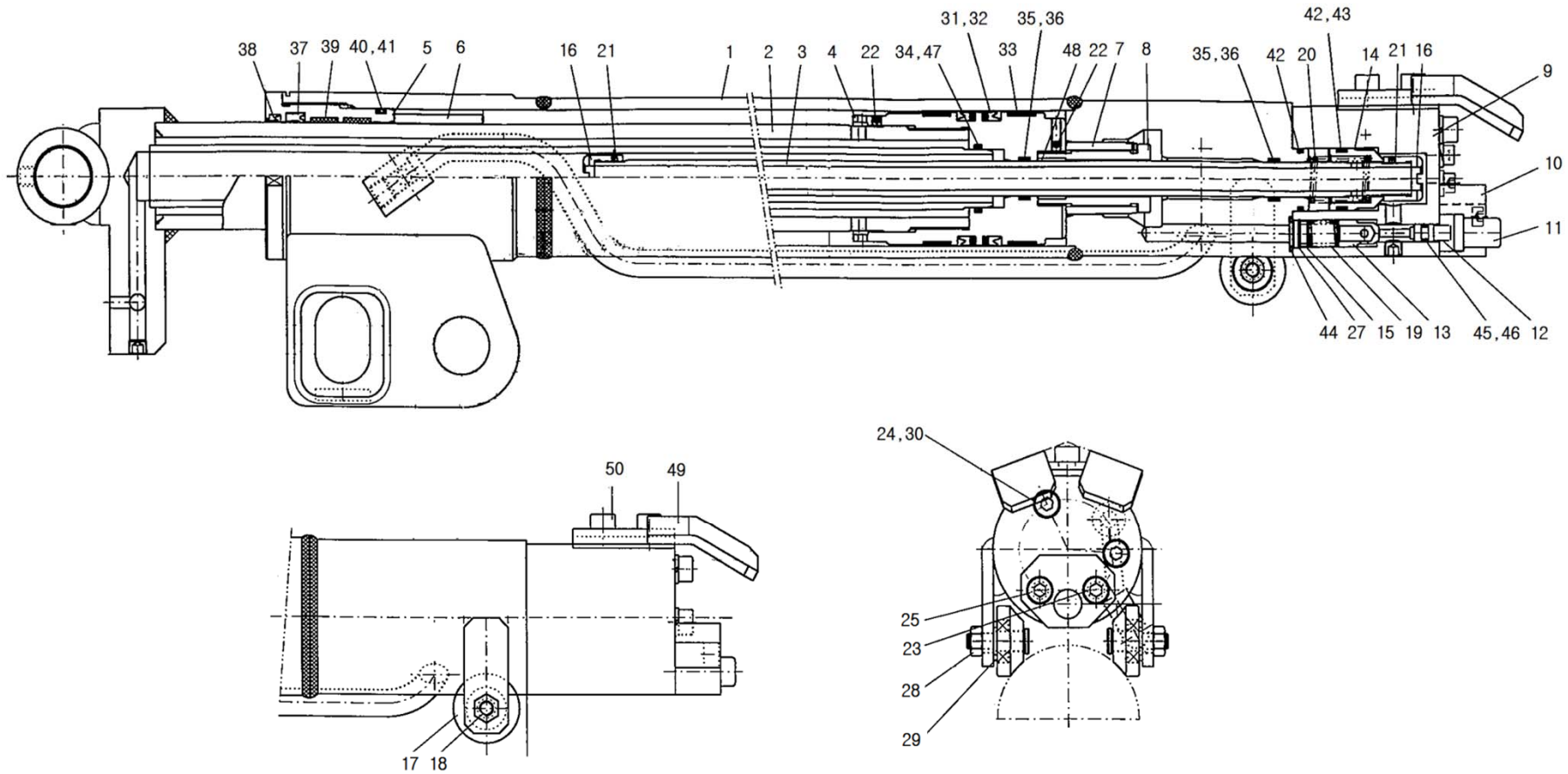
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-	H01-5866	신축 실린더 EXTENSION CYLINDER	1	HN98T0000	10	9211092	아답터 ADAPTER-A	4	ZPC3010-6-6
1	HN03T1A00-02	1단 신축 실린더 1st EXTENSION CYLINDER	1	H01-2081	11	-	아답터 ADAPTER-B	4	ZPC3020-6-6
2	HN98T2000	2단 신축 실린더 2nd EXTENSION CYLINDER	1	H01-5867	12	-	더스트 커버 DUST COVER	1	67×85×3T
3	HN98T3000	3단 신축 실린더 3rd EXTENSION CYLINDER	1	H01-5868	13	-	소켓 볼트 SOCKET BOLT	2	M6×P1.0×10L
4	SS25T0010	핀 PIN-A	1	Φ25×73L	14	-	케이블 TI CABLE	2	
5	SS33T0010	핀 PIN-B	1	Φ30×73L					
6	4510251	스냅링 SNAP RING	2	R25					
7	4510291	스냅링 SNAP RING	2	R30					
8	7116563	유압 호스 HOSE, HYDRAULIC	2	PF3/8×PF3/8-390L					
9	7116573	유압 호스 HOSE, HYDRAULIC	2	PF3/8×PF38-420L					

SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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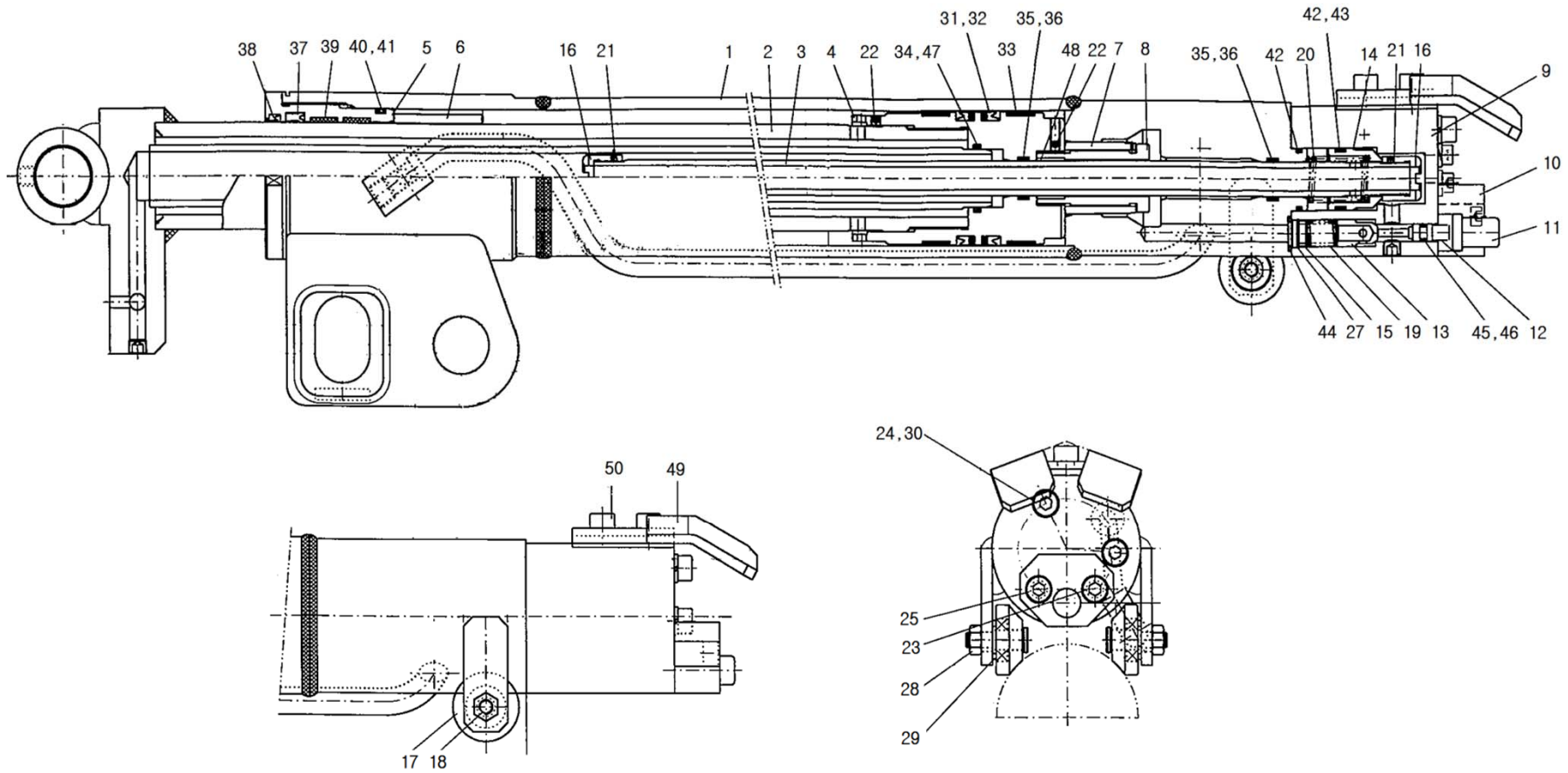
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-	HN03T1A00-02	1단 신축 실린더 결합체 1st EXTENSION CYLINDER ASS'Y	1	H01-2081	10	SS33T10A1	브라켓-A BRACKET-A	1	
1	HN03T1010	튜브 결합체 TUBE ASS'Y	1		11	SS33T10A2	스풀 가이드 SPOOL GUIDE	1	
2	HN03T1A20-01	로드 결합체 ROD ASS'Y	1		12	SS33T10A3	스풀 SPOOL	1	
3	HN03T1030	리트렉터 RETRACTOR	1		13	SS33T10A4	밸브-A VALVE-A	1	
4	SH16T1040-01	피스톤 PISTON	1		14	SS33T10A5	밸브-B VLAVE-B	1	
5	SH46T1040	로드 커버 ROD COVER	1		15	SS33T10A6	와셔-A WASHER-A	1	
6	KL08T1040	스페이서 SPACER	1		16	HN01T1060	멈춤 너트 STOP NUT	2	
7	SS33T1070	쿠션 링 CUSHION RING	1		17	KL08T10P1	롤러 패드 ROLLER PAD	2	Φ36×14W
8	SS33T1080	쿠션 가이드 CUSHION GUIDE	1		18	KL08T1070	롤러 축 ROLLER SHAFT	2	Φ13×33.5L
9	SH16T1090	밸브 바디 VALVE BODY	1		19	SS33T10S1	스프링-A SPRING-A	1	

SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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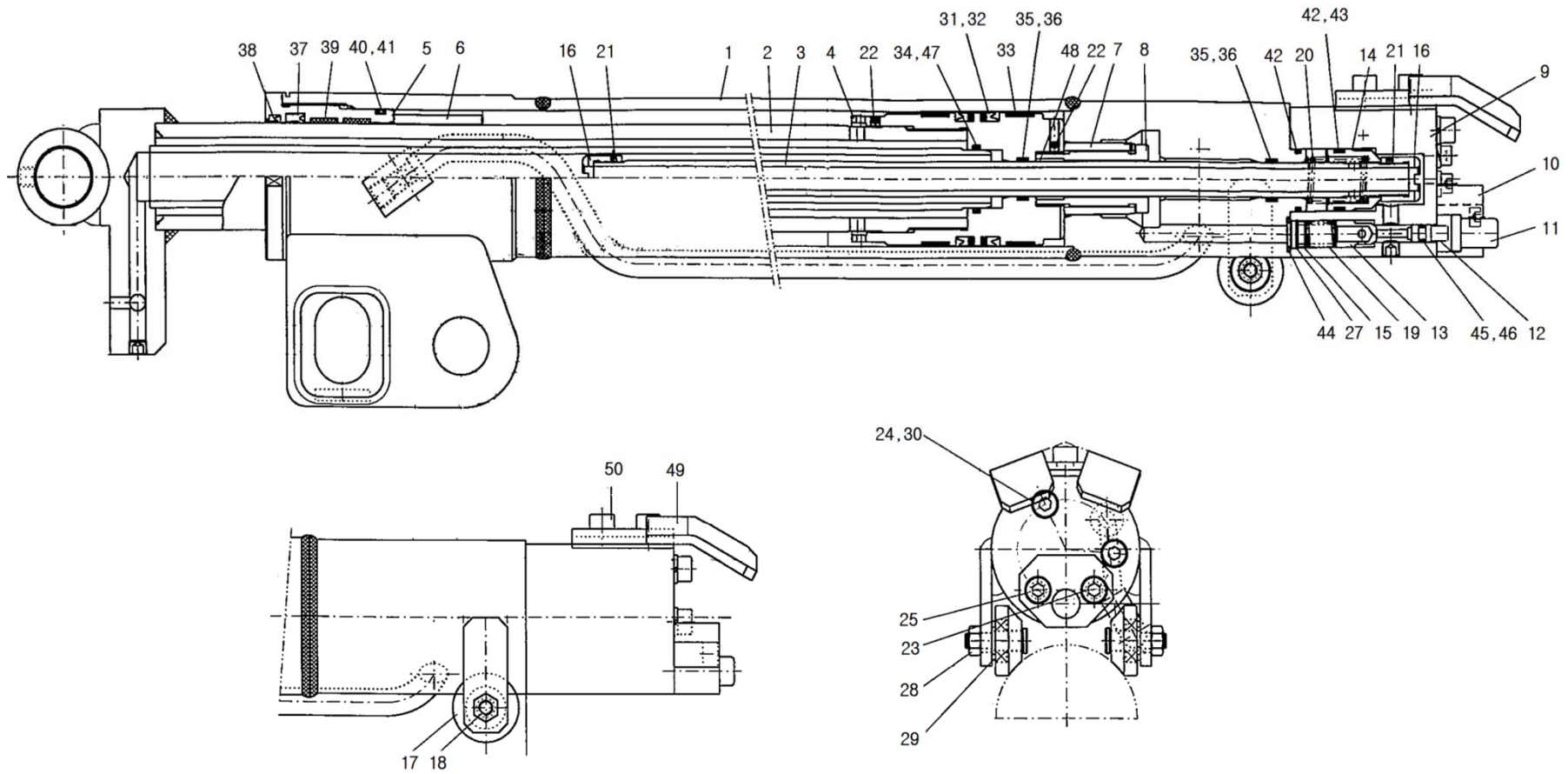
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20	SS33T10S2	스프링-B SPRING-B	1		30	-	스프링 와셔 WASHER, SPRING	2	M8 용
21	2350116	멈춤 나사 SCREW, SET	2	M3×P0.5×3L	31	-	피스톤 패킹 PACKING, PISTON	2	OSI 70
22	2350446	멈춤 나사 SCREW, SET	2	M6×P1.0×6L	32	-	백업 링 RING, BACK UP	2	60×70×3
23	2610937	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	1	BB8×35	33	-	웨어 링 RING, WEAR	2	65×70×15
24	2611067	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	2	BB8×100	34	-	오링 O-RING	1	1B G30
25	2611087	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	1	BB8×110	35	-	오링 O-RING	2	1B P18
26	BOO-0002-1-23	베어링 BEARING	2	#6900ZZ	36	-	백업 링 RING, BACK UP	4	(T-2) P18
27	-	스냅 링 SNAP RING	1	D14 (구멍용)	37	-	로드 패킹 PACKING, ROD	1	NI-300
28	-	나일론 너트 NYLON NUT	2	M8×P1.25	38	-	더스트 시일 SEAL, DUST	1	KDD 55
29	-	와셔 WASHER	2	D10×2T	39	-	웨어 링 RING, WEAR	2	55×60×15

SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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SPARE PARTS LIST



1단 신축 실린더 결합체
1st EXTENSION CYLINDER ASS'Y

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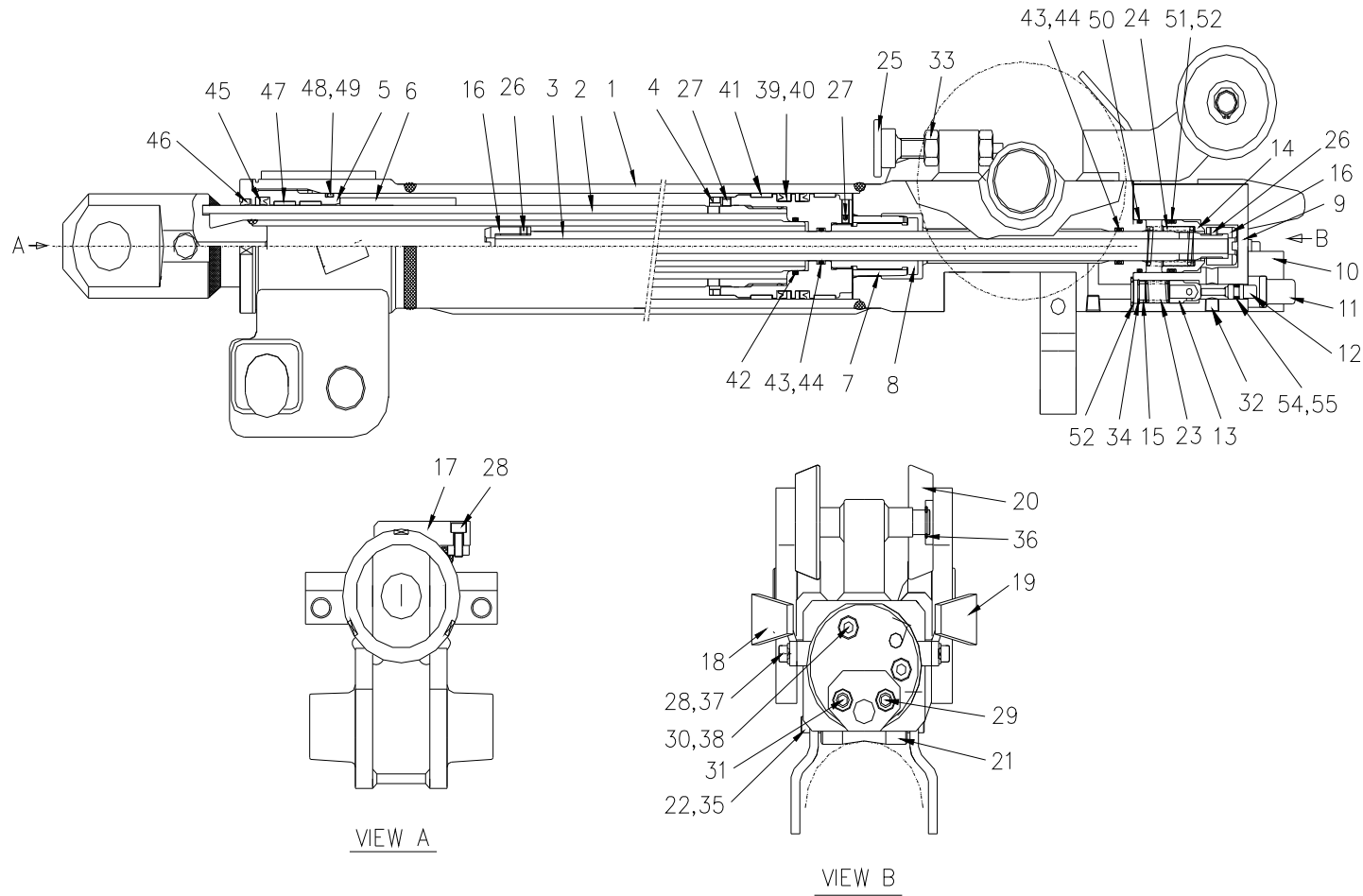
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40	-	오링 O-RING	1	1B G65	50	2610937	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	1	BB8×35
41	-	백업 링 RING, BACK UP	1	(T-3) G65					
42	-	오링 O-RING	2	28×33	-	S01-2127	시일 세트 SEAL SET	1	
43	-	백업 링 RING, BACK UP	2	28×33					
44	-	오링 O-RING	2	1B P14					
45	-	오링 O-RING	1	1A P6					
46	-	백업 링 RING, BACK UP	1	(T-3) P6					
47	-	백업 링 RING, BACK UP	1	(T-3) G30					
48	-	부쉬 DU BUSH	1	MB 1815 DU					
49	HN03T1A40	브라켓트 결합체 BRACKET ASS'Y	1						

SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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2004. 11.

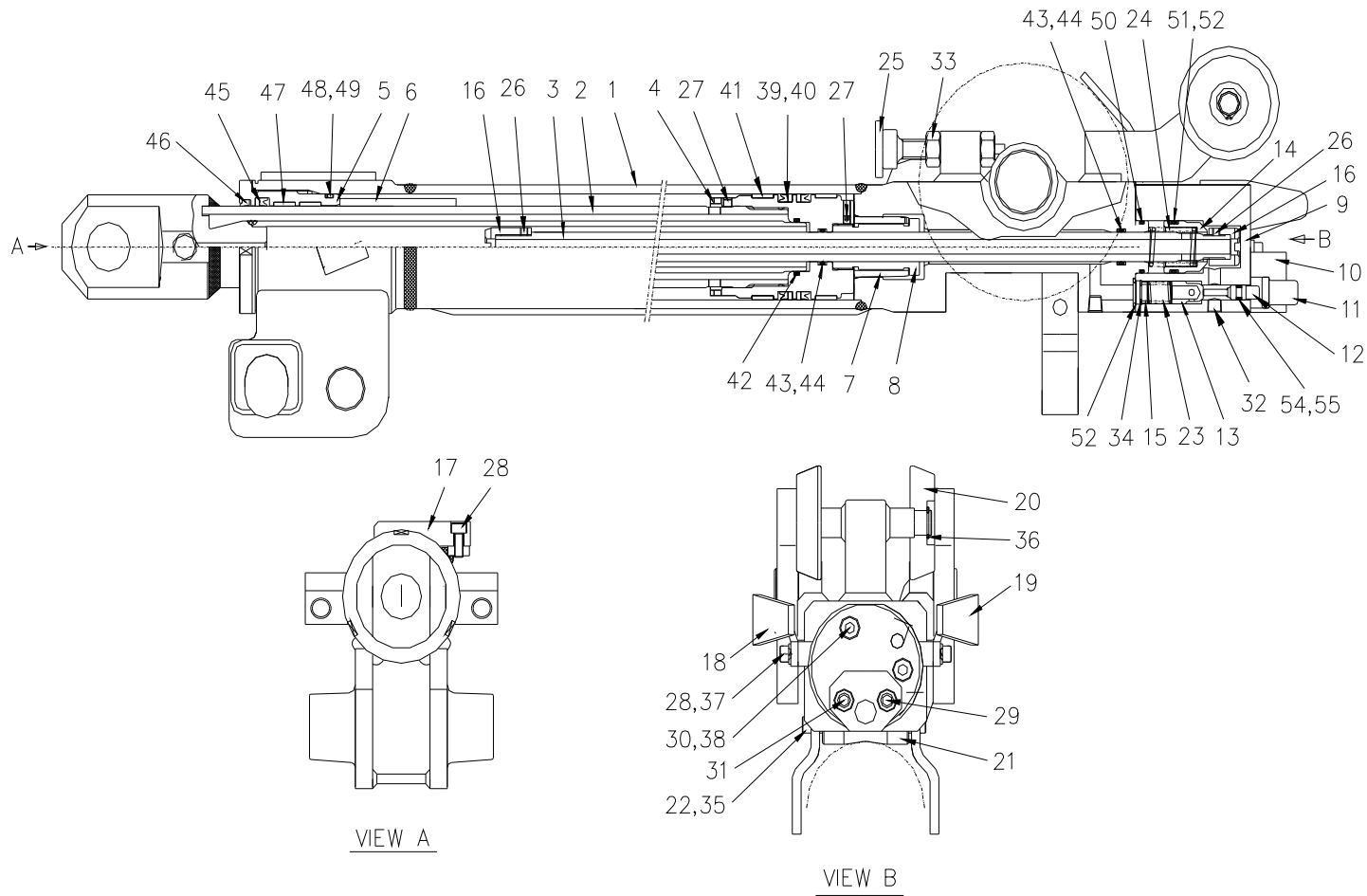
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-	HN98T2000	2단 신축 실린더 2nd EXTENSION CYLINDER	1	H01-5867	10	SS33T10A1	브라켓 BRACKET - A	1	
1	HN98T2010	튜브 결합체 TUBE ASSY	1		11	SS33T10A2	스풀 가이드 SPOOL GUIDE	1	
2	HN03T2020	로드 결합체 ROD ASSY	1		12	SS33T10A3	스풀 SPOOL	1	
3	HN03T2A30	리트렉터 RETRACTOR	1		13	SS33T10A4	밸브 VALVE - A	1	
4	SH18T1040	피스톤 PISTON	1		14	SS33T10A5	밸브 VALVE - B	1	
5	SH46T2040	로드 커버 ROD COVER	1		15	SS33T10A6	와셔 WASHER - A	1	
6	KL08T2040	스페이서 SPACER	1		16	HN01T1060	멈춤 너트 STOP NUT	2	
7	SS33T2070	쿠션 링 CUSHION RING	1		17	KL08T2070	패드 PAD	1	
8	SS33T1080	쿠션 가이드 CUSHION GUIDE	1		18	HN98T2060	브라켓 결합체 - R BRACKET ASS'Y - R	1	
9	SS33T1090	밸브 바디 VALVE BODY	1		19	HN98T2060	브라켓 결합체 - L BRACKET ASS'Y - L	1	

SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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2004. 11.

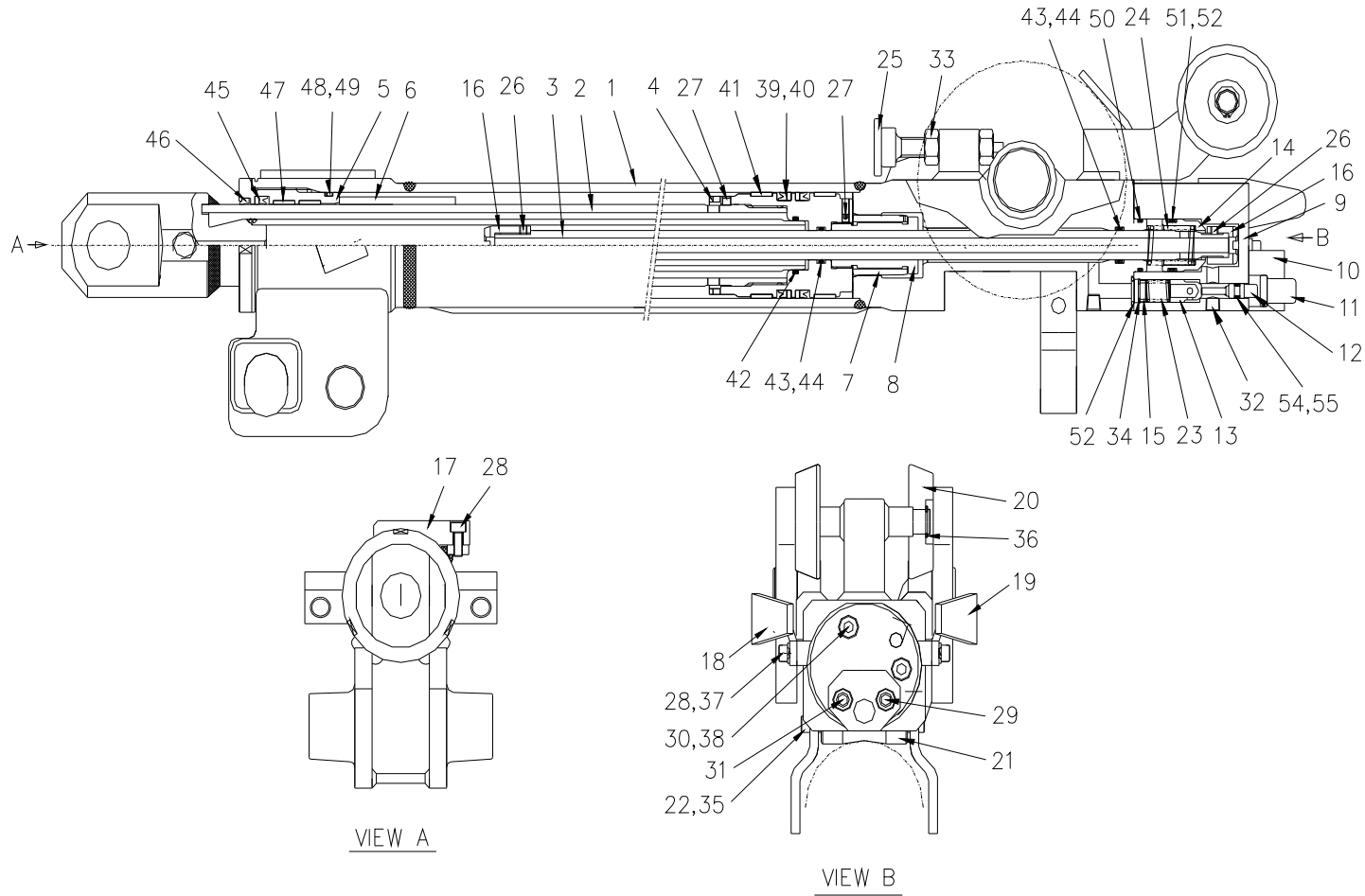
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20	HN21T2A60	가이드 롤러 GUIDE ROLLER	2		30	-	소켓 볼트 SOCKET BOLT	2	M8×P1.25×100L *
21	KL08T20P2	롤러 패드 ROLLER PAD	1		31	-	소켓 볼트 SOCKET BOLT	1	M8×P1.25×110L *
22	KL05ET190	롤러 샤프트 ROLLER SHAFT	1		32	-	플러그 PLUG	2	PT1/8×7L *
23	SS33T10S1	스프링 SPRING - A	1		33	-	너트 NUT	3	M12×P1.75×10H *
24	SS33T10S2	스프링 SPRING - B	1		34	-	스냅 링 SNAP RING	1	Φ14 *
25	SS33T20B1-01	체크 볼트 CHECK BOLT	1	M12×P1.75×85 *	35	-	분할 핀 PIN, SPLIT	1	Φ3.2×25L *
26	-	멈춤 나사 SCREW, SET	2	M3×P0.5×3L *	36	-	스냅 링 SNAP RING	2	Φ15 *
27	-	멈춤 나사 SCREW, SET	2	M6×P1.0×6L *	37	-	스프링 와셔 WASHER, SPRING	4	M5 *
28	-	소켓 볼트 SOCKET BOLT	6	M6×P1.0×15L *	38	-	스프링 와셔 WASHER, SPRING	2	M8 *
29	-	소켓 볼트 SOCKET BOLT	1	M8×P1.25×35L *	39	-	피스톤 패키징 PACKING, PISTON	2	OSI 65 *

SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

HIAB190TM-6 5:0
2004. 11.

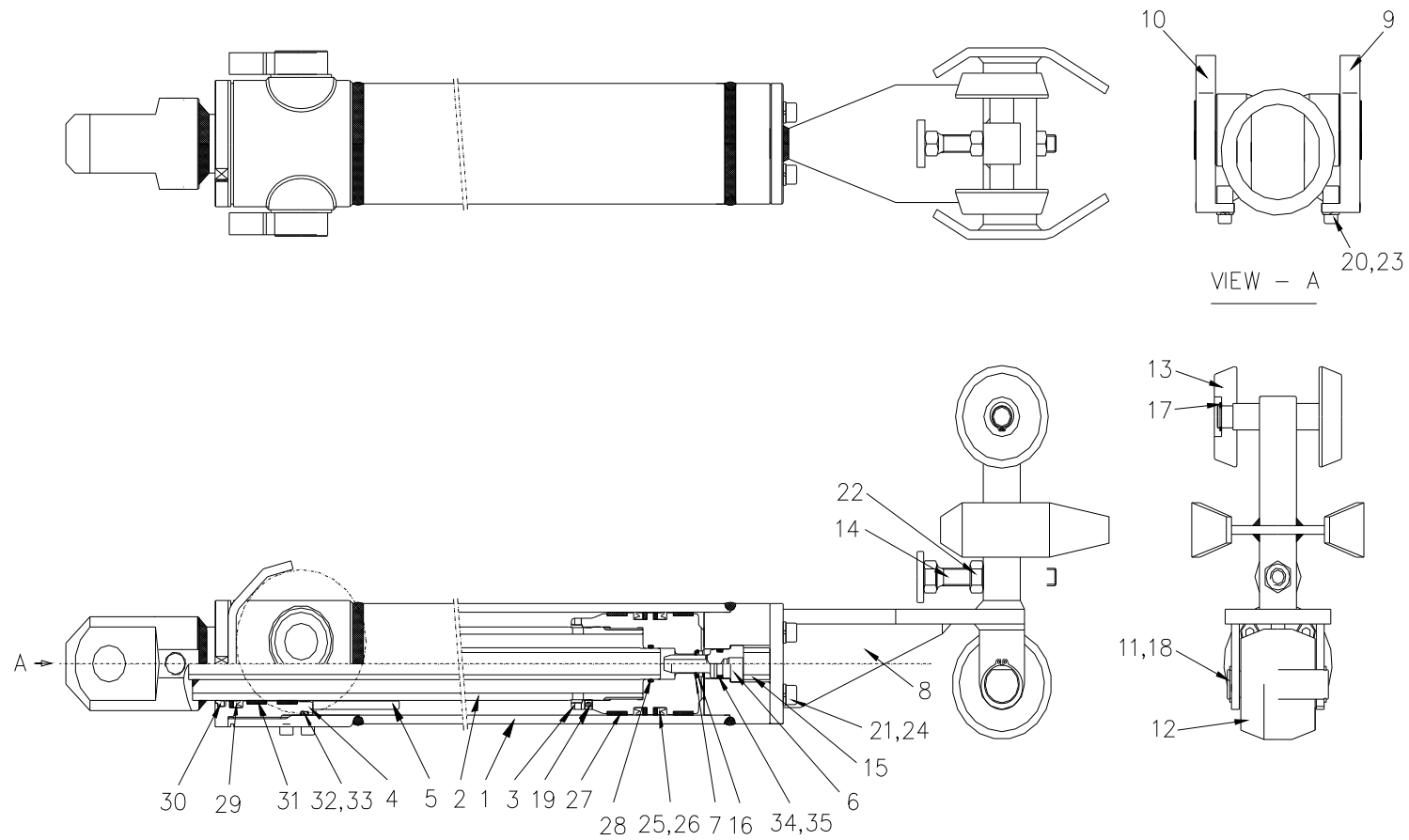
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40	-	백업 링 RING, BACK-UP	2	Φ65×Φ55×t3.0 *	50	-	O-링 O-RING	2	Φ28×Φ33 *
41	-	웨어 링 RING, WEAR	2	Φ65×Φ60×15w *	51	-	백업 링 RING, BACK-UP	2	Φ28×Φ33 *
42	-	O-링 O-RING	1	1B G30 *	52	-	O-링 O-RING	2	1B P14 *
43	-	O-링 O-RING	2	1B P18 *	53	-	O-링 O-RING	1	1AP 6 *
44	-	백업 링 RING, BACK-UP	4	(T-3) P12 *	54	-	백업 링 RING, BACK-UP	1	(T-3) P6 *
45	-	로드 패킹 PACKING, ROD	1	NI-300 Φ50×Φ60×10W *					
46	-	더스트 시일 SEAL, DUST	1	KDD 50 *					
47	-	웨어 링 RING, WEAR	2	Φ50×Φ55×15w *	-	S01-4999	시일 세트 SEAL SET	1	
48	-	O-링 O-RING	1	1BG 60 *					
49	-	백업 링 RING, BACK-UP	1	(T-3) G60 *					

SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

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SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

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2004. 11.

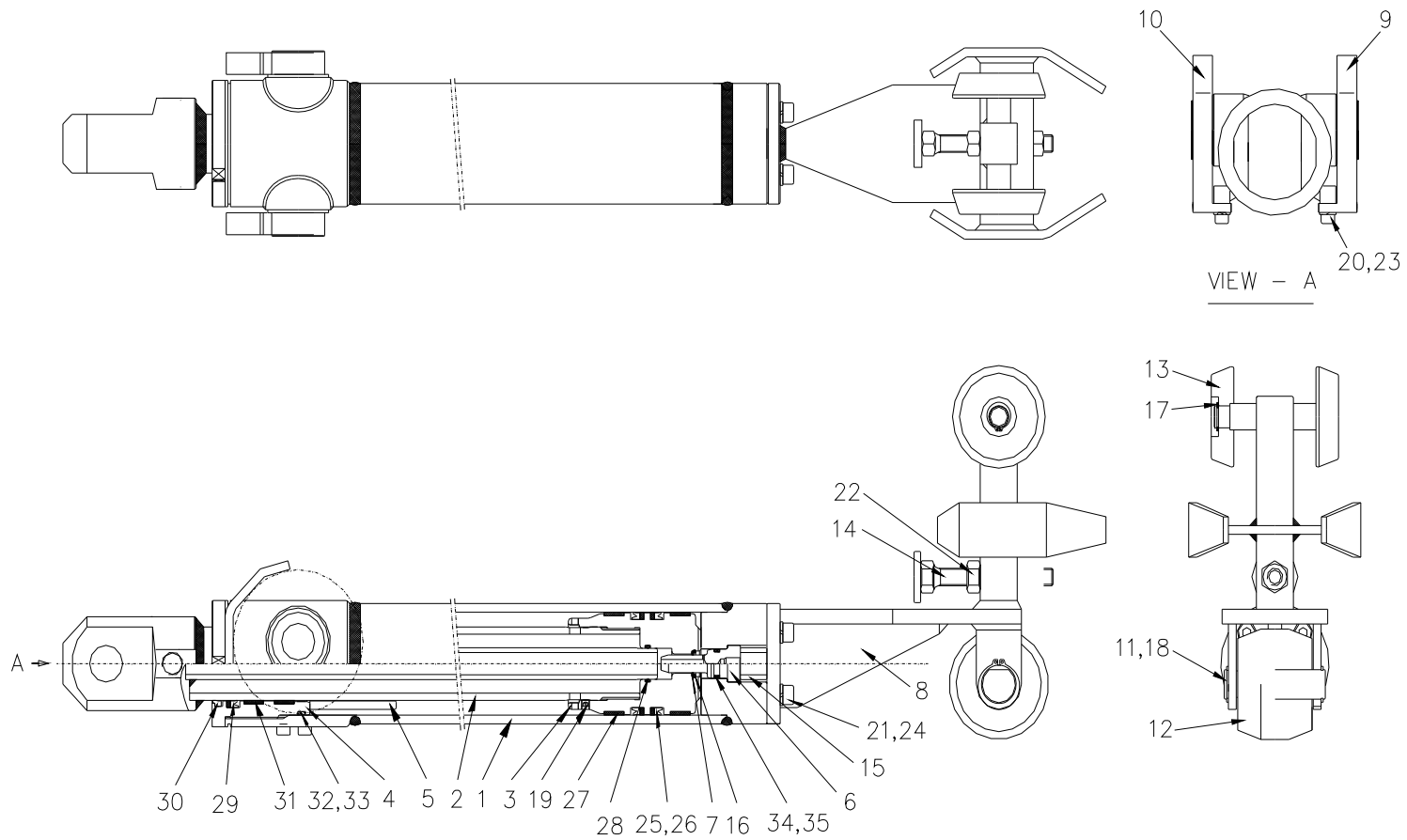
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-	HN98T3000	3단 신축 실린더 3rd EXTENSION CYLINDER	1	H01-5868	10	HN98T3080	브라켓 - L BRACKET - L	1	
1	HN98T3010	튜브 결합체 TUBE ASSY	1		11	SH39T2060	롤러 샤프트 SHAFT, ROLLER	1	Φ20×79L
2	HN03T3020	로드 결합체 ROD ASSY	1		12	SH09T2040	가이드 롤러 ROLLER, GUIDE	1	Φ75×56L
3	KL07T3030-01	피스톤 PISTON	1		13	SH17T2040	가이드 롤러 ROLLER, GUIDE	2	Φ70×17L
4	SH46T3040	로드 커버 ROD COVER	1		14	SS33T20B1-01	체크 볼트 BOLT, CHECK	1	
5	SH15T3050	스페이서 SPACER	1		15	SH16T3070	스페이서 - B SPACER - B	1	Φ15.3×Φ21.7×20
6	SS25T2050	쿠션 CUSHION	1		16	-	멈춤 링 STOP RING	1	AR18 *
7	SS25T2060	쿠션 링 CUSHION RING	1		17	-	스냅 링 SNAP RING	2	Φ15 *
8	HN03T3A10	브라켓 BRACKET ASS'Y	1		18	-	스냅 링 SNAP RING	2	Φ20 *
9	HN98T3070	브라켓 -R BRACKET - R	1		19	-	멈춤 나사 SCREW, SET	1	M5×P1.0×6L *

SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

HIAB190TM-6 6:0
2004. 11.



SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

HIAB190TM-6 6:0
2004. 11.

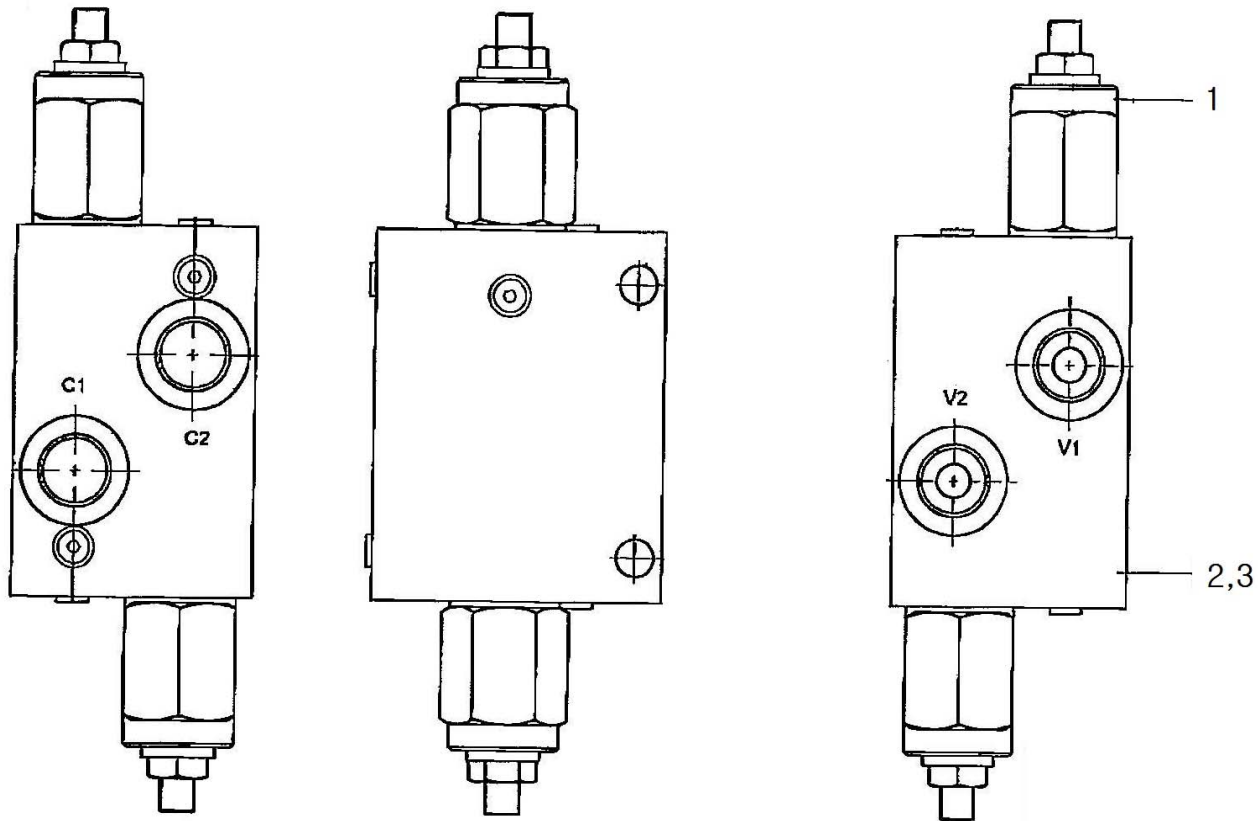
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20	-	소켓 볼트 SOCKET BOLT	4	M6×P1.0×15L *	30	-	더스트 시일 SEAL, DUST	1	KDD 50 *
21	-	소켓 볼트 SOCKET BOLT	4	M8×P1.25×30L *	31	-	웨어 링 RING, WEAR	2	Φ50×Φ55×15w *
22	-	너트 NUT	3	M12×P1.75×10H *	32	-	오링 O-RING	1	1B G65 *
23	-	스프링 와셔 WASHER, SPRING	4	M6 *	33	-	백업 링 RING, BACK-UP	1	(T-3) G65 *
24	-	스프링 와셔 WASHER, SPRING	4	M8 *	34	-	오링 O-RING	1	1B P16 *
25	-	피스톤 패킹 PACKING, PISTON	2	OSI 70 *	35	-	백업 링 RING, BACK-UP	1	(T-2) P16 *
26	-	백업 링 RING, BACK-UP	2	Φ60×Φ70×t3.0 *					
27	-	웨어 링 RING, WEAR	2	Φ70×Φ65×15w *					
28	-	오링 O-RING	2	1B P20 *	-	S01-2129	시일 세트 SEAL SET	1	
29	-	로드 패킹 PACKING, ROD	1	NI-300 50×60×10W *					

SPARE PARTS LIST



카운터 발란스 밸브
VALVE, COUNTER BALANCE

HIAB190TM-6 7:1
2014. 12.



SPARE PARTS LIST



카운터 밸런스 밸브
VALVE, COUNTER BALANCE

HIAB190TM-6 7 : 1
2014. 12.

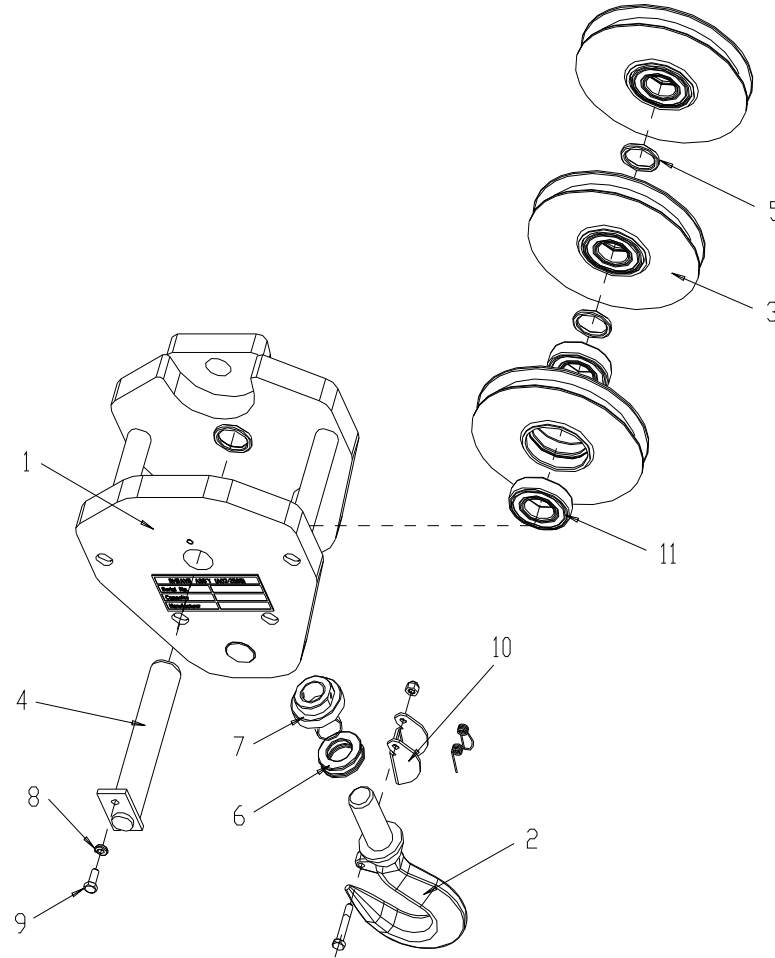
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-	H02-1003	카운터 밸런스 밸브 VALVE, COUNTER BALANCE	1						
1	H02-1055	오일 카운터 밸브 OIL COUNTER BALANCE	2	1CEL90F30S220-60					
2	D07-114	블록 BLOCK	1						
3	AXP8444-2T	플러그 PLUG	6						

SPARE PARTS LIST



쉬브 결합체
SHEAVE ASS'Y

HIAB190TM-6 8 : 2
2014. 12.



SPARE PARTS LIST



쉬브 결합체
SHEAVE ASS'Y

HIAB190TM-6 8:2
2014. 12.

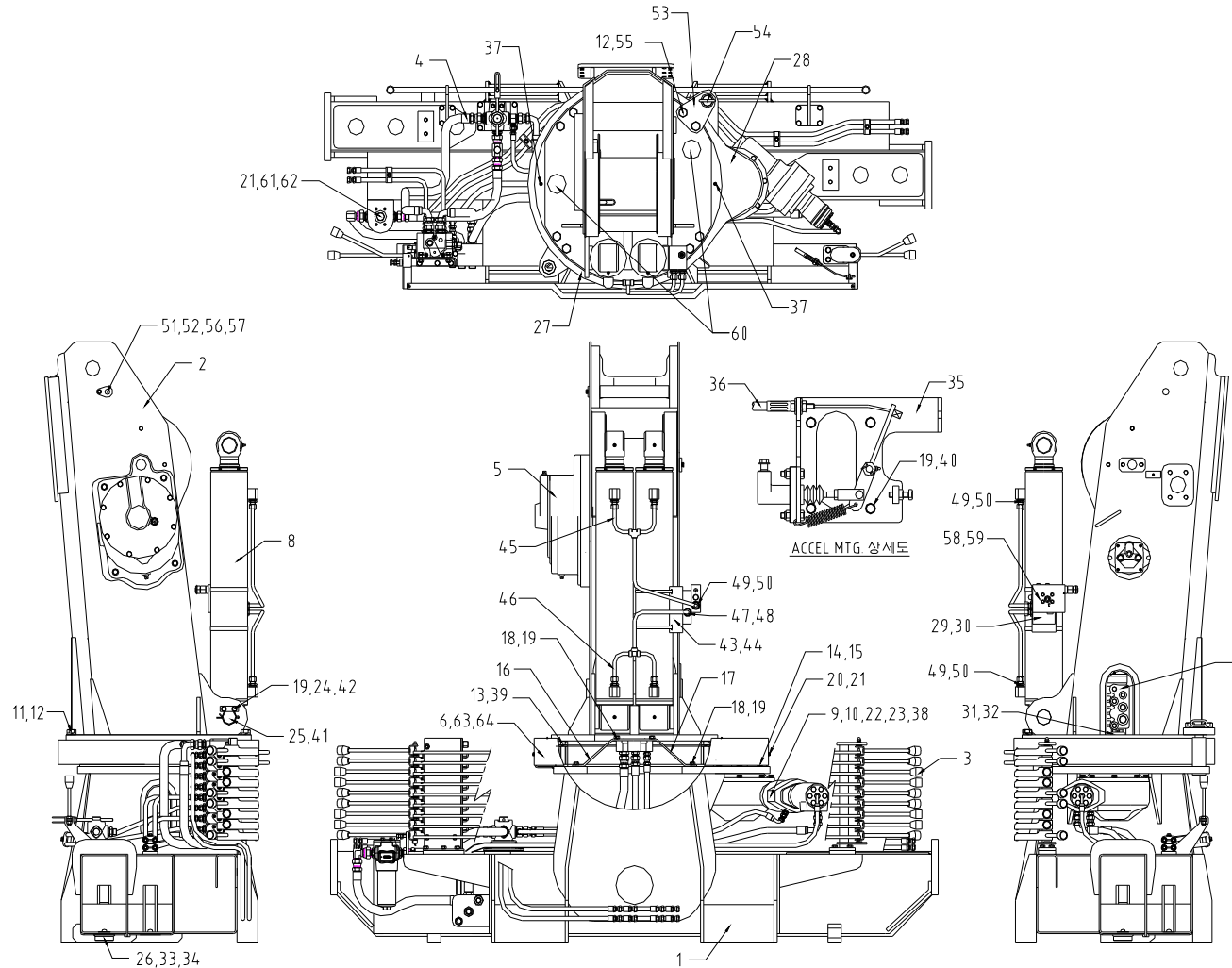
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-	A02-2565	쉬브 결합체 SHEAVE ASS'Y	1		10	S01-1596	아전 클립 결합체 CLIP ASS'Y, SAFETY	1	
1	HK-1002	바디 BODY	1		11	4112074	베어링 RADIAL BALL BEARING	2	B 6207ZZ
2	M01-1780	후크 HOOK	1						
3	HK-0006	쉬브 SHEAVE	3						
4	HK-0008	축 SHAFT	1						
5	HK-0010	스페이서 SPACER	4						
6	4211060	스러스트 볼 베어링 BEARING, THRUST BALL	1	#51206					
7	HK-0015	록 너트 NUT, LOCK	1	M30×P3.0					
8	3612081	스프링 와셔 WASHER, SPRING	1	WS8					
9	2110887	육각 볼트 BOLT, HEX. HEAD	1	BA8×20					

SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9 : 4
2014. 12.



SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9:4
2014. 12.

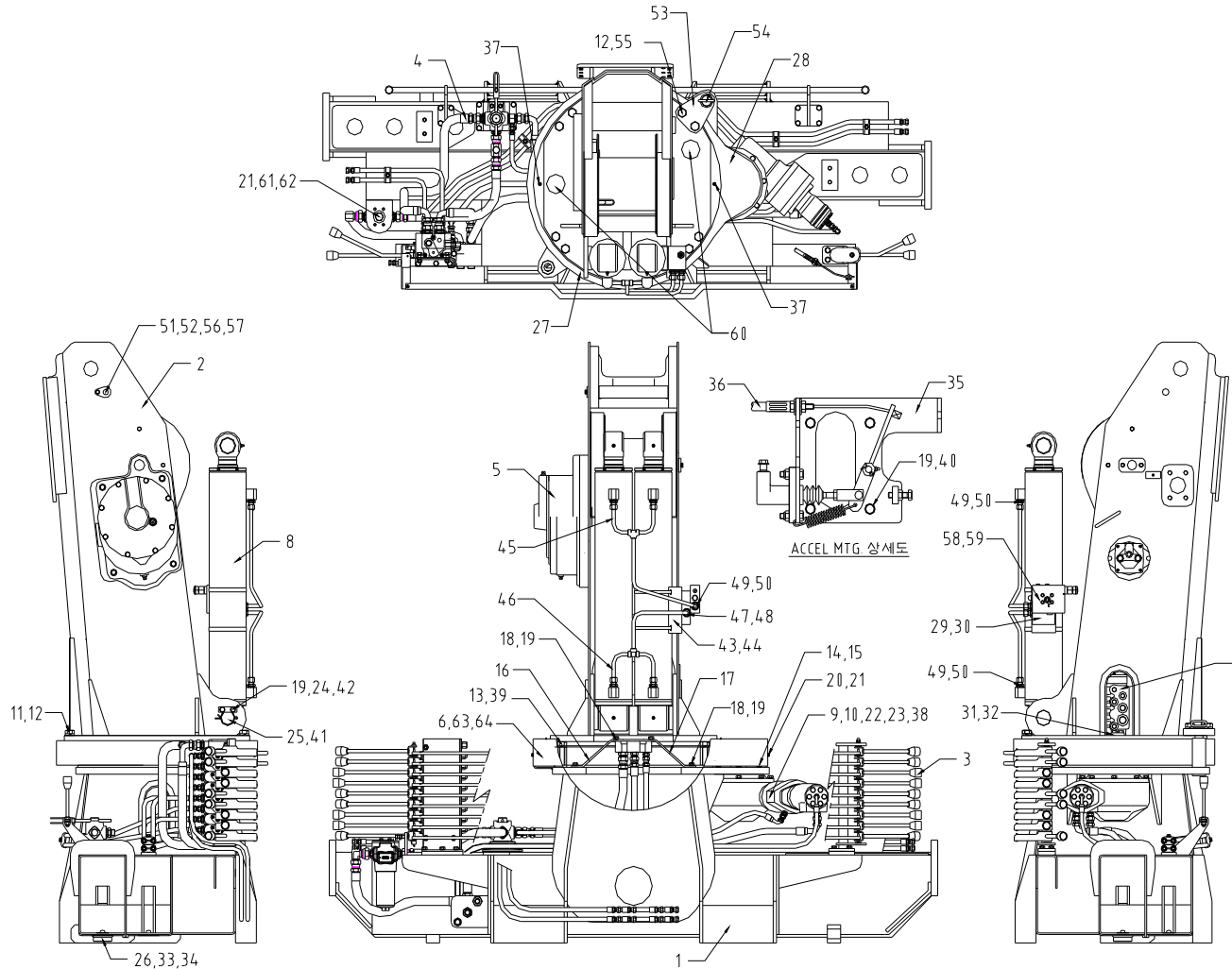
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-	A01-2185	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	1		10	H02-0200	선회 모터 MOTOR, SLEWING	1	OMP100C
1	A02-3078	베이스 결합체 BASE ASS'Y	1		11	S01-1306	육각 볼트 BOLT, HEX. HEAD	13	BA20×60(12.9T)
2	A02-3008	칼럼 결합체 COLUMN ASS'Y	1		12	3612201	스프링 와셔 WASHER, SPRING	33	WS20
3	A02-3393	컨트롤 시스템 CONTROL SYSTEM	1		13	S01-1287	육각 볼트 BOLT, HEX. HEAD	8	BA20×110(12.9T)
4	A02-3394	베이스 호스 결합체 BASE HOSE ASS'Y	1		14	2112157	육각 볼트 BOLT, HEX. HEAD	7	BA16×45
5	WC-4001	윈치 시스템 WINCH SYSTEM	1		15	3612161	스프링 와셔 WASHER, SPRING	7	WS16
6	BC2-0002	선회 베어링 BEARING, SLEWING	1		16	W01-3737	브라켓 BRACKET	1	t=6
7	A02-1740	로타리 조인트 결합체 ROTARY JOINT ASS'Y	1		17	W01-3738	브라켓 BRACKET	1	t=6
8	H01-2169	데릭 실린더 결합체 DERRICK CYLINDER ASS'Y	2		18	2111226	육각 볼트 BOLT, HEX. HEAD	8	BA10×30
9	BC1-0003	선회 감속기 REDUCER, SLEWING	1		19	3612101	스프링 와셔 WASHER, SPRING	14	WS10

SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9 : 4
2014. 12.



SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9:4
2014. 12.

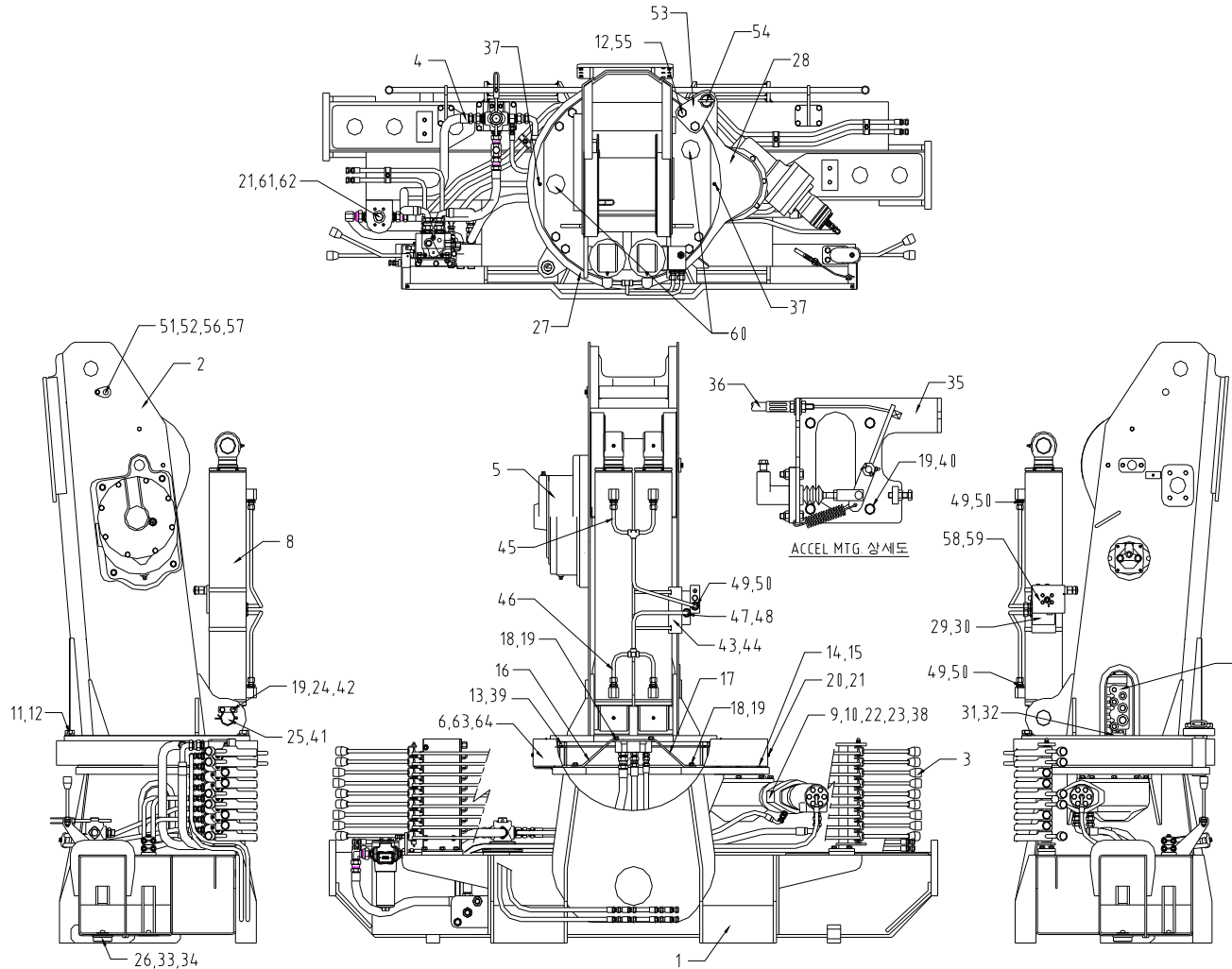
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20	2110447	육각 볼트 BOLT, HEX. HEAD	6	BA6×12	30	2610926	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	2	BB8×30
21	3612061	스프링 와셔 WASHER, SPRING	10	WS6	31	M05-2435	브라켓 BRACKET	1	t=12
22	2111537	육각 볼트 BOLT, HEX. HEAD	2	BA12×35	32	BO-0005	접시 머리 볼트 BOLT, FLAT HEAD	3	M10×35
23	3612121	스프링 와셔 WASHER, SPRING	2	WS12	33	OR-0062	어저스트 볼트 BOLT, ADJUST	2	M52×P3.0
24	2111196	육각 볼트 BOLT, HEX. HEAD	2	BA10×22	34	OR-0063	어저스트 패드 PAD, ADJUST	2	
25	BC2-0004	축 SHAFT	1	55×348	35	BC1-8002	악셀 마운팅 결합체 ACCEL MOUNTING ASS'Y	1	
26	2340576	세트 스크루 SCREW, SET (STICK END)	2	BM8×12	36	A02-1283	악셀 케이블 결합체 ACCEL CABLE ASS'Y	1	1700L
27	A05-1825	커버 (왼쪽) COVER (L.H)	1		37	4620702	그리스 니플 NIPPLE, GREASE	2	B-PT1/8
28	A05-1827	커버 (오른쪽) COVER (R.H)	1		38	S01-0469	가스켓 GASKET	1	t=3.2
29	M01-1482	블록 BLOCK	1	CAEG-LJN	39	S01-1286	육각 볼트 BOLT, HEX. HEAD	10	BA20×100

SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

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SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

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2014. 12.

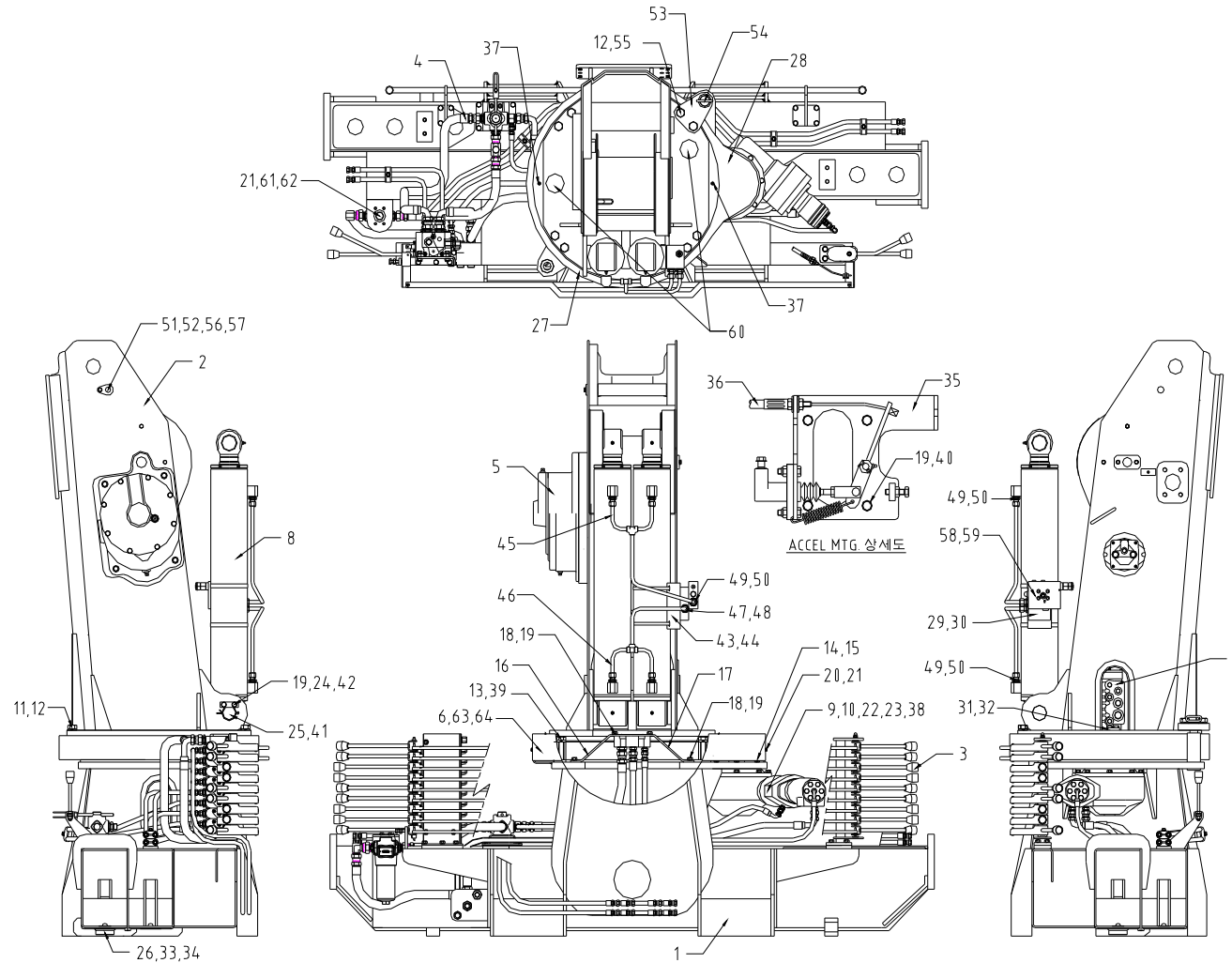
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40	2111166	육각 볼트 BOLT, HEX. HEAD	4	BA10×16	50	6800081	실링 와셔 WASHER, SEALING	5	NF216-8
41	1311941	분할 핀 PIN, SPLIT	1	PW10×100	51	2110886	육각 볼트 BOLT, HEX. HEAD	1	BA8×20
42	BC2-0005	플레이트 PLATE	1	t=9	52	3612081	스프링 와셔 WASHER, SPRING	1	WS8
43	BC2-0006	찬널 CHANNER	1	t=3.2	53	M01-0856	플레이트 PLATE	1	t=25
44	7811121	호스 클램프 CLAMP, HOSE	2	CH127	54	S01-2283	핀 PIN	1	
45	H01-2325	유압 파이프 PIPE, HYDRAULIC	1	Φ12×t2.0	55	S01-1899	육각 볼트 BOLT, HEX. HEAD	2	BA20×80(12.9T)
46	H01-2326	유압 파이프 PIPE, HYDRAULIC	1	Φ12×t2.0	56	S01-2584	축 SHAFT	1	Φ25×340L
47	9003351	파이프 니플 NIPPLE, PF PIPE	1	NFO12-PF3/8	57	A05-2307	롤러 결합체 ROLLER ASS'Y	1	
48	6010172	오링 O-RING	1	1B P14	58	985 2352	로드 홀딩 밸브 VALVE, LOAD HOLDING	1	
49	9001361	파이프 니플 NIPPLE, PF PIPE	5	NFP12×PF1/2	59	2615957	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB8×45

SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9 : 4
2014. 12.



SPARE PARTS LIST



베이스 & 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB190TM-6 9:4
2014. 12.

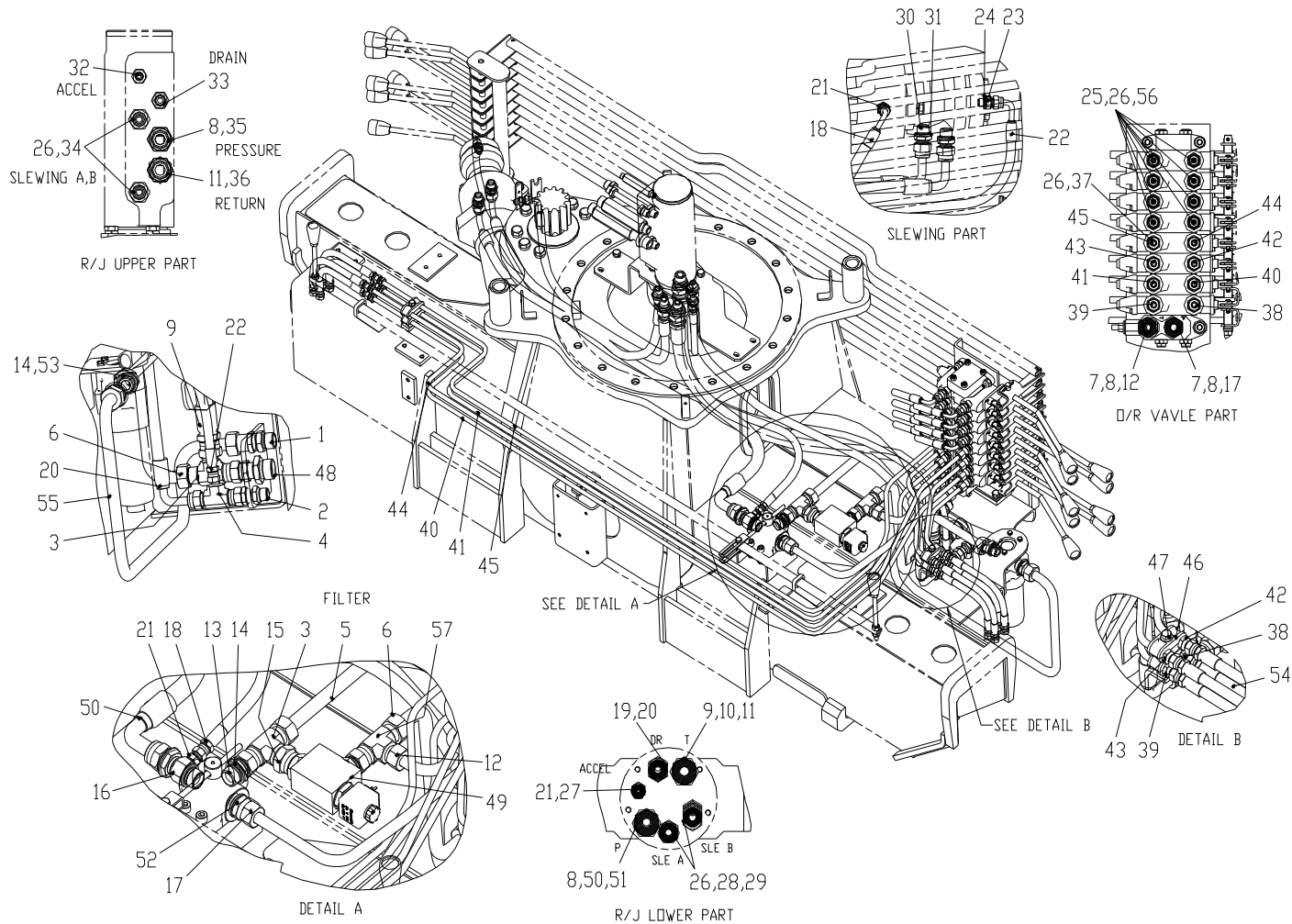
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60	S01-3371	커버 COVER, MC	2	Φ70×20L					
61	985 9934	압력 필터 FILTER, PRESSURE	1	DF BN/HC 110 G 20 A 1.11-B6-S0414(1280452)					
62	2110466	육각 볼트 BOLT, HEX. HEAD	4	BA6×16					
63	2112805	육각 볼트 BOLT, HEX. HEAD	2	BA20×70					
64	3113206	육각 너트 NUT, HEX.	2						

SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10:3
2014. 12.



SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10 : 3
2014. 12.

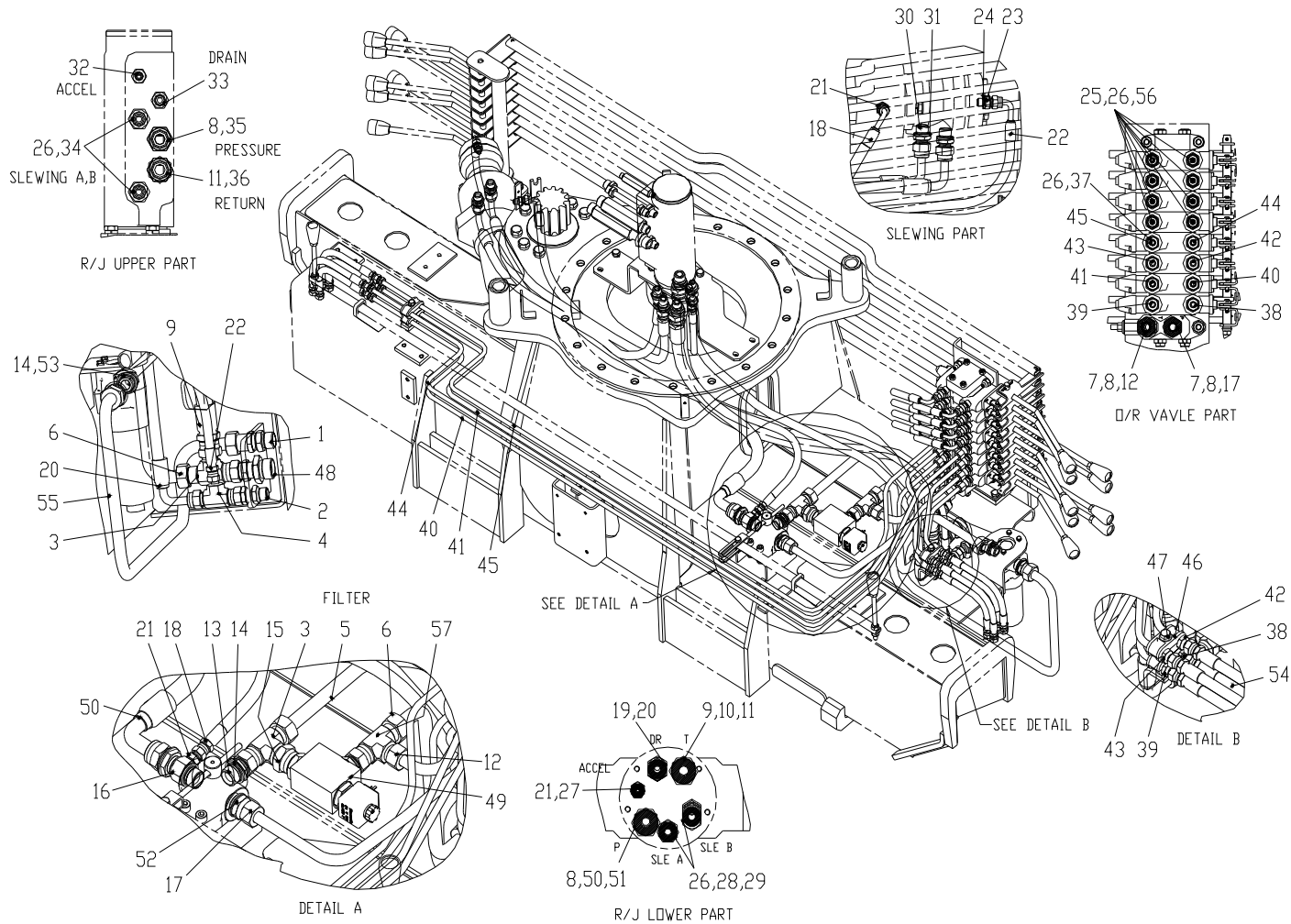
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-	A02-3394	베이스 호스 & 파이프 결합체 BASE HOSE & PIPE ASS'Y	1		10	9381092	호스 니플 NIPPLE, PF HOSE	1	NFCO3/4×3/4
1	S01-5040	벌크 헤드 호스 유니언 UNION, HOSE BULKHEAD	1	Φ20×PF3/4	11	6010282	O-링 O-RING	1	P24
2	BP-4003	벌크 헤드 호스 유니언 UNION, HOSE BULKHEAD	1	2-PF1/2	12	H01-6590	유압 파이프 PIPE, HYDRAULIC	1	
3	S01-5039	스위블 티 TEE, SWIVEL	2	PF3/4×Φ20×PF3/4	13	9270092	호스 유니언 UNION, CONICAL	2	3/4×3/4
4	S01-1608	호스 스위블 티 TEE, HOSE SWIVEL	1	2-PF1/2×PF1/4	14	6800121	실링 와셔 WASHER, SEALING	7	NF3/4
5	H01-6629	유압 파이프 PIPE, HYDRAULIC	1	Φ20×t2.0	15	S01-3020	스위블 SWIVEL, STRAIGHT	1	PF3/4×PF1/2
6	H01-6630	유압 파이프 PIPE, HYDRAULIC	1	Φ20×t2.0	16	S01-4674	니플 NIPPLE	1	PF3/4×PF3/4
7	9003401	파이프 니플 NIPPLE, PF PIPE	2	NTPO16-PF1/2	17	H01-6631	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0
8	6010222	O-링 O-RING	4	P20	18	7167902	고압 호스 HOSE, H.P (HECF)	1	1/4×1250-PF1/4
9	7122833	고압 호스 HOSE, H.P (HUCF)	1	5/8×1080-PF3/4	19	TS-0439	호스 니플 NIPPLE, PT HOSE	1	PT3/8×PF1/2

SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10:3
2014. 12.



SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10 : 3
2014. 12.

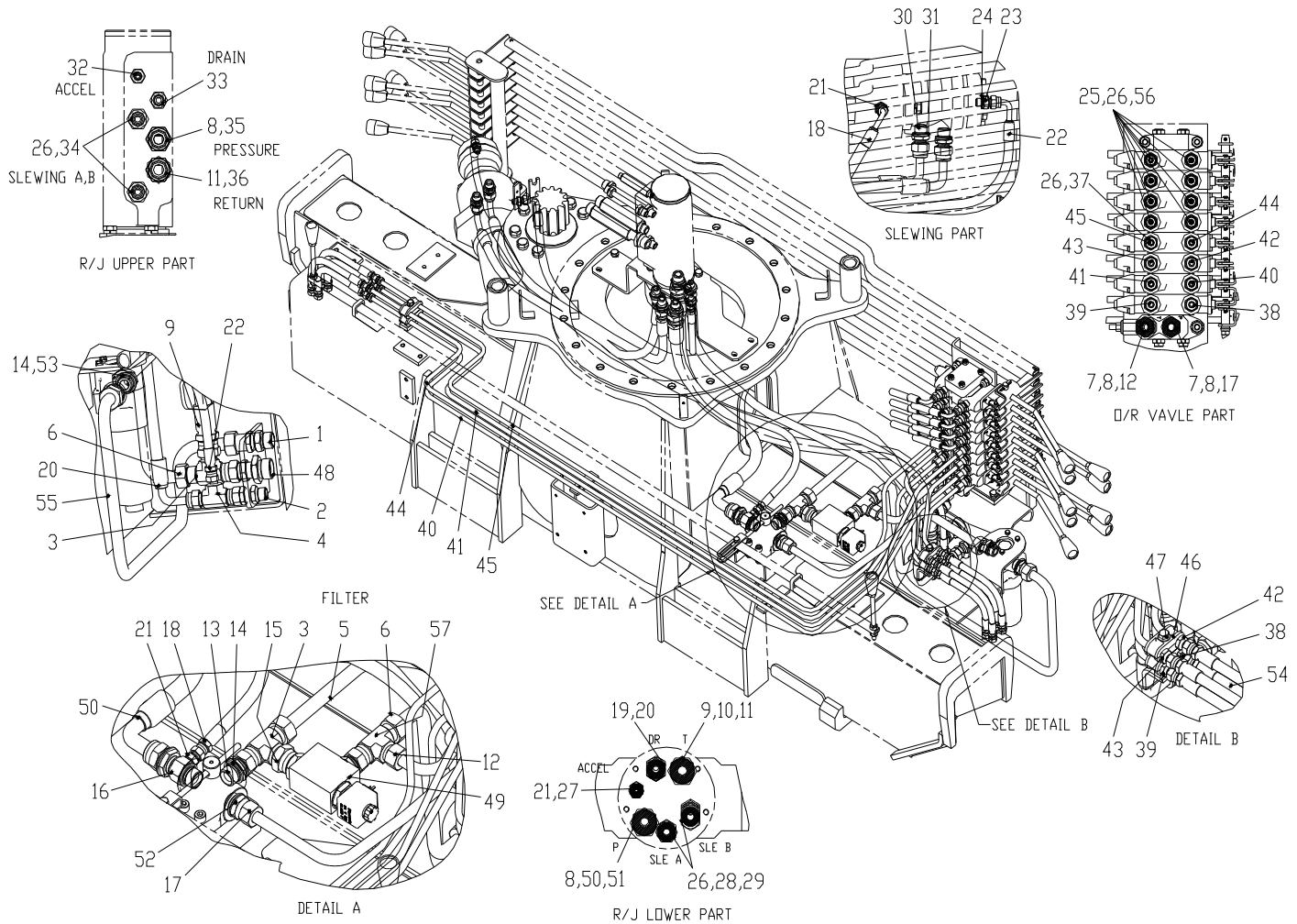
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20	7173843	고압 호스 HOSE, H.P (HECF)	1	1/2×1100-PF1/2	30	9270072	호스 유니언 UNION, CONICAL	2	1/2×1/2
21	9211062	호스 니플 NIPPLE, PT HOSE	3	PF1/4×PT1/4	31	6800081	실링 와셔 WASHER, SEALING	2	NF1/2
22	7168182	고압 호스 HOSE, H.P (HECF)	1	1/4×1950-PF1/4	32	BSP-0051	호스 니플 NIPPLE, PT HOSE	1	PF1/4×PF3/8
23	9270052	호스 유니언 UNION, CONICAL	1	1/4×1/4	33	BSP-0032	롱 니플 NIPPLE, LONG	1	PF3/8×PT3/8
24	6800041	실링 와셔 WASHER, SEALING	1	NF1/4	34	BSP-0033	롱 니플 NIPPLE, LONG	2	PF3/8×PF1/2
25	S01-0948	호스 니플 NIPPLE, PF HOSE	8	PF1/4(C)×PF3/8(O)	35	BSP-0034	롱 니플 NIPPLE, LONG	1	PF1/2×PF3/4
26	6010182	O-링 O-RING	20	P15	36	BSP-0035	롱 니플 NIPPLE, LONG	1	PF3/4×PF3/4
27	H01-1685	고압 호스 HOSE, H.P	1	1/4×1250-PF1/4	37	9003321	파이프 니플 NIPPLE, PF PIPE	8	NTPO10-PF3/8
28	9381062	호스 니플 NIPPLE, PF HOSE	2	NFCO1/2×1/2	38	H01-7830	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5
29	7172313	고압 호스 HOSE, H.P (HECF)	2	3/8×1020-PF1/2	39	H01-7831	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5

SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10 : 3
2014. 12.



SPARE PARTS LIST



베이스 호스 & 파이프 결합체
BASE HOSE & PIPE ASS'Y

HIAB190TM-6 10 : 3
2014. 12.

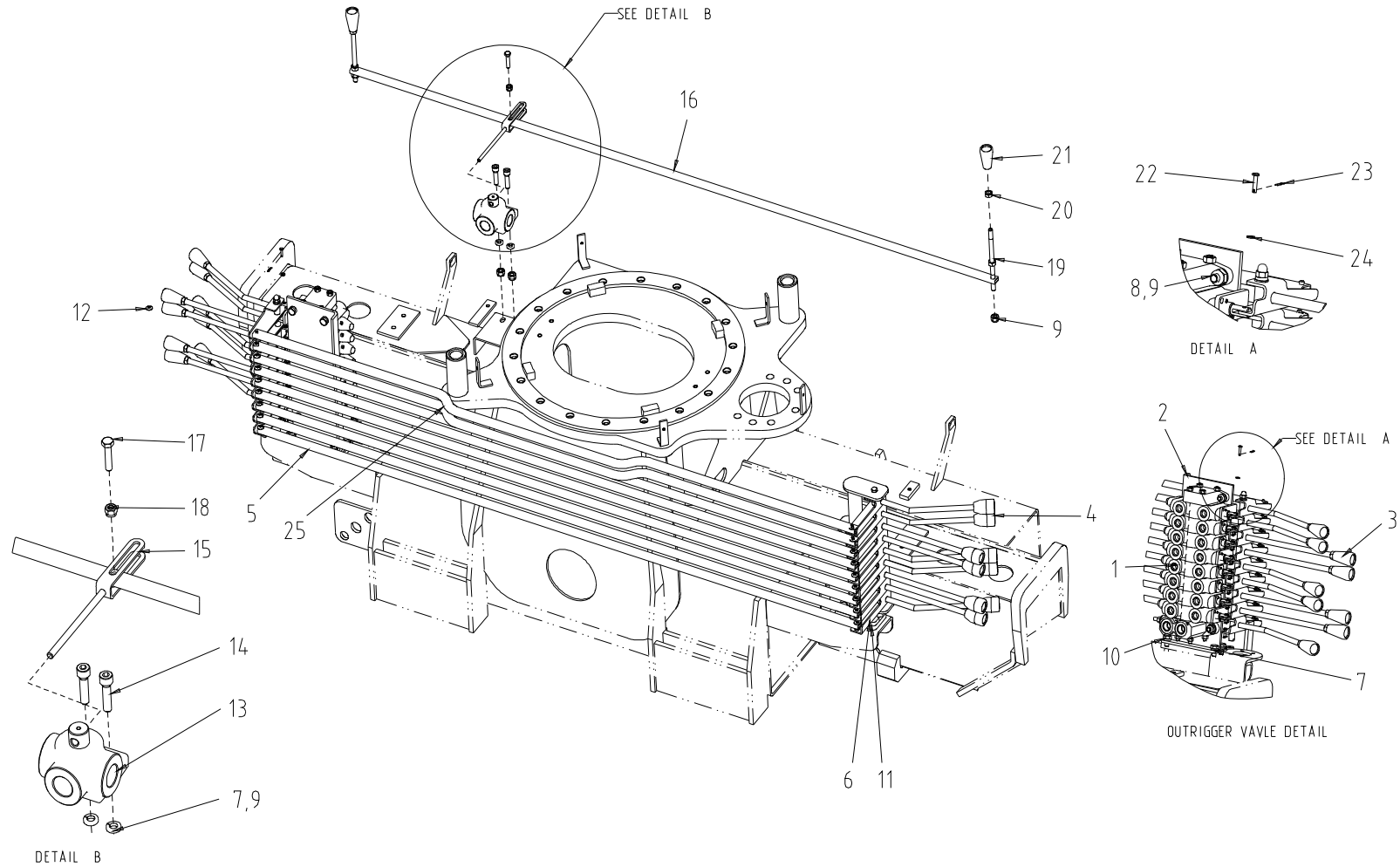
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40	H01-6634	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	50	7176683	고압 호스 HOSE, H.P (HECF)	1	5/8×650-PF3/4
41	H01-6635	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	51	9381082	호스 니플 NIPPLE, PF HOSE	1	NFCO3/4×1/2
42	H01-7832	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	52	9001411	파이프 니플 NIPPLE, PF PIPE	1	NFP16-PF3/4
43	H01-7833	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	53	9001451	파이프 니플 NIPPLE, PF PIPE	2	NFP20-PF3/4
44	H01-6638	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	54	7113513	고압 호스 HOSE, H.P (HUCF)	8	1/4×300-PF1/4
45	H01-6639	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	55	H01-6642	유압 파이프 PIPE, HYDRAULIC	1	Φ20×t2.0
46	S01-4269	클램프 CLAMP	8	Φ10-Φ16	56	7167962	고압 호스 HOSE, H.P (HECF)	8	1/4×1400-PF1/4
47	2185976	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	2	BWF8×65	57	S01-3340	파이프 스위블 티 TEE, PIPE SWIVEL	1	Φ16×Φ20×PF3/4
48	S01-1755	벌크 헤드 호스 유니언 UNION, HOSE BULKHEAD	1	PF1×PF3/4					
49	H02-1090	덤프 밸브 VALVE, DUMP	1						

SPARE PARTS LIST



아우트리거 제어 장치
OUTRIGGER CONTROL SYSTEM

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2014. 12.



SPARE PARTS LIST



아우트리거 제어 장치
OUTRIGGER CONTROL SYSTEM

HIAB190TM-6 11:2
2014. 12.

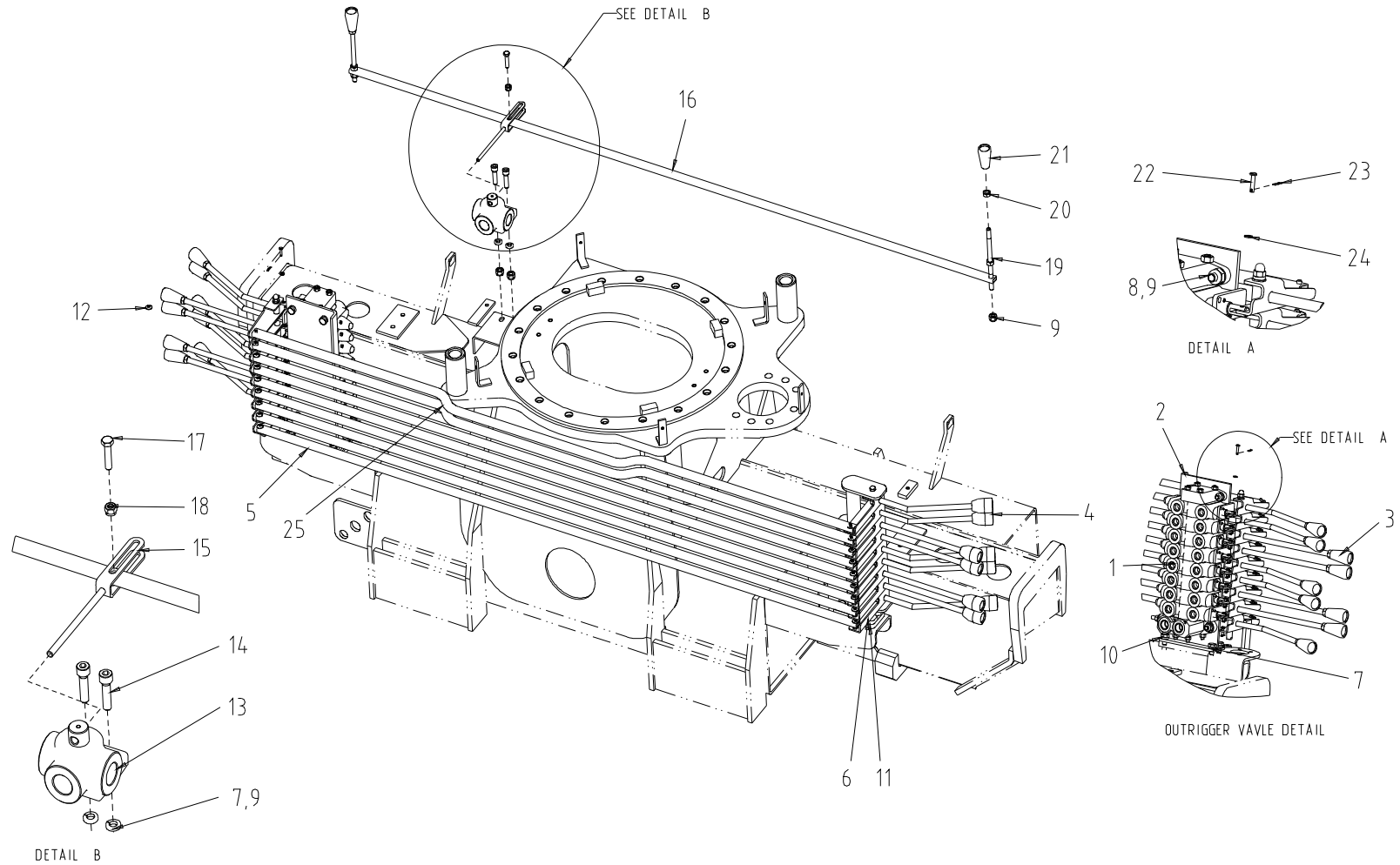
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-	A02-3393	아우트리거 제어 장치 OUTRIGGER CONTROL SYSTEM	1		10	2111177	육각 머리 볼트 BOLT, HEX. HEAD	4	BA10×18
1	H02-1211	아우트리거 제어 밸브 VALVE, O/R CONTROL	1	TX50/8	11	2111206	육각 머리 볼트 BOLT, HEX. HEAD	4	BA10×25
2	A05-4026	브라켓트 결합체 BRACKET ASS'Y	1		12	S01-0854	백 와셔 WASHER, BACK	18	SPN06
3	A05-4391	아우트리거 레버 결합체 LEVER ASS'Y' O/R (1)	1		13	N01-2464	방향 전환 밸브 VALVE. DIVERTER	1	3WAY
4	A05-4028	아우트리거 레버 결합체 LEVER ASS'Y' O/R (2)	1		14	2611247	구멍볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	2	BB10×40
5	M05-0967	로드 레버 ROD LEVER	7	t2.5×20×10	15	CT-3009	링크 LINK	1	
6	3511101	평 와셔 WASHER, PLAIN	4	WP10	16	CT-3012	로드 레버 ROD LEVER	1	t2.5×10×20
7	3612101	스프링 와셔 WASHER, SPRING	13	WS10	17	2110937	육각 머리 볼트 BOLT, HEX. HEAD	1	BA8×35
8	2111246	육각 머리 볼트 BOLT, HEX. HEAD	3	BA10×40	18	S01-0005	셀프 로킹 너트 NUT, SELF LOCKING	1	M8
9	S01-0006	셀프 로킹 너트 NUT, SELF LOCKING	7	M10	19	M01-0444	레버 LEVER	2	Φ10×173L

SPARE PARTS LIST



아우트리거 제어 장치
OUTRIGGER CONTROL SYSTEM

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SPARE PARTS LIST



아우트리거 제어 장치
OUTRIGGER CONTROL SYSTEM

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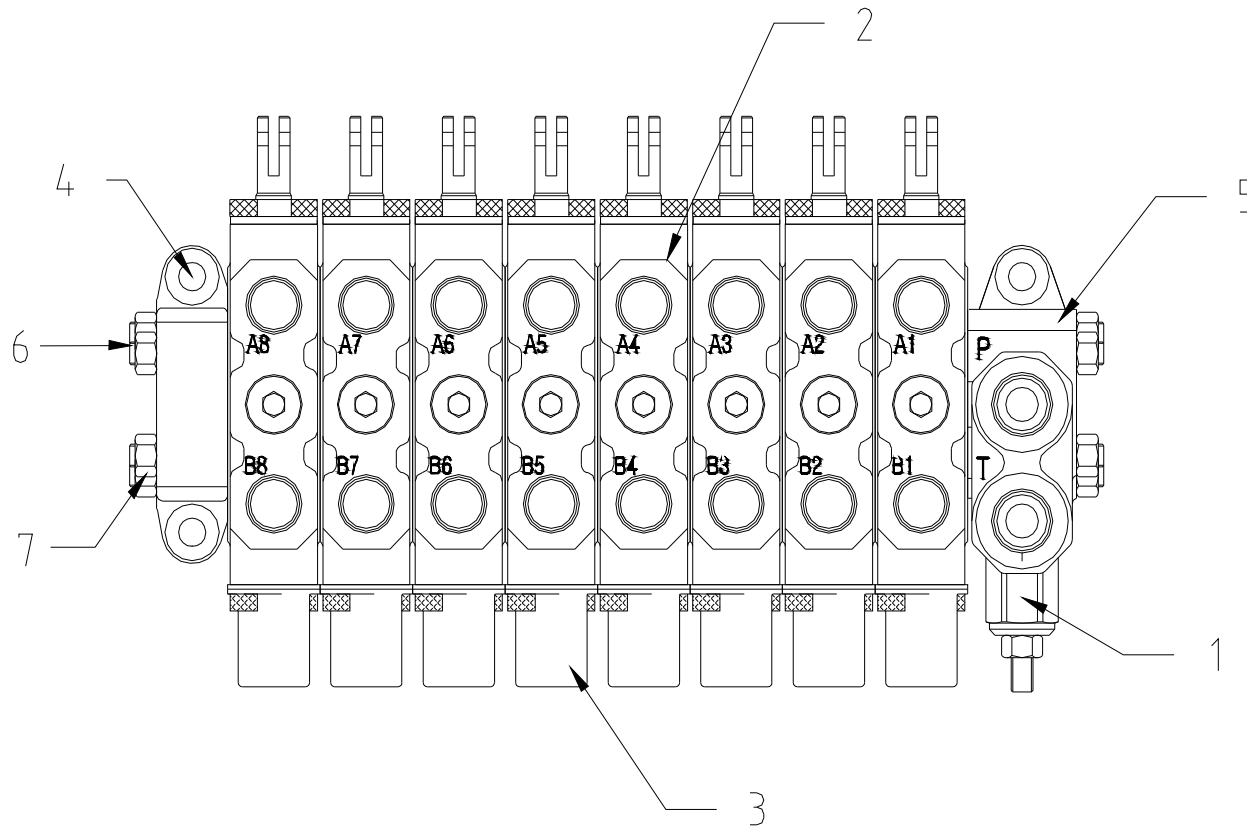
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20	3112106	육각 너트 NUT, HEX.	4	NA10					
21	S01-0048	손잡이 KNOB (RED)	2						
22	CS-0008	핀 PIN	9	Φ4.5×20					
23	CS-0009	싱글 스프링 핀 SPRING PIN, SINGLE	9	Φ1×15					
24	3511051	평 와셔 WASHER, PLAIN	9	WP5					
25	M05-0865	로드 레버 ROD LEVER	2	t1.6×12×23					

SPARE PARTS LIST



아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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SPARE PARTS LIST



아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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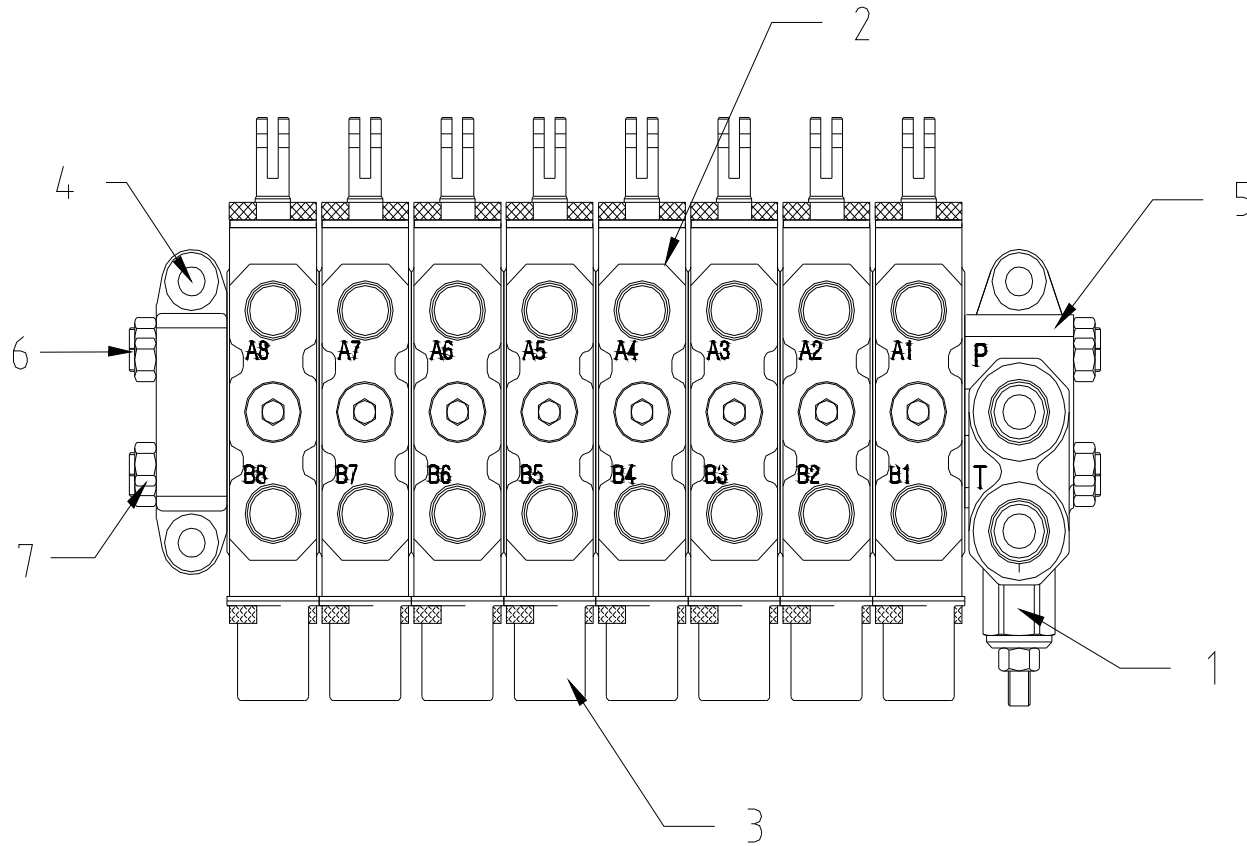
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-	H02-1211	스태빌라이저 조종 밸브 STABILIZER CONTROL VALVE	1	TX50-8	-	1021025060	로드 체크 팝펫 POPPET LOAD CHECK	8	
1	H02-1146	블록 결합체 인넷 BLOCK ASS'Y INLET	1		-	2011011012	로드 체크 스프링 SPRING LOAD CHECK	8	
-	1024005010	블록 인넷 BLOCK INLET	1		-	1021028010	로드 체크 플러그 PLUG LOAD CHECK	8	
-	2001420055	오링 O-RING	1		-	2001020014	오링 O-RING	8	
-	1000028020	플러그 포트 PLUG PORT	1		-	1024010020	캡 리턴 CAP RETURN	8	
-	2001020011	오링 O-RING	1		-	2001010013	오링 O-RING	8	
2	3019500030	메인 릴리프 밸브 VALVE, MAIN RELIEF	1		-	2015340010	더스트 시일 SEAL DUST	8	
3	H02-1147	블록 결합체 BLOCK ASS'Y WORK	8		-	1024009020	브라켓 플레이트 레버 BRACKET PLATE LEVER	8	
-	1024005020	블록 워크 BLOCK WORK	8		-	2003212024	볼트 BOLT	16	
-	2001420055	오링 O-RING	8		-	2003212025	볼트 BOLT	16	

SPARE PARTS LIST



아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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SPARE PARTS LIST



아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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2014. 12.

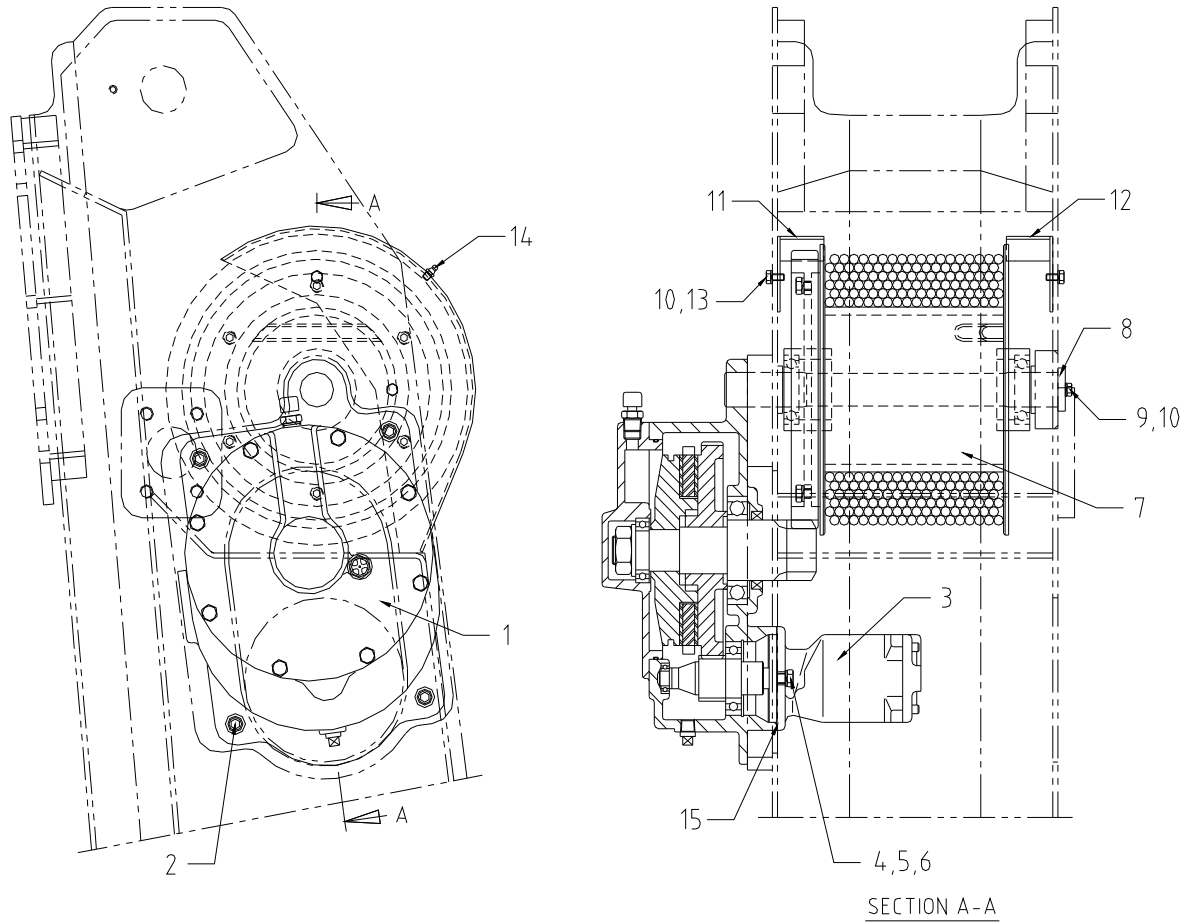
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4	H02-1148	스풀 결합체 SPOOL ASS'Y WORK	8		7	2008021008	너트 NUT	4	
-	1024036011	스풀 스톱드 SPOOL STD	8						
-	2001010013	오링 O-RING	8						
-	2015340010	더스트 시일 SEAL DUST	8						
-	1024023010	플레이트 시일 PLATE SEAL	8						
-	1024031010	스프링 세트 SEAT SPRING	16						
-	2011011023	스프링 리턴 SPRING RETURN	8						
-	1024004010	볼트 스페이서 BOLT SPACER	8						
5	1024005030	블록 커버 앤드 BLOCK COVER END	1						
6	1000088390	타이 볼트 BOLT TIE	4						

SPARE PARTS LIST



원치 장치
WINCH SYSTEM

HIAB190TM-6 13 : 2
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SPARE PARTS LIST



원치 장치
WINCH SYSTEM

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2014. 12.

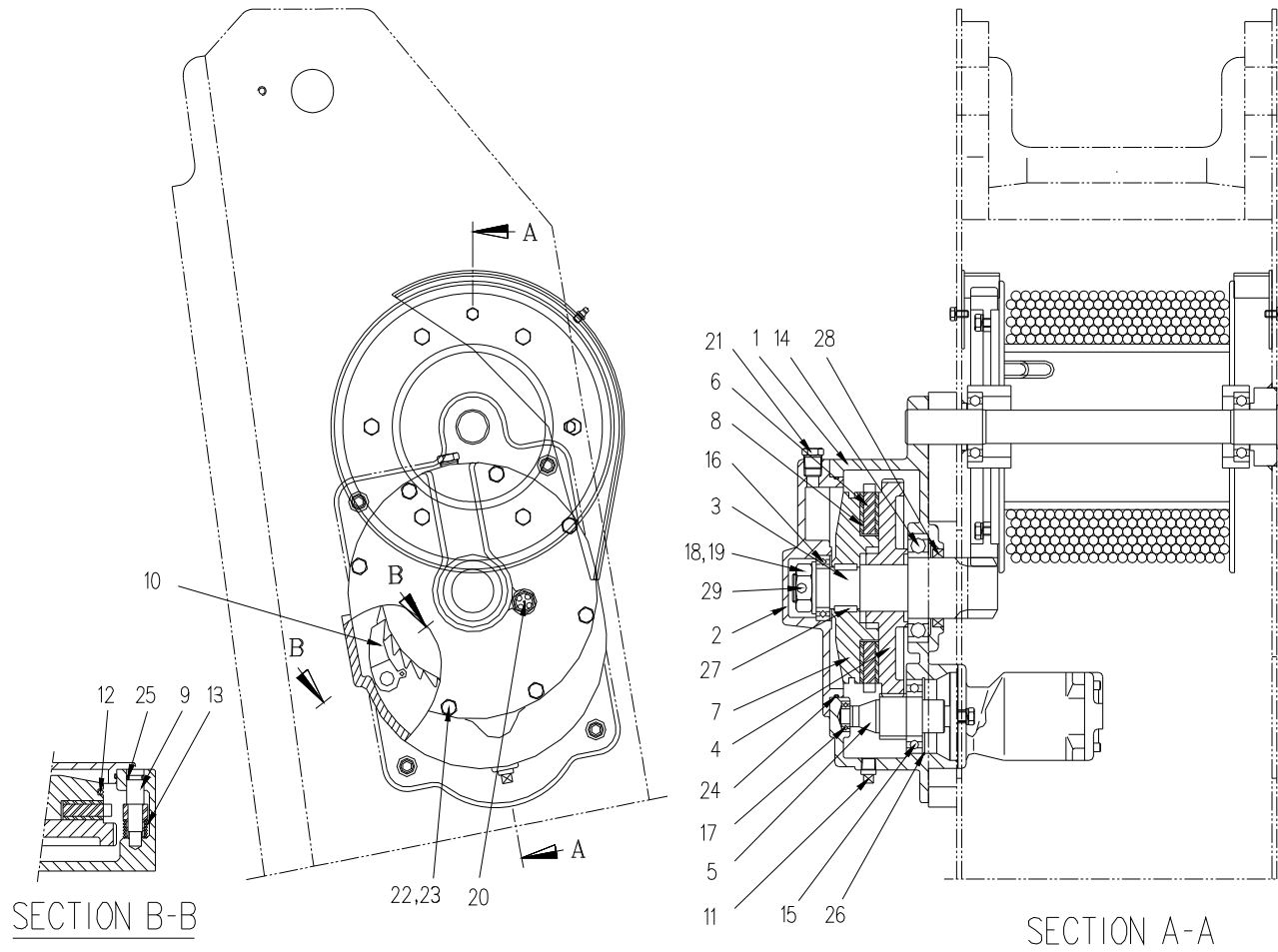
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-	WC-4001	원치 장치 WINCH SYSTEM	1		9	2110926	육각 볼트 BOLT, HEX. HEAD	2	BA8×30
1	H02-0296	감속기 결합체 REDUCER ASS'Y	1		10	3612081	스프링 와셔 WASHER, SPRING	6	WS8
2	2611547	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	4	BB12×40	11	WC-4013	커버 COVER, LH	1	
3	H02-0104	원치 모터 MOTOR, WINCH	1	JMF-47-01	12	WC-4016	커버 COVER, RH	1	
-	S01-5768	시일 키트 SEAL KIT	1		13	2110866	육각 볼트 BOLT, HEX. HEAD	4	BA8×16
4	2111567	육각 볼트 BOLT, HEX. HEAD	2	BA14×50	14	4610212	그리스 니플 NIPPLE, GREASE	1	A-M6×1
5	3511141	평 와셔 WASHER, PLAIN	2	WP14	15	N01-3202	가스켓 GASKET	1	t=3.2
6	3612141	스프링 와셔 WASHER, SPRING	2	WS14					
7	WC-4007	드럼 DRUM ASSY	1						
8	WC-0014	축 SHAFT	1						

SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

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SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

HIAB190TM-6 14:0
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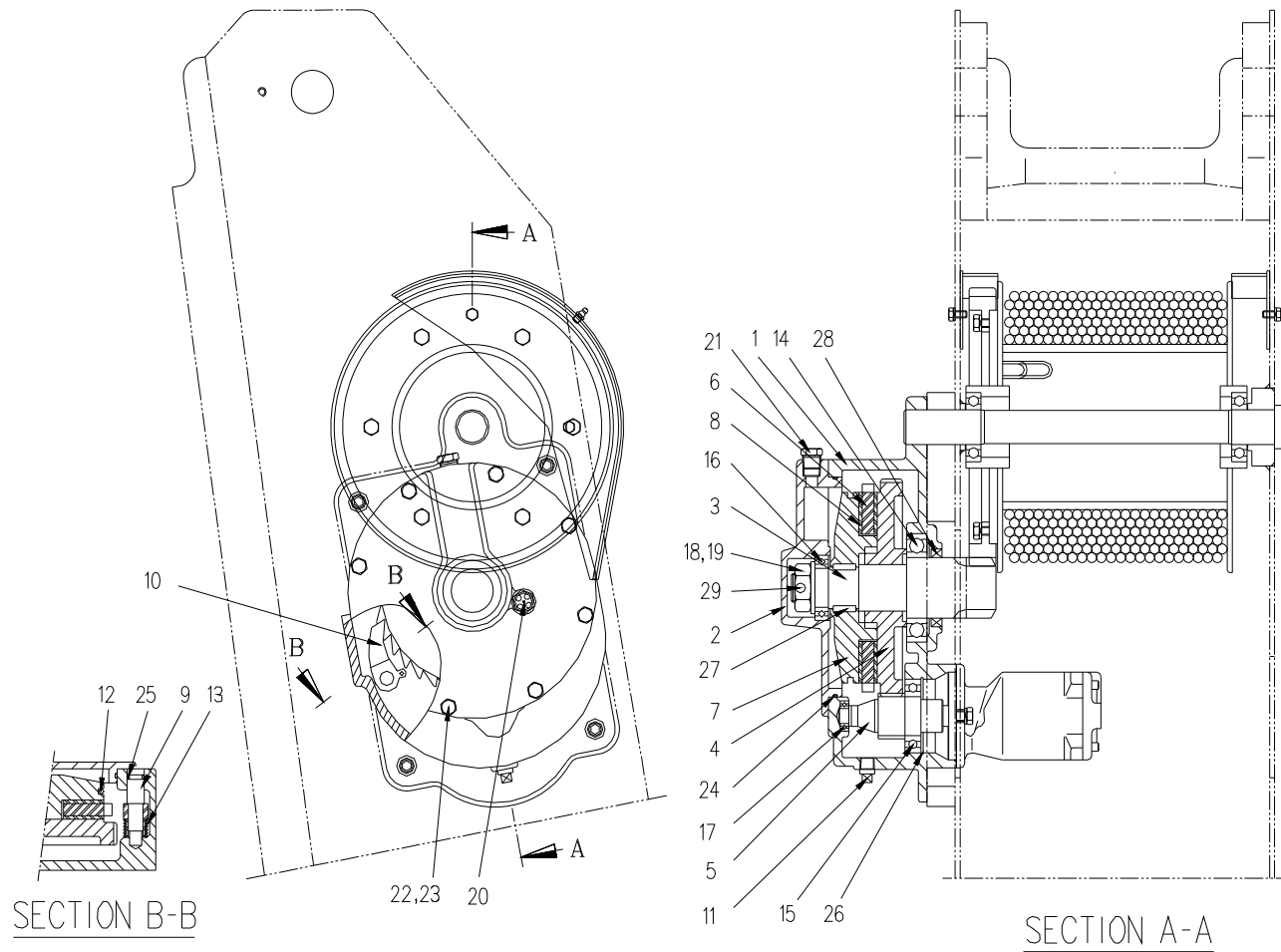
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-	H02-0296	원치 장치 WINCH SYSTEM	1		10	DM-06-11-1010	후크 HOOK	1	
1	DM-06-11-1001-02	케이스 CASE	1		11	DM-06-11-1011	캡 CAP	1	PT3/8
2	DM-06-11-1002	케이스 커버 COVER, CASE	1		12	DM-06-11-1012	스프링 SPRING	1	
3	DM-06-11-1003	출력 기어 GEAR, OUTPUT	1		13	DM-06-11-1013	스프링 SPRING	1	
4	DM-06-11-1004	스퍼 기어 GEAR, SPUR	1		14	4112144	깊은 홈 볼 베어링 BEARING, RADIAL BALL	1	6214ZZ
5	DM-06-11-1005	입력 기어 GEAR, INPUT	1		15	4112094	깊은 홈 볼 베어링 BEARING, RADIAL BALL	1	6209ZZ
6	DM-06-11-1006	라쳇 RATCHET	1		16	4110094	깊은 홈 볼 베어링 BEARING, RADIAL BALL	1	6009ZZ
7	DM-06-11-1007	디스크 플레이트 PLATE, DISK	1		17	4110034	깊은 홈 볼 베어링 BEARING, RADIAL BALL	1	6003ZZ
8	DM-06-11-1008	디스크 DISK	2		18	DM-06-11-1014	홈 볼이 육각 너트 NUT, SLOT HEX.	1	M33
9	DM-06-11-1009	후크 샤프트 SHAFT, HOOK	1		19	DM-06-11-1015	평 와셔 WASHER, PLAIN	1	M33

SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

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SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

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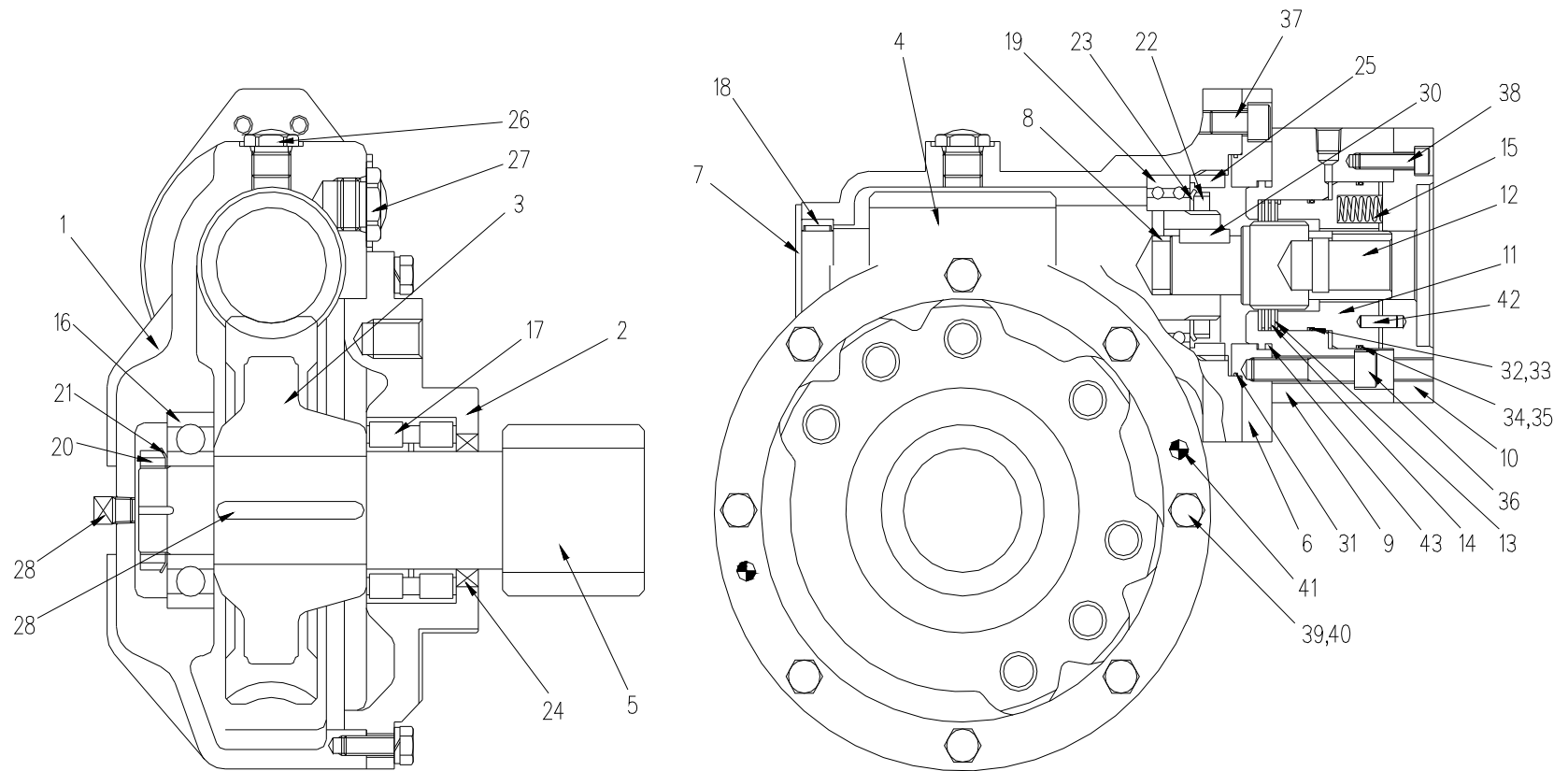
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20	DM-06-11-1016	오일 게이지 GAUGE, OIL	1	PF1/2					
21	DM-06-11-1017	에어 브리더 BRETHER, AIR	1						
22	2111206	육각 볼트 BOLT, HEX. HEAD	8	BA10×25					
23	3612101	스프링 와셔 WASHER, SPRING	8	WS10					
24	DM-06-11-1018	O-링 O-RING	1	273					
25	6010192	O-링 O-RING	1	1B P16					
26	4525561	멈춤 링 RING, RETAINING	1	RB85					
27	DM-06-11-1019	평행 키 KEY, PLAIN	2						
28	DM-06-11-1020	오일 시일 SEAL, OIL	1						
29	1311141	분할 핀 PIN, SPLIT	1	PW5×50					

SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

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선회 감속기
SLEWING REDUCER

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2004. 11.

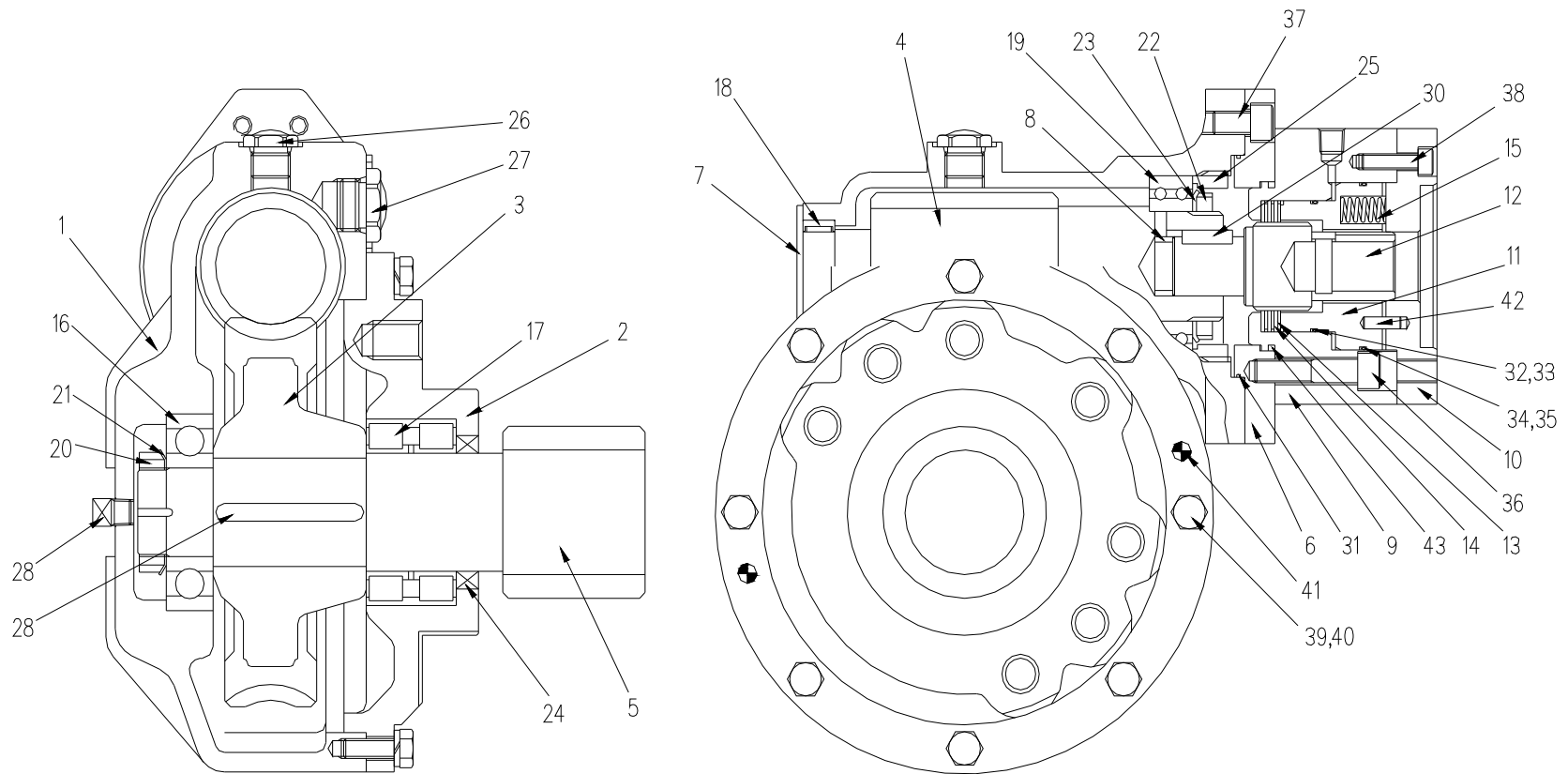
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-	BC1-0003	선회 감속기 SLEWING REDUCER	1		10	07-04-2007	모터 아답터 ADAPTOR, MOTOR	1	
1	07-07-1001	케이스 CASE	1		11	07-04-2037	브레이크 피스톤 PISTON, BRAKE	1	
2	07-07-1002	커버 COVER	1		12	07-04-2909	브레이크 축 SHAFT, BRAKE	1	
3	07-07-1003	웜 기어 GEAR, WORM	1		13	07-04-2033	디스크 DISK	3	
4	07-07-1004	웜 축 SHAFT, WORM	1		14	07-04-2034	플레이트 PLATE	3	
5	07-07-HA05	피니언 축 SHAFT, PINION	1		15	07-04-2018	스프링 SPRING	8	
6	07-07-HA06	아답터 ADAPTOR	1		16	4113092	깊은 홈 볼 베어링 BEARING, RADIAL BALL	1	6309ZZ
7	07-07-1007	플레이트 커버 COVER, PLATE	1		17	BC1-0003-1	롤러 베어링 BEARING, ROLLER	1	SL04-5012
8	07-07-HA08	스페이서 SPACER	1		18	BC1-0003-2	니들 베어링 BEARING, NEEDLE	1	RNA4906
9	07-04-2006	브레이크 하우스 HOUSING, BRAKE	1		19	BC1-0003-3	볼 베어링 BEARING, BALL	1	5210

SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

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선회 감속기
SLEWING REDUCER

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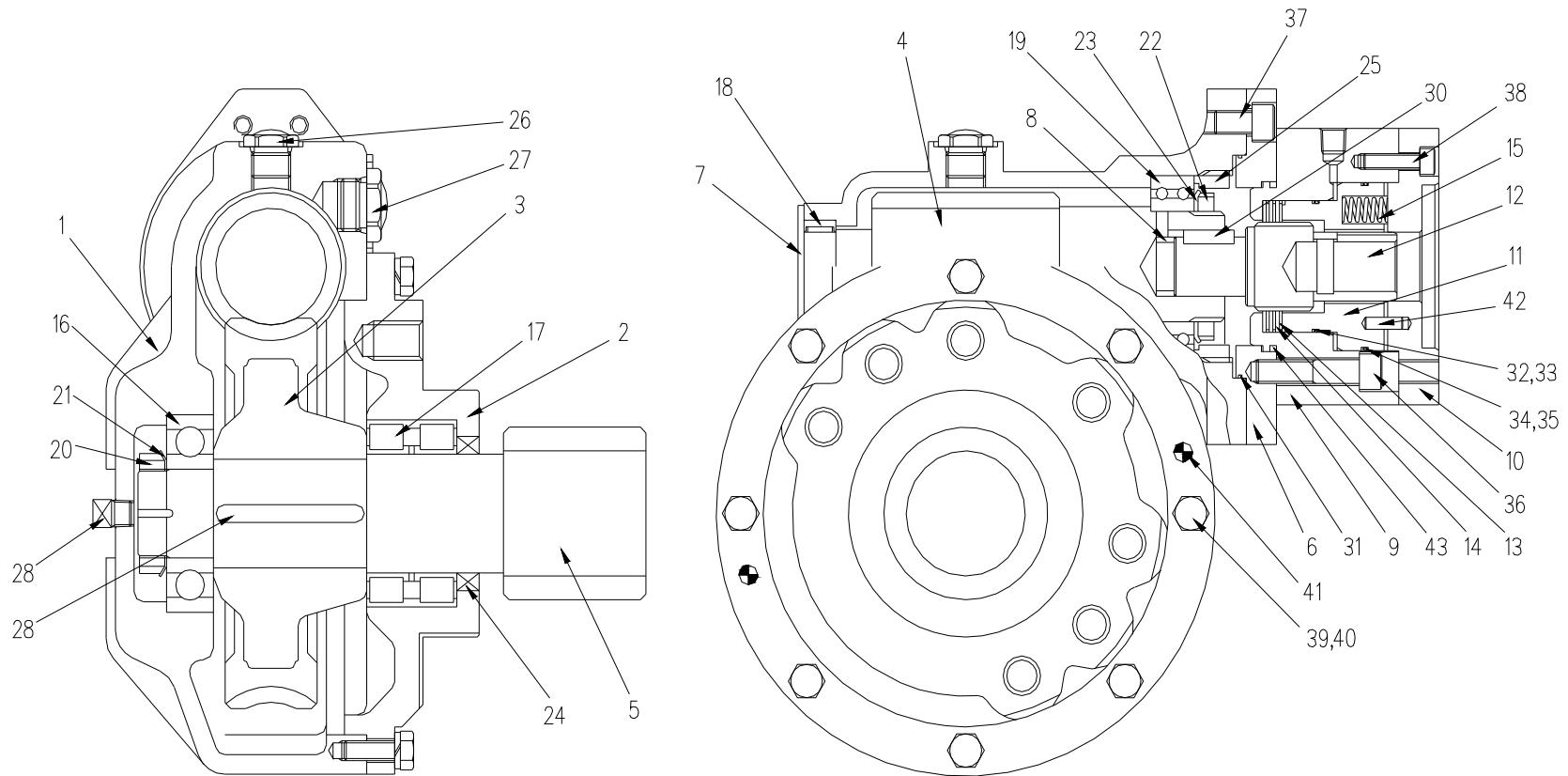
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20	BC1-0003-4	베어링 너트 NUT, BEARING	1	AN09	30	BC1-0003-13	키 KEY	1	
21	BC1-0003-5	베어링 와셔 WASHER, BEARING	1	AW09	31	6012392	O-링 O-RING	1	1B G95
22	BC1-0003-6	베어링 너트 NUT, BEARING	1	AN10	32	6012332	O-링 O-RING	1	1B G65
23	BC1-0003-7	베어링 와셔 WASHER, BEARING	1	AW10	33	6035281	백업 링 RING, BACK-UP	1	T2 G65
24	BC1-0003-8	오일 시일 OIL SEAL	1	607812	34	6012352	O-링 O-RING	1	1B G75
25	07-07-1009	고정 시일 LOCK THREAD	1		35	6035301	백업 링 RING, BACK-UP	1	T2 G75
26	BC1-0003-9	오일 게이지 GAUGE, OIL	1	PF1/2	36	2616576	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	6	BB12×55
27	BC1-0003-10	캡 CAP	1	PF3/4	37	2611486	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	4	BB12×20
28	BC1-0003-11	플러그 PLUG	1	PT1/2	38	2610926	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	6	BB8×30
29	BC1-0003-12	키 KEY	2		39	2111226	육각 볼트 BOLT, HEX. HEAD	8	BA10×30

SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

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SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

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2004. 11.

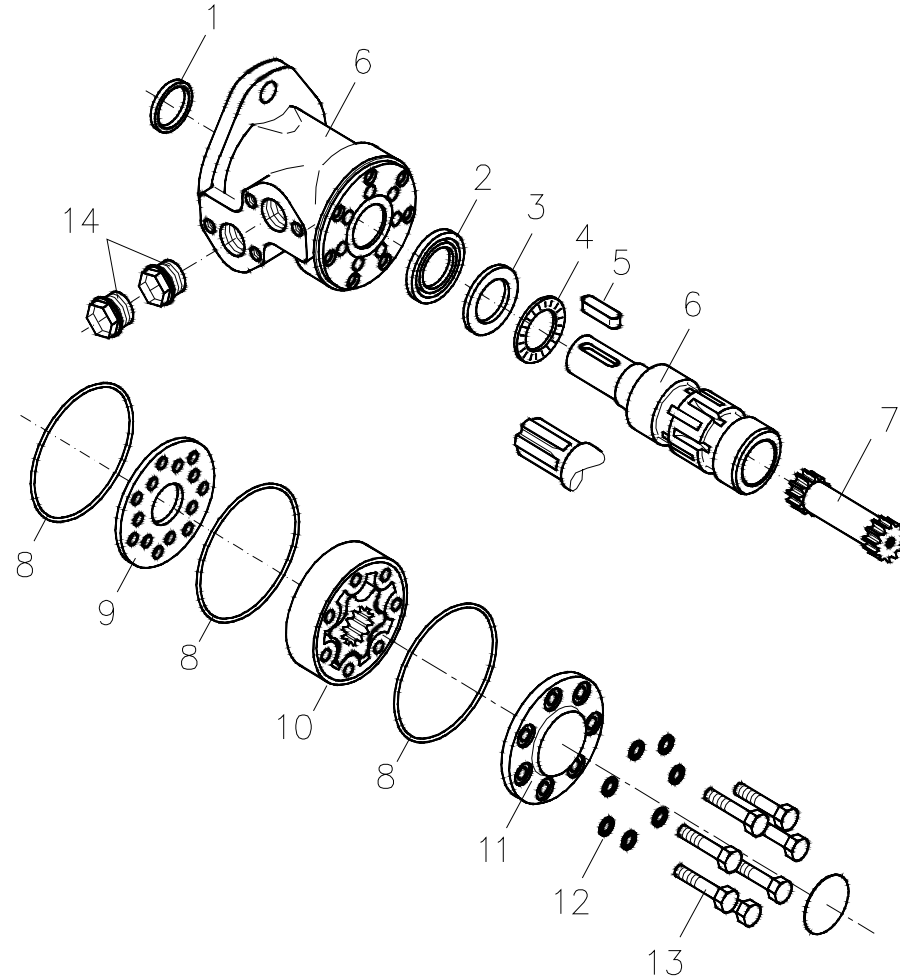
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40	3612101	스프링 와셔 WASHER, SPRING	1	WS10					
41	BC1-0003-14	핀 PIN	1						
42	BC1-0003-15	핀 PIN	1						
43	6012362	O-링 O-RING	1	1B G80					

SPARE PARTS LIST



선회 모터
SLEWING MOTOR

HIAB190TM-6 16 : 1
2010. 06.



SPARE PARTS LIST



선회 모터
SLEWING MOTOR

HIAB190TM-6 16 : 1
2010. 06.

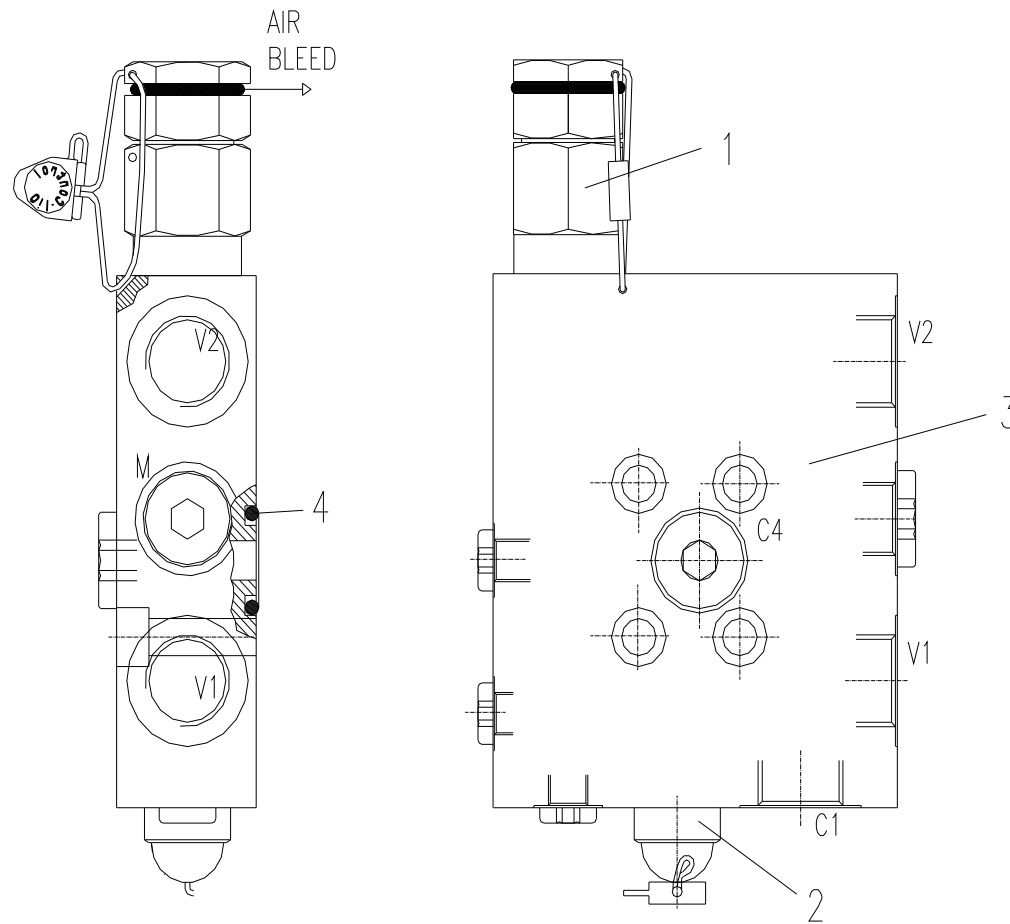
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-	H02-0200	선회 모터 SLEWING MOTOR	1	OMP100C	10	151-1128	기어 휠일 세트 GEAR WHEEL SET	1	W=13.0mm
1	633B0010	더스트 시일 링 DUST SEAL RING	1	35.0×28.5×4.0mm	11	151-1459	커버 END COVER	1	
2	633B0361	축 시일 SHAFT SEAL	1	39.0×28.6×4.9mm, HSN	12	684X0115	와셔 WASHER	7	15.2×8.2×1.0mm
3	151-1608	베어링 레이스 BEARING RACE	1	47.5×29.5×3.0mm	13	681X0180	스크루 SCREW	7	l=40mm
4	151-1458	축 니들 베어링 AXIAL NEEDLE BEARING	1	42.0×28.7×4.5mm	14	633X0074	플러그 PLUG	2	
5	682L9007	평행 키 PARALLEL KEY	1	A8×7×31mm					
6	-	하우징 + 아웃풋 축 HOUSING + OUTPUT SHAFT	1						
7	151-2645	카아단 축 CARDAN SHAFT	1	L=83.3mm					
8	633B1173	오링 O-RING	3	75.9×1.8mm, NBR	-	151-1286	시일 키트 KIT, SEAL	1	
9	151-1713	분배 플레이트 DISTRIBUTOR PLATE	1						

SPARE PARTS LIST



카운터 발란스 밸브
COUNTER BALANCE VALVE (D)

HIAB190TM-6 17:2
2014. 12.



SPARE PARTS LIST



카운터 밸런스 밸브
COUNTER BALANCE VALVE (D)

HIAB190TM-6 17:2
2014. 12.

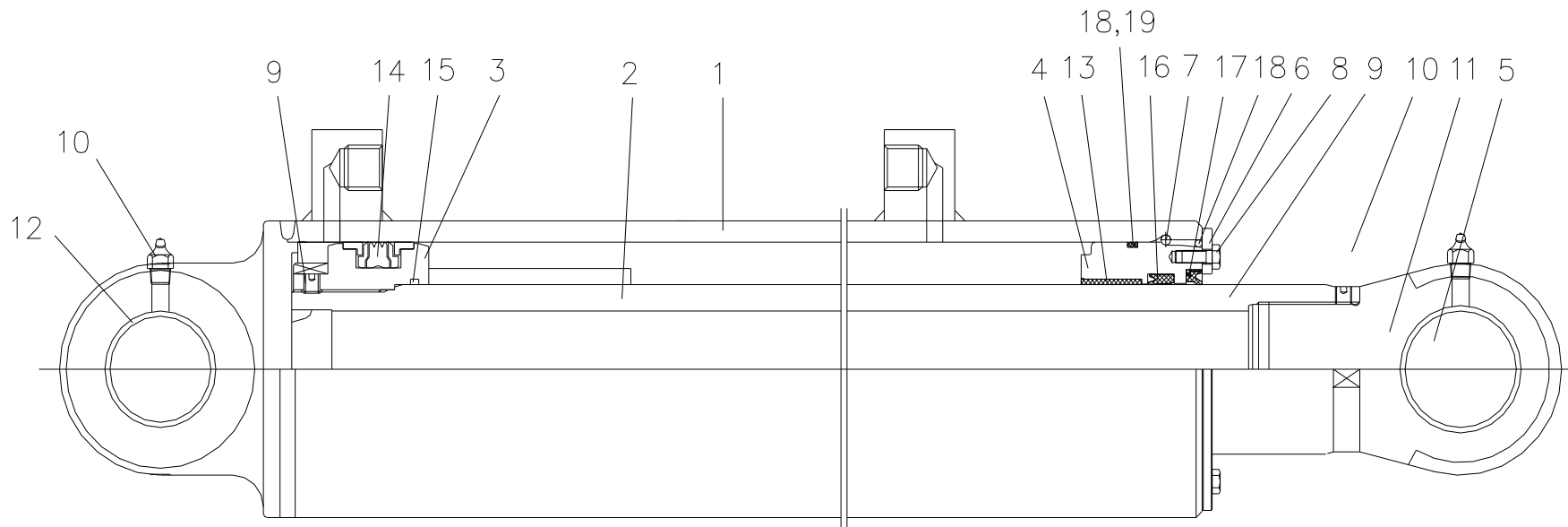
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-	985 2352	카운터 밸런스 밸브 COUNTER BALANCE VALVE (E)	1						
1	()	밸브 VALVE	1	VBSO-SE90 390BAR					
2	()	밸브 VALVE	1	VS5 310 BAR					
3	()	바디 BODY	1						
4	984 4899	오링 O-RING	1						

SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB190TM-6 18-1 : 1
2010. 06.



SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB190TM-6 18-1 : 1
2010. 06.

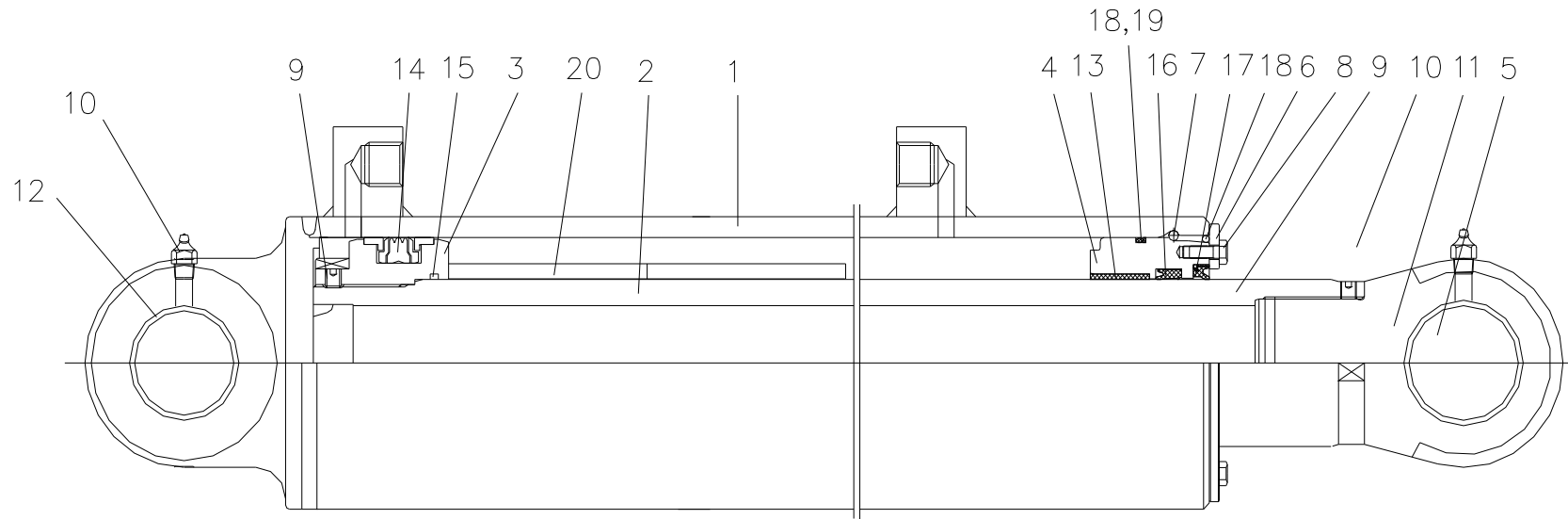
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-	H01-2169	데릭 실린더 DERRICK CYLINDER	1	HN51D0000	11	S01-1889	DX 부상 BUSHING, DX	2	PM 5530 DX-S
1	HN51D0010	튜브 결합체 TUBE ASS'Y	1		12	4325441	DX 부상 BUSHING, DX	2	PM 5540 DX
2	HN51D0020	로드 결합체 ROD ASS'Y	1		13	S01-4642	DU 부상 BUSHING, DU	2	MB 8030 DU
3	HN20IB040	피스톤 PISTON	1		14	S01-1890	피스톤 패킹 PISTON PACKING	1	PCB 0A1200-NCRO *
4	HN51D0040	로드 커버 ROD COVER	1		15	6012362	오링 O - RING	1	1B G80 *
5	HN43D0030	로드 헤드 ROD HEAD	1		16	S01-2735	로드 패킹 ROD PACKING	1	NI-300 *
6	HN51D0050	커버 COVER	1	Φ128×Φ90×5T	17	6112091	더스트 와이퍼 DUST WIPER	1	KWU 80 *
7	HN51D0060	멈춤 링 RETAINING RING	1	Φ110×5T	18	6012432	오링 O - RING	2	1B G115 *
8	H01-2674	육각 볼트 HEX. BOLT	4	M6×P1.0×15L	19	6035841	백업 링 RING, BACK-UP	1	T3 G115 *
9	2350556	멈춤 나사 SCREW, SET	2	M8×P1.25×8L					
10	4610702	그리스 니플 NIPPLE, GREASE	2	PT 1/8-A	-	S01-1892	시일 키트 KIT, SEAL	1	PARTS MARKED *

SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB190T-6 18-2 : 1
2010. 06.



SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB190T-6 18-2 : 1
2010. 06.

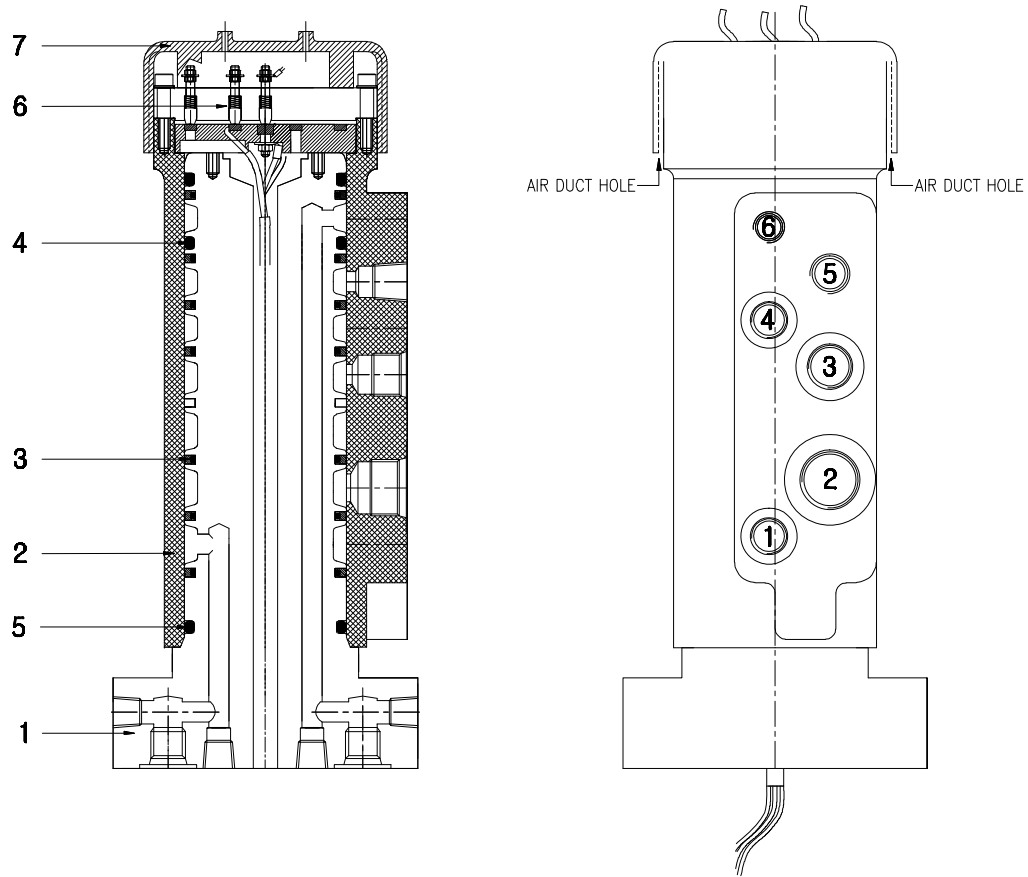
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-	H01-5001	데릭 실린더 DERRICK CYLINDER	2	HN88D0000	11	S01-1889	DX 부상 BUSHING, DX	2	PM 5530 DX
1	HN88D0010	튜브 결합체 TUBE ASS'Y	1		12	4325441	DX 부상 BUSHING, DX	2	PM 5540 DX
2	HN88D0020	로드 결합체 ROD ASS'Y	1		13	S01-4642	DU 부상 BUSHING, DU	1	MB 8030 DU
3	HN20IB040	피스톤 PISTON	1		14	S01-1890	피스톤 패킹 PISTON PACKING	1	PCB 0A1200-NCRO *
4	HN51D0040	로드 커버 ROD COVER	1		15	6012362	오링 O - RING	1	1B G80 *
5	HN43D0030	로드 헤드 ROD HEAD	1		16	S01-2735	로드 패킹 ROD PACKING	1	NI-300 *
6	HN51D0050	커버 COVER	1	Φ128×Φ90×5T	17	6112091	더스트 와이퍼 DUST WIPER	1	KWU 80 *
7	HN51D0060	멈춤 링 RETAINING RING	1	Φ110×5T	18	6012432	오링 O - RING	2	1B G115 *
8	H01-2674	육각 볼트 HEX. BOLT	4	M6×P1.0×15L	19	6035841	백업 링 RING, BACK-UP	1	T3 G115 *
9	2350556	멈춤 나사 SCREW, SET	1	M8×P1.25×8L	20	SSA8E0050	스페이서 SPACER	2	Φ80.5×Φ95×100L
10	4610702	그리스 니플 NIPPLE, GREASE	2	PT 1/8-A	-	S01-1892	시일 키트 KIT, SEAL	1	PARTS MARKED *

SPARE PARTS LIST



로타리 조인트 결합체
ROTARY JOINT ASS'Y

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SPARE PARTS LIST



로타리 조인트 결합체
ROTARY JOINT ASS'Y

HIAB190TM-6 19:1
2014. 12.

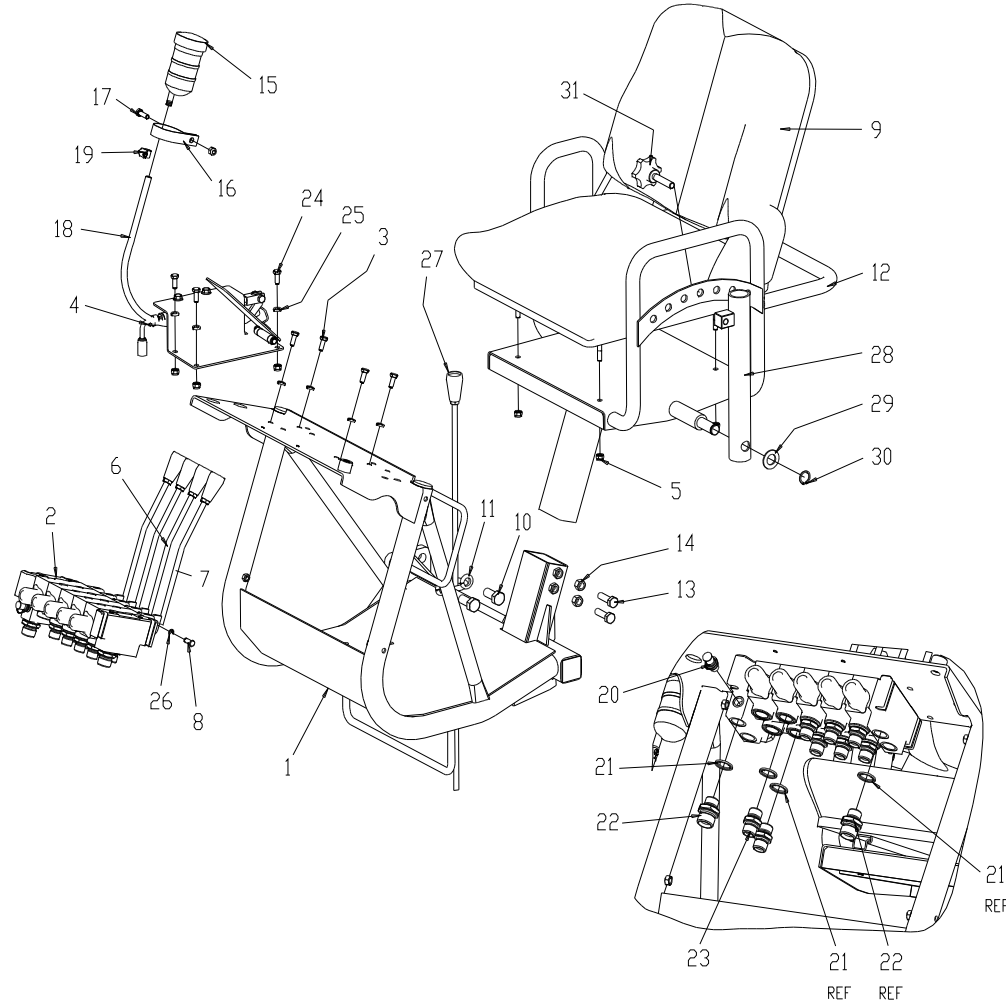
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-	A02-1740	로타리 조인트 결합체 ROTARY JOINT ASS'Y	1						
1	-	인너 조인트 INNER JOINT	1						
2	-	아웃 조인트 OUTER JOINT	1						
3	-	시일 SEAL	7						
4	-	오링 O-RING	2						
5	-	오링 O-RING	1						
6	-	슬립 링 결합체 SLIP RING ASS'Y	1						
7	-	고무 캡 RUBBER CAP	1						

SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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2015. 10.



SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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2015. 10.

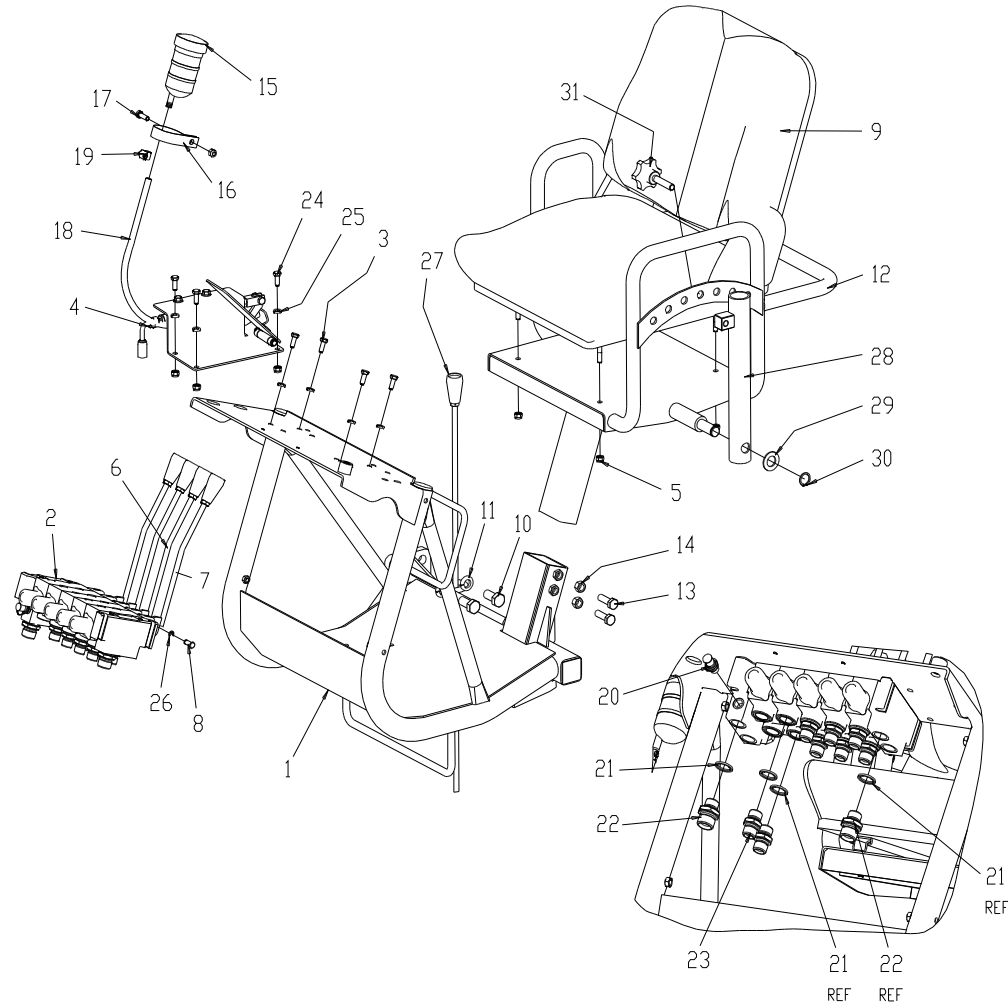
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-	A01-0538	운전석 결합체 TOP SEAT ASSY	1		10	2112137	육각 볼트 BOLT, HEX. HEAD	4	BA16×35
1	A02-4047	운전석 구조물 STRUCTURE, TOP SEAT	1		11	3612161	스프링 와셔 WASHER, SPRING	4	WS16
2	H02-0290	주 제어 밸브 VALVE, MAIN CONTROL	1	RS215	12	A02-2398	의자 브라켓 BRACKET, SEAT	1	
3	2110886	육각 볼트 BOLT, HEX. HEAD	4	BA8×20	13	2111547	육각 볼트 BOLT, HEX. HEAD	2	BA12×40
4	A02-1778	악셀 페달 마운팅 ACCEL PEDAL MTG.	1		14	3111126	육각 너트 NUT, HEX.	2	NA12
5	S01-0005	셀프 로킹 너트 NUT, SELF LOCKING	8	M8	15	TS-0029	오일 탱크 TANK, OIL	1	
6	123 1535	레버 결합체 1 LEVER ASS'Y 1	3		16	TS-0030	오일 탱크 밴드 BAND, OIL TANK	1	
7	123 1536	레버 결합체 2 LEVER ASS'Y 2	1		17	2110907	육각 볼트 BOLT, HEX. HEAD	1	BA8×25
8	S01-0049	핀 PIN	8	Φ8×19.5	18	TS-0031	비닐 튜브 TUBE, VINYL	1	
9	S01-2216	의자 SEAT	1		19	7811011	호스 클램프 CLAMP, HOSE	2	

SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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2015. 10.

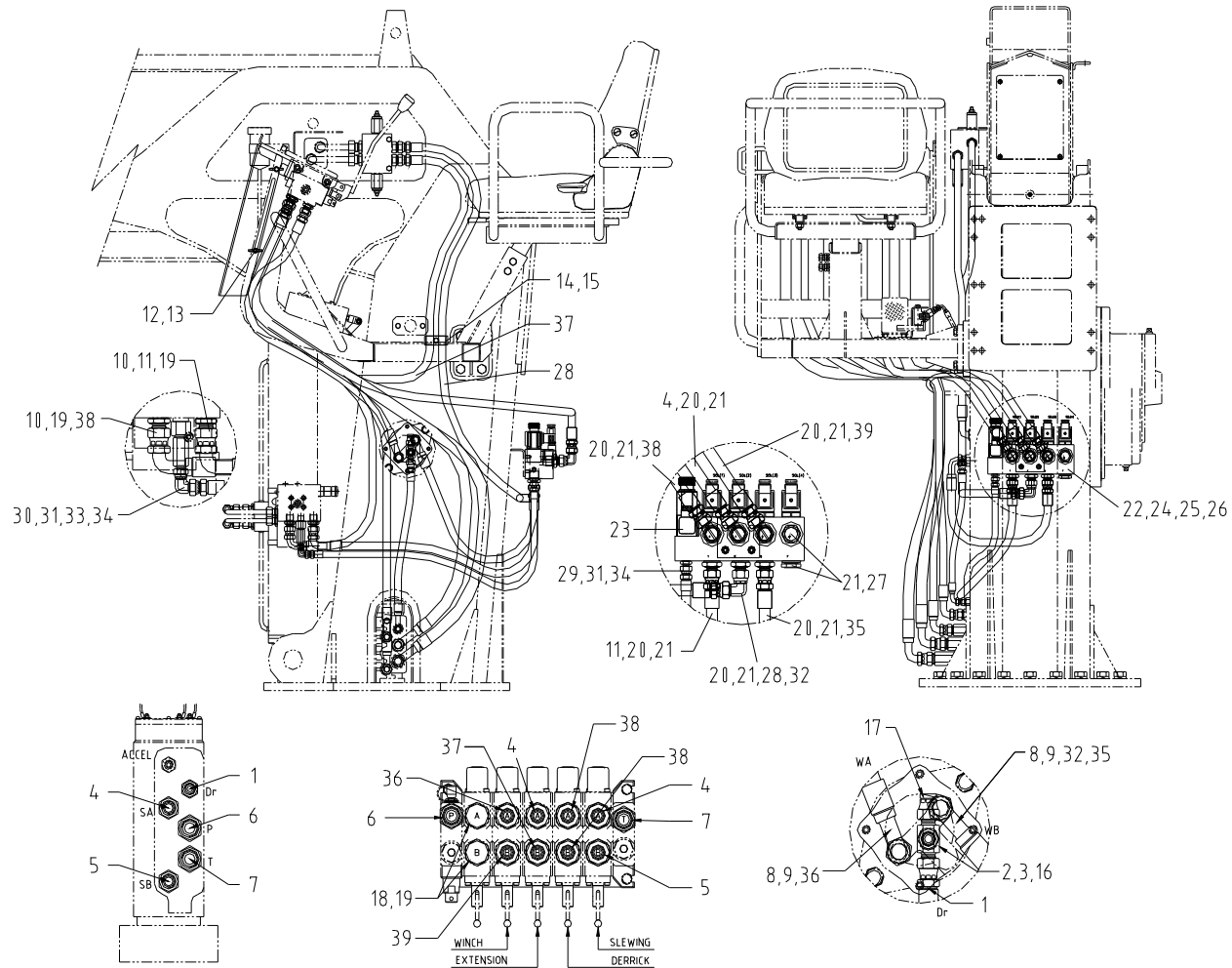
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20	998 9676	니플 MEASUREMENT NIPPLE 1/4"	1		30	4510211	멈춤 링 RING, RETAINING	1	RS20
21	6800081	와셔 GS-WASHER	10	NF1/2	31	S01-2891	손잡이 KNOB	1	M12×50
22	9270432	호스 유니언 UNION, CONICAL	2	3/4×1/2					
23	9270072	호스 유니언 UNION, CONICAL	8	1/2×1/2					
24	2110887	육각 볼트 BOLT, HEX. HEAD	3	BA8×20					
25	3612081	스프링 와셔 WASHER, SPRING	7	WS8					
26	4551091	멈춤 링 RING, RETAINING	8	RE6					
27	123 1537	레버 결합체 3 LEVER ASS'Y 3	1						
28	A05-2500	파이프 PIPE, UMBRELLA	1						
29	3511201	평 와셔 WASHER, PLAIN	1	WP20					

SPARE PARTS LIST



운전석 배관도
TOP SEAT HOSES

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SPARE PARTS LIST



운전석 배관도
TOP SEAT HOSES

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2014. 12.

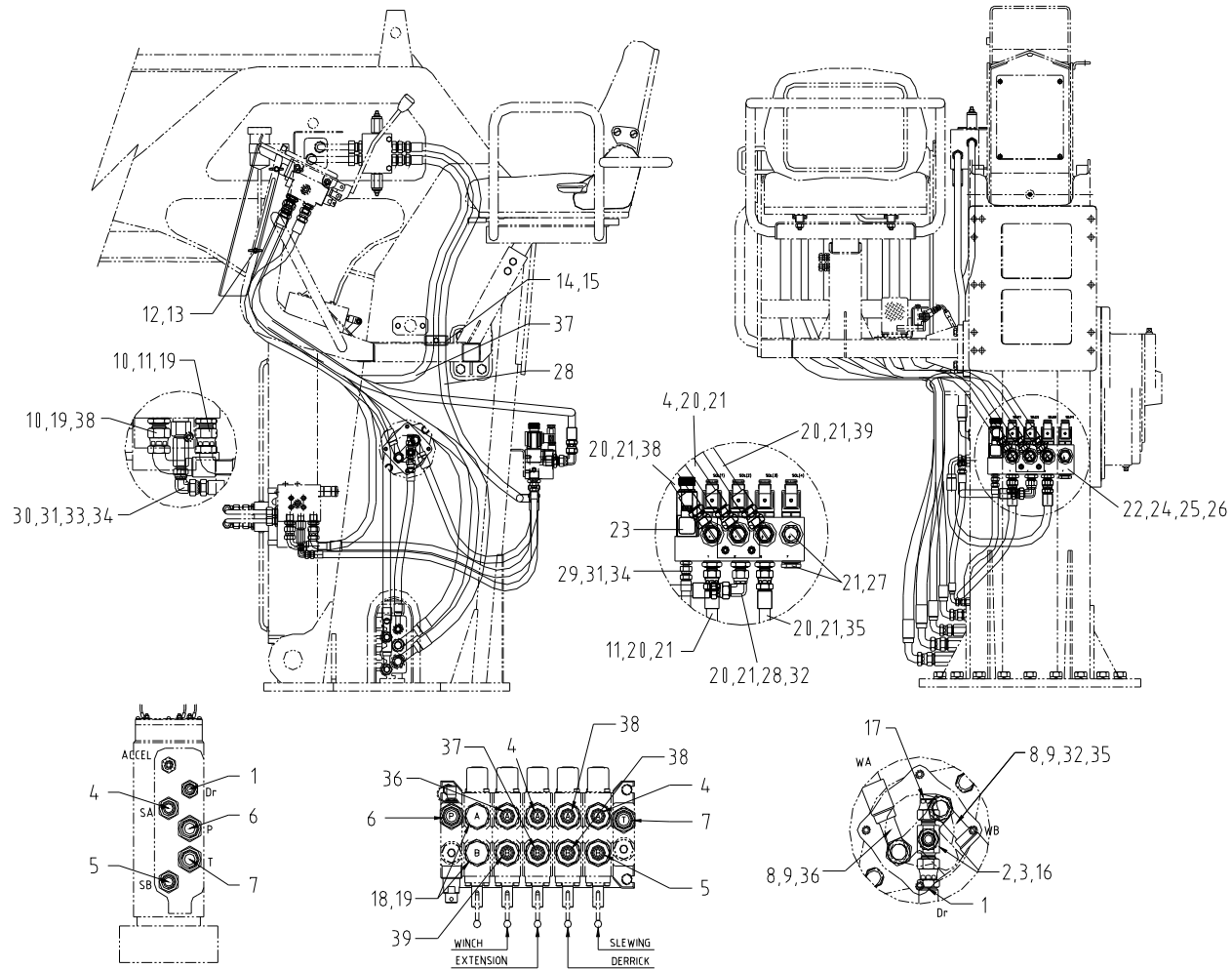
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-	A01-2514	운전석 배관도 TOP SEAT HOSES	1		10	9270072	호스 유니온 UNION, CONICAL	2	UC1/2×1/2
1	7170593	고압 호스 HOSE, H.P (HECF)	1	3/8×480-PF3/8	11	7172273	고압 호스 HOSE, H.P (HECF)	1	3/8×920-PF1/2
2	N01-3217	롱 니플 NIPPLE, LONG	1	PF3/8×PF3/8-210	12	M01-4521	커버 COVER	1	t1.6
3	6010172	O-링 O-RING	1	1B P14	13	2185966	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	4	BWF8×50
4	7172633	고압 호스 HOSE, H.P (HECF)	2	3/8×1820-PF1/2	14	TS-0038	호스 클램프 CLAMP, HOSE	2	
5	7172663	고압 호스 HOSE, H.P (HECF)	1	3/8×1900-PF1/2	15	2180936	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	1	BWF8×35
6	7178563	고압 호스 HOSE, H.P (HECF)	1	3/4×1650-PF3/4	16	H01-0901	호스 스위블 티 TEE, HOSE SWIVEL	1	3-PF3/8
7	7178673	고압 호스 HOSE, H.P (HECF)	1	3/4×1920-PF3/4	17	S01-1853	캡 CAP, PF	1	PF3/8
8	N01-3218	롱 니플 NIPPLE, LONG	2	PF1/2×PF1/2-175	18	S01-1854	캡 CAP, PF	2	PF1/2
9	6010212	O-링 O-RING	2	1B P18	19	6800081	실링 와셔 WASHER, SEALING	4	NF1/2

SPARE PARTS LIST



운전석 배관도
TOP SEAT HOSES

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운전석 배관도
TOP SEAT HOSES

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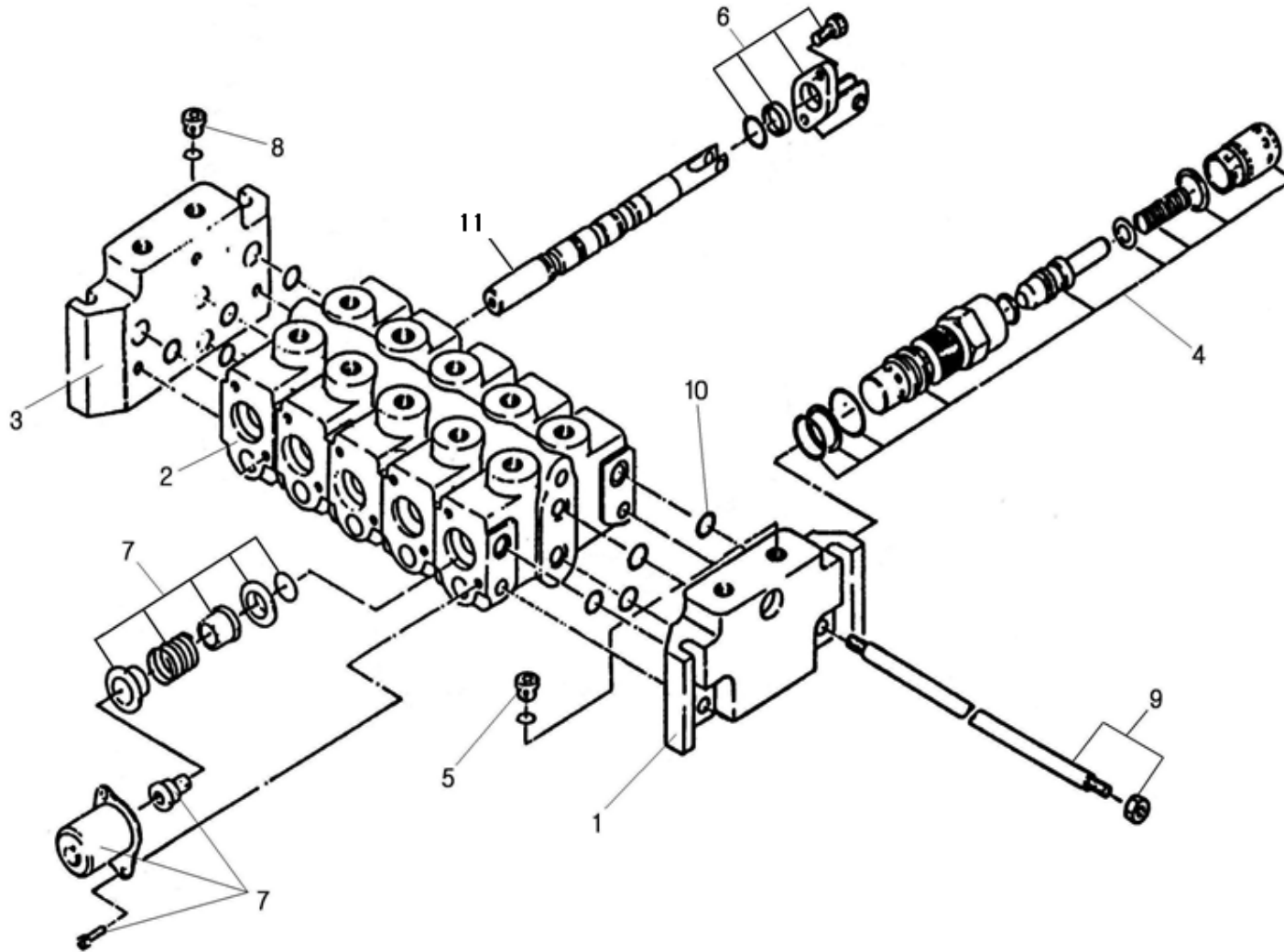
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20	9270432	호스 유니온 UNION, CONICAL	6	UC3/4×1/2	30	A05-3693	파라슈트 밸브 결합체 PARACHUTE VALVE ASS'Y	1	PF1/4
21	6800121	실링 와셔 WASHER, SEALING	8	NF216-12(PF3/4)	31	9270052	호스 유니온 UNION, CONICAL	2	UC1/4×1/4
22	H02-1072	솔레노이드 밸브 VALVE, SOLENOID	1	4-FUNCTION, DC24V	32	S01-1579	스위블 엘보 ELBOW, SWIVEL	2	2-PF1/2
23	H02-1073	압력 스위치 결합체 PRESSURE, SWITCH ASS'Y	1	PS-350K-C-10	33	6800061	실링 와셔 WASHER, SEALING	1	NF216-6 (PF3/8)
24	S01-0005	셀프 로킹 너트 NUT, SELF LOCKING	2	M8	34	7167793	고압 호스 HOSE, H.P (HECF)	1	1/4×980-PF1/4
25	3612081	스프링 와셔 WASHER, SPRING	2	WS8	35	H01-6144	고압 호스 HOSE, H.P (45°)	1	1/2×620-PF1/2
26	2616057	육각 구멍 볼이 볼트 BOLT, HEX. SOCKET HEAD	2	BB8×95 (반)	36	7173903	고압 호스 HOSE, H.P (HECF)	1	1/2×1250-PF1/2
27	S01-2382	육각 플러그 PLUG, HEX. PF	2	PF3/4	37	7118663	고압 호스 HOSE, H.P (HUCF)	1	3/8×1950-PF1/2
28	7172543	고압 호스 HOSE, H.P (HECF)	1	3/8×1600-PF1/2	38	7172623	고압 호스 HOSE, H.P (HECF)	2	3/8×1800-PF1/2
29	6800041	실링 와셔 WASHER, SEALING	1	NF216-4(PF1/4)	39	7174123	고압 호스 HOSE, H.P (HECF)	1	1/2×1800-PF1/2

SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

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주 제어 밸브
MAIN CONTROL VALVE

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2015. 10.

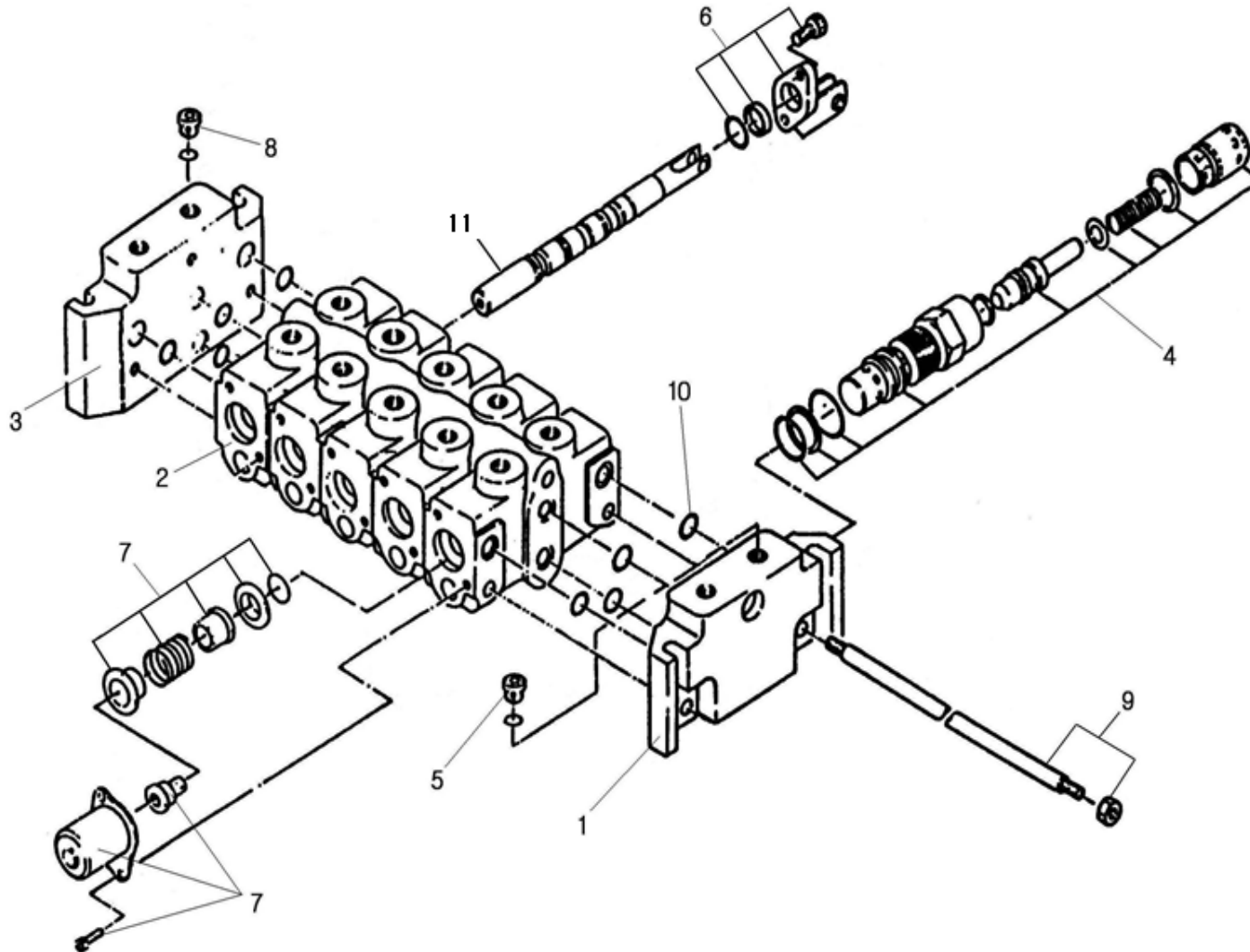
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-	H02-0290	주 제어 밸브 MAIN CONTROL VALVE			-		스페이서 SPACER	1	
1	2330-26982	PT 블록 PT BLOCK	1		-		포핏 POPPET	1	
2	2330-263162	워크 블록 WORK BLOCK	5	RS210	-		백업 링 RING, BACK-UP	1	※
3	2330-260984	엔드 블록 END BLOCK	1		-		O-링 O-RING	1	12.3×2.4 ※
4	2330-210203	메인 릴리프 밸브 VALVE, MAIN RELIEF	1		5	2330-450059	포트 플러그 결합체 PORT PLUG ASS'Y	1	1/2" BSP
-		조절 스크류 SCREW, ADJUSTING	1		-		포트 플러그 PORT PLUG	1	
-		O-링 O-RING	1	13.3×2.4	-		O-링 O-RING	1	17.3×2.4
-		부싱 BUSHING	1		6	2330-266992	브라켓 BRACKET 3-POSITIONS ASSY	5	9 : 1
-		O-링 O-RING	1	17.3×2.4 ※	-		브라켓 BRACKET	1	
-		스프링 SPRING	1		-		스크레이퍼 링 SCRAPER RING	1	★

SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

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SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

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2015. 10.

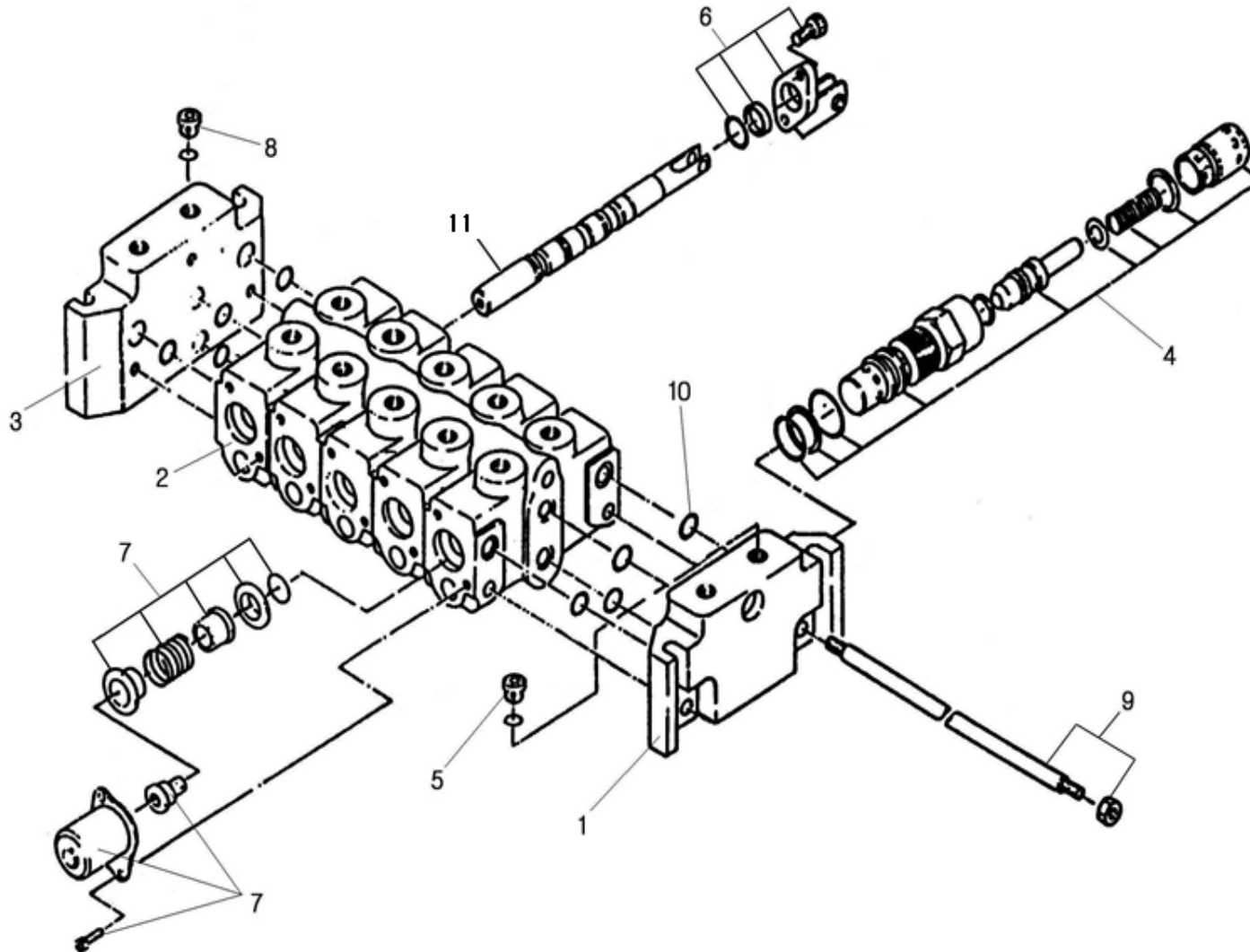
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-	2330-260944	스풀 시일 결합체 SPOOL SEAL ASS'Y	1	★	-		스프링 SPRING	1	
-		스크류 SCREW	2		8	2330-450073	캐리 오버 플러그 결합체 CARRY OVER PLUG ASS'Y	1	
7		스풀 컨트롤 결합체 SPOOL CONTROL ASS'Y	5		-		플러그 PLUG	1	
-		스풀 시일 SEAL, SPOOL	1	★	-		O-링 O-RING	1	13.1×2.62
-		와셔 WASHER	1		9	2330-263395	타이 로드 키트 TIE ROD KIT	1	5 SECTION
-		스크류 SCREW	2		-		타이 로드 TIE ROD	3	
-		캡 CAP	1		-		너트 NUT	3	
-		스프링 가이드 GUIDE, SPRING	1		10	2330-260584	내부 섹션 시일 키트 INTER SECTION SEAL KIT	6	
-		스팩싱 스크류 SCREW, SPACING	1		-		O-링 O-RING	3	15.3×2.4
-		스프링 가이드 GUIDE, SPRING	1		-		O-링 O-RING	1	12.3×2.4

SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

HIAB190TM-6 22 : 1
2015. 10.



SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

HIAB190TM-6 22 : 1
2015. 10.

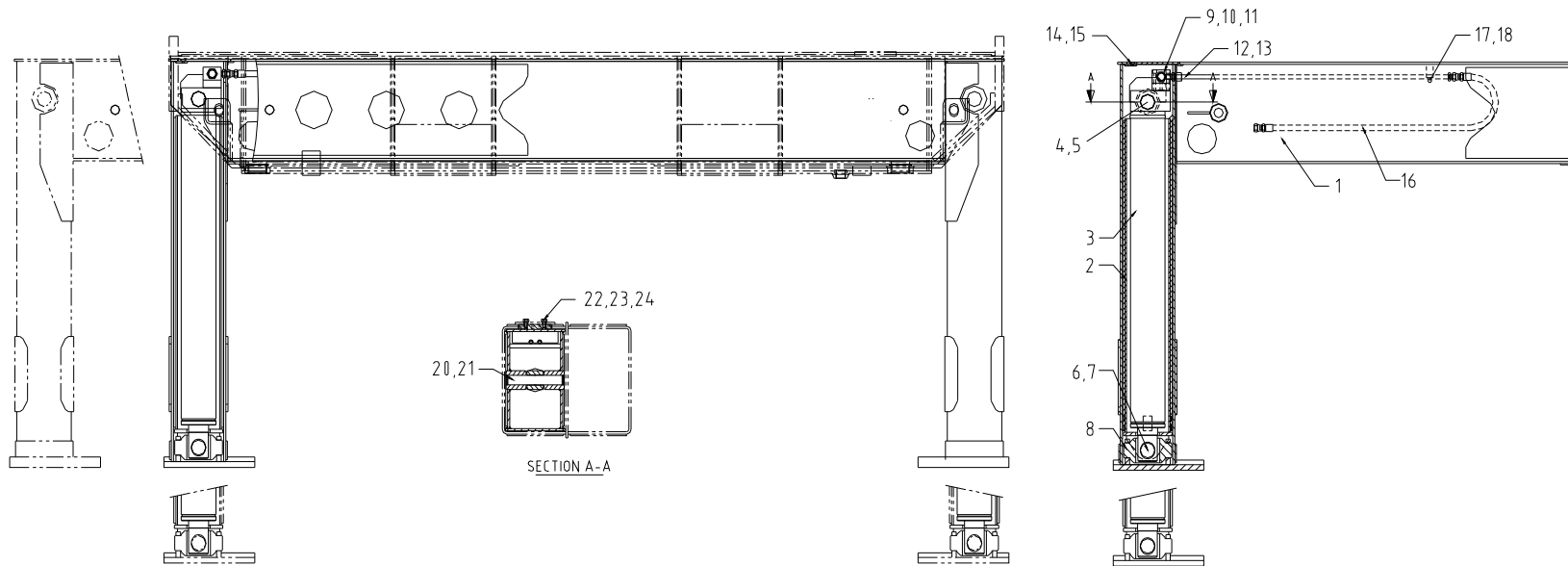
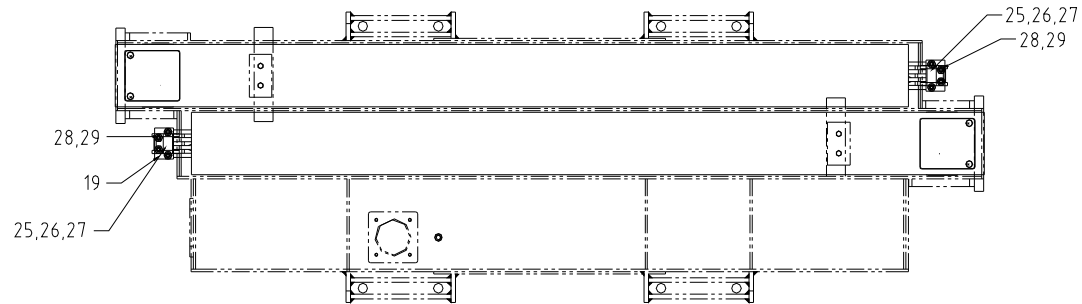
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11	2100-262981	스풀 SPOOL	5						
-	2330-260588	메인 시일 키트 MAIN SEAL KIT		PART MARKED ※					
-	2330-260552	스풀 시일 키트 SPOOL SEAL KIT		PART MARKED ★					

SPARE PARTS LIST



전방 아우트리거 결합체
FRONT OUTRIGGER ASS'Y

HIAB190TM-6 23 : 1
2014. 12.



SPARE PARTS LIST



전방 아우트리거 결합체
FRONT OUTRIGGER ASS'Y

HIAB190TM-6 23 : 1
2014. 12.

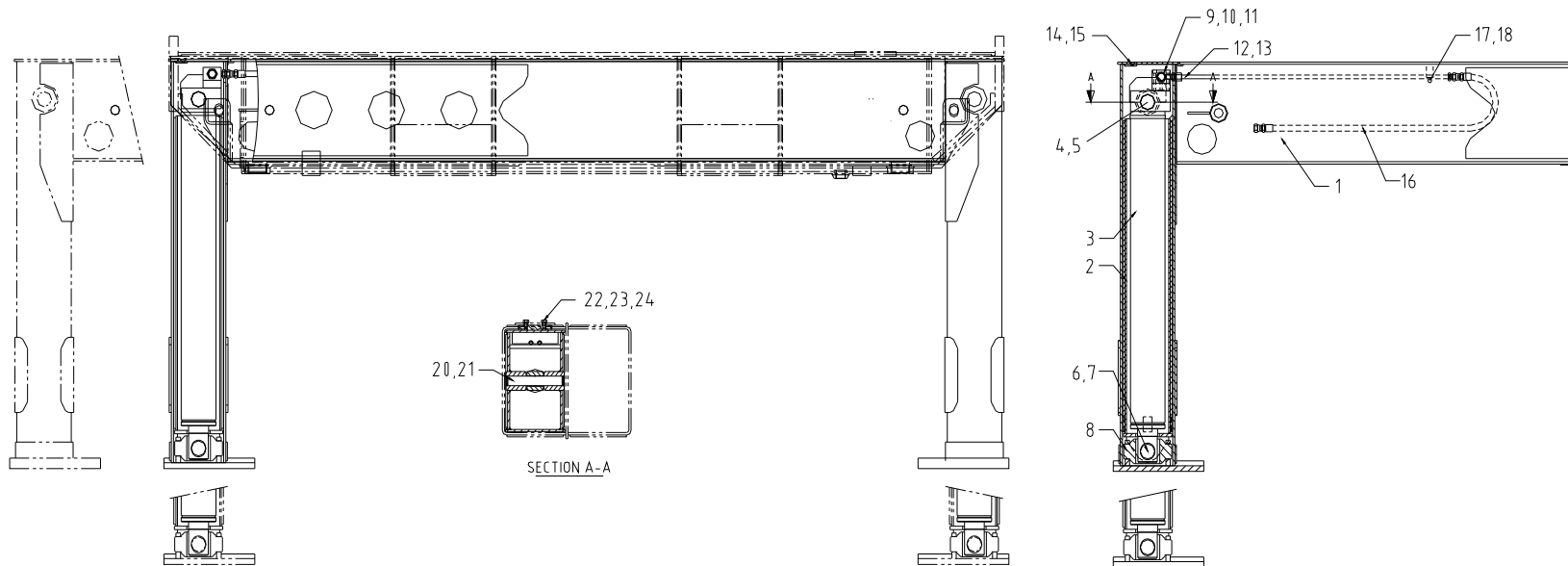
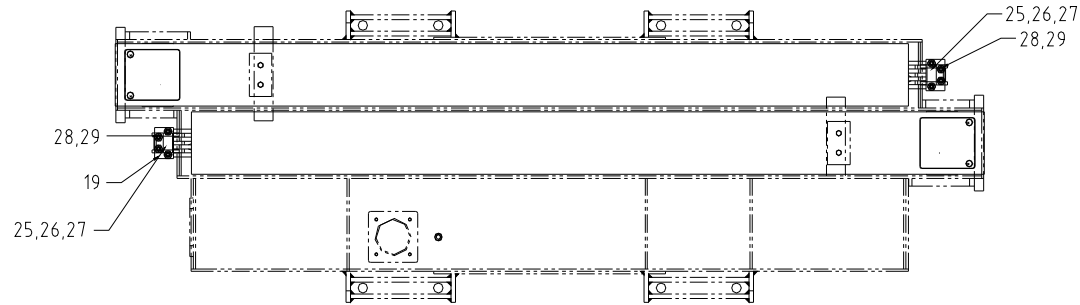
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-	OR1-4001	아우트리거 장치 OUTRIGGER SYSTEM	1		10	6010142	O-링 O-RING	4	1B P12
1	OR1-4003	아우트리거 빔 BEAM, OUTRIGGER	2		11	2615586	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	8	BB6×60
2	A05-0970	내부 튜브 TUBE, INNER	2		12	9002512	파이프 니플 NIPPLE, PF PIPE	4	NTP10-PT1/4
3	H01-2066	아우트리거 실린더 OUTRIGGER CYLINDER	2		13	H01-1355	유압 파이프 PIPE, HYDRAULIC	4	Φ10×t1.5
4	OR1-4010	핀 PIN	2		14	A05-0755	커버 COVER	2	
5	4525351	멈춤 링 RING, RETAINING	4	RB40	15	2241606	작은 나사 SCREW, MACHINE	4	BC6×8
6	S01-0754	축 SHAFT	2		16	7113892	고압 호스 HOSE, H.P (HUCF)	4	1/4×1220-PF1/4
7	4510351	멈춤 링 RING, RETAINING	2	RS40	17	M01-0745	핀 PIN	2	
8	OR1-4011	슈 SHOE ASSY	2		18	4551121	멈춤 링 RING, RETAINING	4	RE9
9	H02-1058	파일럿 체크 밸브 VALVE, PILOT CHECK	2		19	H01-1431	사이드 쉬프트 실린더 SIDE SHIFT CYLINDER	2	

SPARE PARTS LIST



전방 아우트리거 결합체
FRONT OUTRIGGER ASS'Y

HIAB190TM-6 23 : 1
2014. 12.



SPARE PARTS LIST



전방 아우트리거 결합체
FRONT OUTRIGGER ASS'Y

HIAB190TM-6 23 : 1
2014. 12.

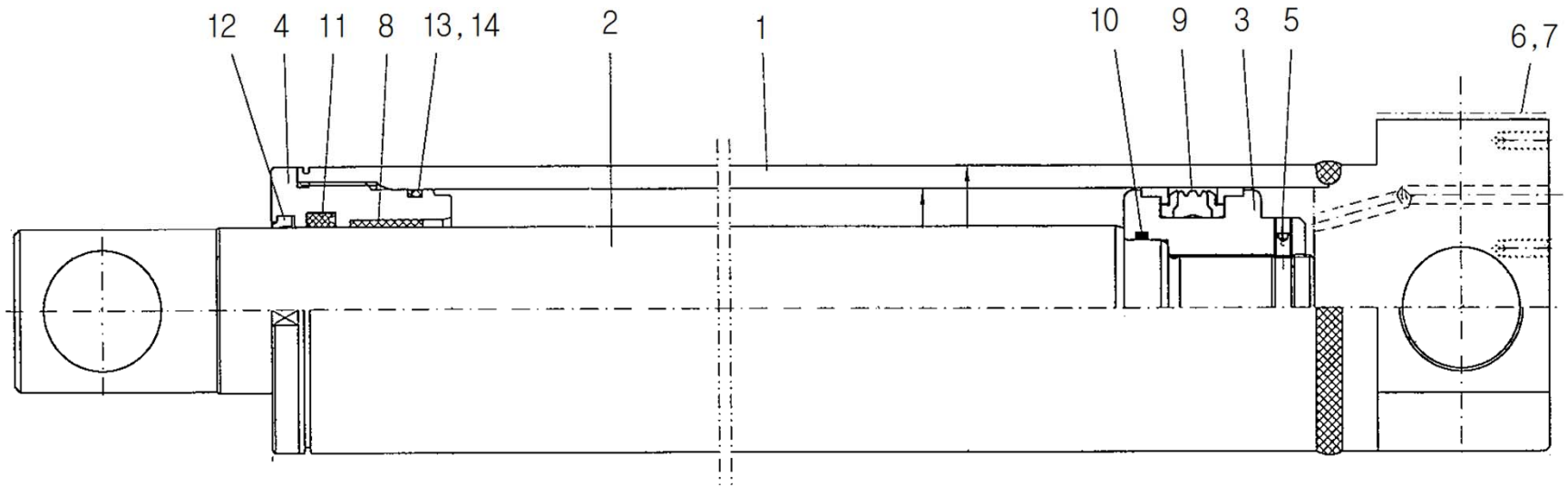
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20	N01-0932	핀 PIN	2						
21	4525251	멈춤 링 RING, RETAINING	4	RB25					
22	OR1-0009	슬라이드 패드 PAD, SLIDE	2						
23	3612081	스프링 와셔 WASHER, SPRING	4	WS8					
24	2110866	육각 볼트 BOLT, HEX. HEAD	4	BA8×16					
25	OR1-3004	축 SHAFT	2						
26	3511241	평 와셔 WASHER, SEALING	2	WP24					
27	1311321	분할 핀 PIN, SPLIT	2	PW6.3×40					
28	9211062	호스 니플 NIPPLE, PT HOSE	8	NTC6					
29	S01-2291	엘보 스위블 SWIVEL, ELBOW	8	PF1/4					

SPARE PARTS LIST



전방 아우트리거 실린더
FRONT OUTRIGGER CYLINDER

HIAB190TM-6 24 : 1
2014. 12.



SPARE PARTS LIST



전방 아우트리거 실린더
FRONT OUTRIGGER CYLINDER

HIAB190TM-6 24 : 1
2014. 12.

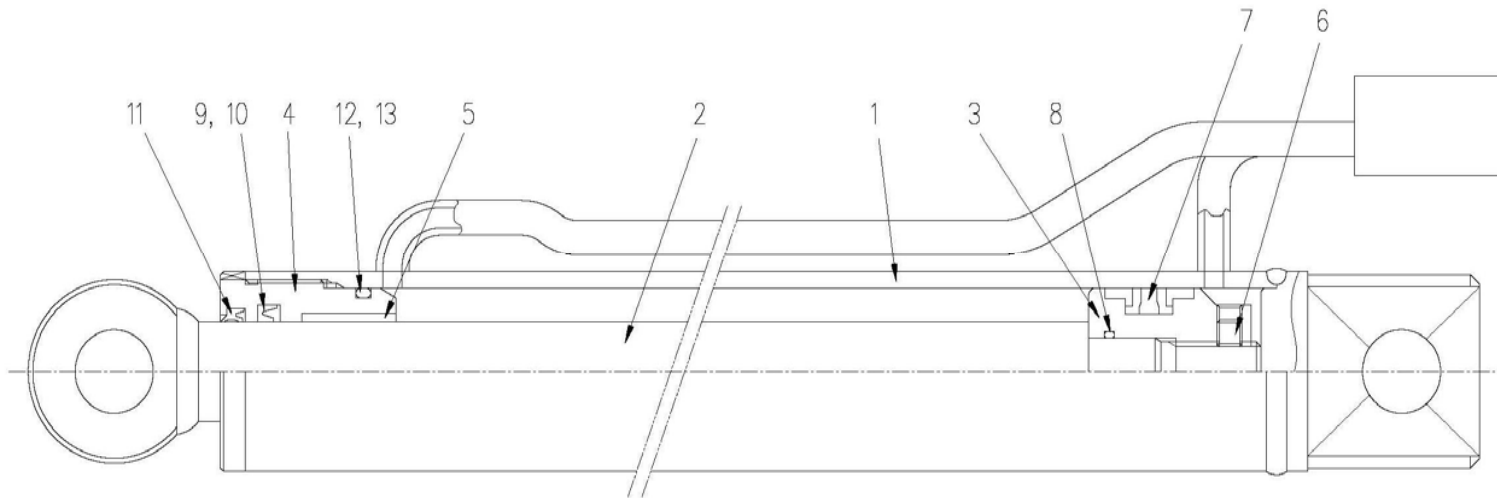
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-	H01-2066 HN25J0A00	아우트리거 실린더 OUTRIGGER CYLINDER	1		10		오링 O-RING	1	1B G45
1	HN25J0010	튜브 결합체 TUBE ASS'Y	1		11		U-패킹 U-PACKING	1	NI-300 (Φ55×Φ65×10W)
2	HN24FJ020-01	로드 ROD	1		12		더스트 와이퍼 DUST WIPER	1	KDD 55
3	SH10J8030	피스톤 PISTON	1		13		O-링 O-RING	1	1B G75
4	HN04J0040	로드 커버 COVER, ROD	1		14		백업 링 RING, BACK-UP	1	(T-3) G75
5		멈춤 나사 SCREW, SET	1	M8×P1.25×6L					
6	HN25J0A50	더스트 커버 DUST COVER	1	50×70×3.2t					
7		육각 볼트 HEX. BOLT	2	M6×P1.0×10L	-	S01-2125	시일 키트 KIT, SEAL	1	
8		부쉬 DU BUSH	1	MB 5525 DU					
9		컴팩트 시일 COMPACT SEAL	1	PCB 0A0800-NCRO					

SPARE PARTS LIST



전방 사이드 쉬프트 실린더
FRONT SIDE SHIFT CYLINDER

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2014. 12.



SPARE PARTS LIST



전방 사이드 쉬프트 실린더
FRONT SIDE SHIFT CYLINDER

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2014. 12.

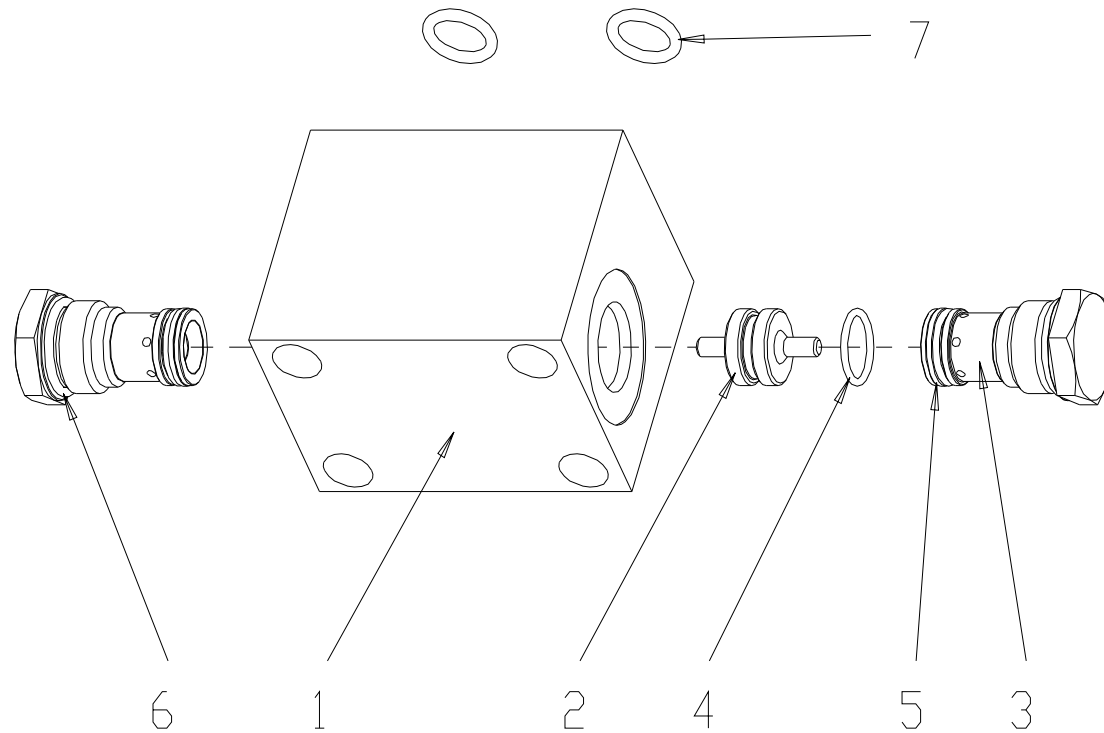
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-	H01-1431	사이드 쉬프트 실린더 SIDE SHIFT CYLINDER	1	HN21SS000-01	10	6036751	백업 링 RING, BACK-UP	1	BRT2 30
1	HN21SS010-01	튜브 결합체 TUBE ASS'Y	1		11	6115571	더스트 시일 SEAL, DUST	1	DSI 30
2	HN03SS020	로드 결합체 ROD ASS'Y	1		12	6012292	O-링 O-RING	1	1B G45
3	SS56C0030	피스톤 PISTON	1		13	6035701	백업 링 RING, BACK-UP	1	T3 G45
4	SH17FE040	로드 커버 COVER, ROD	1						
5	4320921	DU 부상 BUSHING, DU	1	MB3025DU					
6	2350446	멈춤 나사 SCREW, SET	1	BV6×6					
7	6211211	컴팩트 시일 SEAL, COMPACT	1	DAS 50	-	S01-0921	시일 키트 KIT, SEAL	1	
8	6010212	O-링 O-RING	1	1B P18					
9	6513591	U-패킹 U-PACKING	1	ISI 30					

SPARE PARTS LIST



파일로트 체크 밸브 (D)
PILOT CHECK VALVE (D)

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2014. 12.



SPARE PARTS LIST



파일로트 체크 밸브 (D)
PILOT CHECK VALVE (D)

HIAB190TM-6 26 : 1
2014. 12.

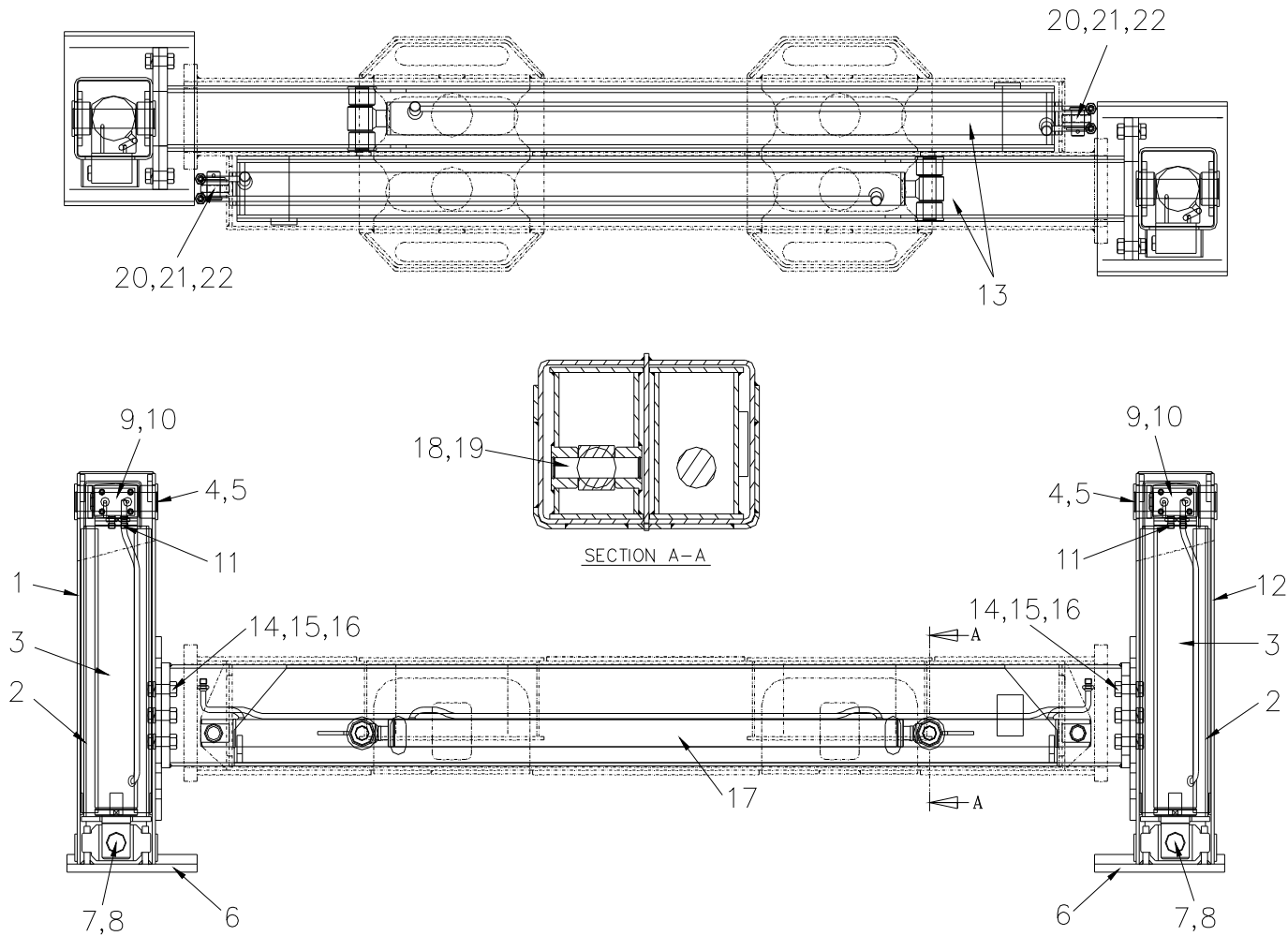
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-	H02-1058	파일로트 체크 밸브 VALVE, PILOT CHECK (D)	1						
1	D25-0005-1	블록 BODY, VALVE	1	50×55×73					
2	D25-0005-2	스풀 SPOOL	1						
3	D25-0005-3	체크 밸브 VALVE, CHECK	2						
4	D25-0005-4	오링 O-RING	3	Φ13×t1.5					
5	D25-0005-5	백업 링 RING, BACK-UP	2	Φ13×t1.2					
6	D25-0005-6	오링 O-RING	2	Φ16.5×t2.0					
7	6010142	오링 O-RING	2	P12					

SPARE PARTS LIST



후방 아웃리거 결합체
REAR OUTRIGGER ASS'Y

HIAB190TM-6 27 : 0
2004. 11.



SPARE PARTS LIST



후방 아우트리거 결합체
REAR OUTRIGGER ASS'Y

HIAB190TM-6 27:0
2004. 11.

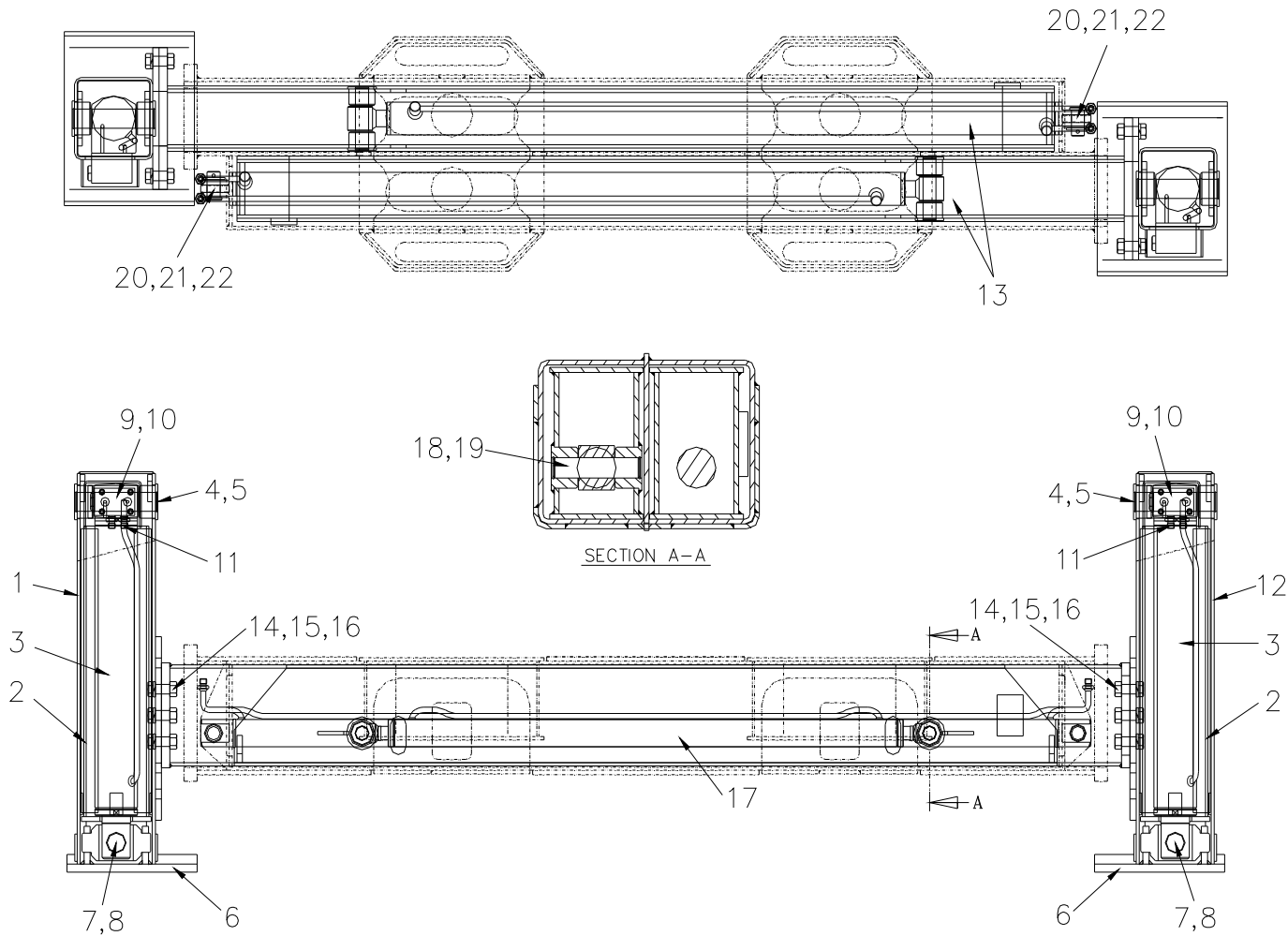
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-	OR2-3001	후방 아우트리거 결합체 REAR OUTRIGGER ASS'Y	1		10	2615977	구멍 볼이 육각 볼트 BOLT, HEX. SOCKET HEAD	8	BB6×55
1	OR2-3003	외부 튜브 TUBE, OUTER	1	(R.H)	11	9211062	호스 니플 NIPPLE, PT HOSE	4	NTC6
2	A05-0745	내부 튜브 TUBE, INNER	2		12	OR2-3007	외부 튜브 TUBE, OUTER	1	(L,H)
3	H01-1464	후방 아우트리거 실린더 결합체 REAR OUTRIGGER CYL'D ASS'Y	2		13	OR2-3008	빔 결합체 BEAM ASS'Y	2	
4	N01-0924	축 SHAFT	2	Φ35	14	2112167	육각 볼트 BOLT, HEX. HEAD	12	BA16×50
5	4525311	멈춤 링 RING, RETAINING	2	RB35	15	3612161	스프링 와셔 WASHER, SPRING	12	WS16
6	OR2-1010	슈 결합체 SHOE ASSY	2		16	3111167	육각 너트 NUT, HEX.	12	NA16
7	OR-0034	축 SHAFT	2	Φ35	17	H01-1465	후방 사이드 쉬프트 실린더 결합체 REAR SIDE SHIFT CYL'D ASS'Y	2	
8	4510311	멈춤 링 RING, RETAINING	2	RS34	18	S01-0874	핀 PIN	2	Φ25
9	H02-0112	파일럿 체크 밸브 VALVE, PILOT CHECK (S)	2		19	4525251	멈춤 링 RING, RETAINING	4	RB25

SPARE PARTS LIST



후방 아웃리거 결합체
REAR OUTRIGGER ASS'Y

HIAB190TM-6 27 : 0
2004. 11.



SPARE PARTS LIST



후방 아우트리거 결합체
REAR OUTRIGGER ASS'Y

HIAB190TM-6 27:0
2004. 11.

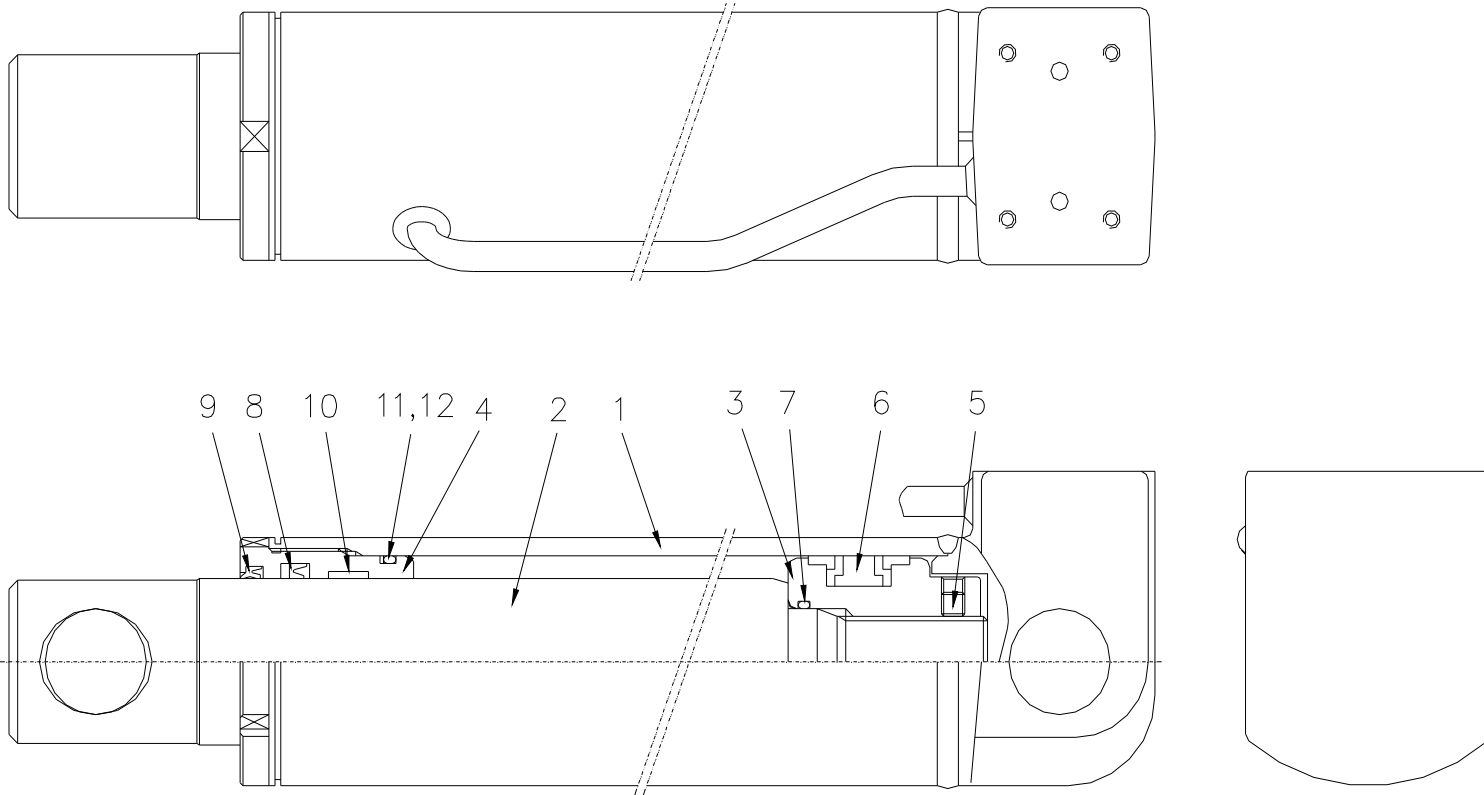
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20	S01-0875	축 SHAFT	2	Φ25					
21	3511241	평 와셔 WASHER, PLAIN	2	WP24					
22	1311321	분할 핀 PIN, SPLIT	2	PW5.9×40					

SPARE PARTS LIST



후방 아우트리거 실린더
REAR OUTRIGGER CYLINDER

HIAB190TM-6 28 : 0
2004. 11.



SPARE PARTS LIST



후방 아우트리거 실린더
REAR OUTRIGGER CYLINDER

HIAB190TM-6 28 : 0
2004. 11.

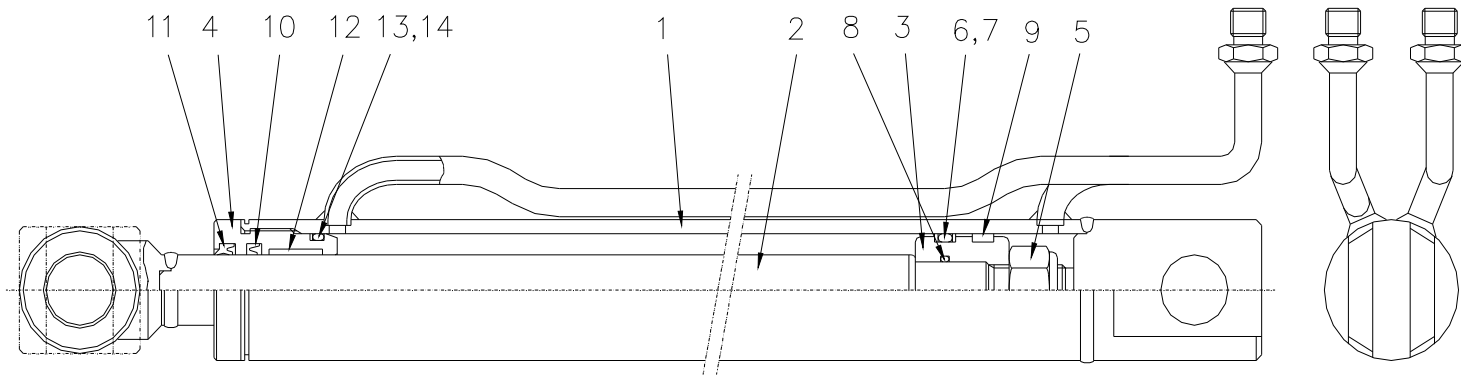
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-	H01-1464	후방 아우트리거 실린더 REAR OUTRIGGER CYLINDER	1		10	S01-0872	웨어 링 RING, WEAR	1	Φ55×Φ60×15
1	H01-1464-01	튜브 결합체 TUBE ASS'Y	1		11	6012332	O-링 O-RING	1	1B G65
2	H01-1464-05	로드 ROD	1		12	6035741	백업 링 RING, BACK-UP	1	T3 G65
3	OR-1464-06	피스톤 PISTON	1						
4	H01-1463-07	로드 커버 COVER, ROD	1						
5	2350496	멈춤 나사 SCREW, SET	1	BV6×16	-	S01-1661	시일 키트 KIT, SEAL	1	
6	6211331	컴팩트 시일 SEAL, COMPACT	1	DAS 70					
7	6012282	O-링 O-RING	1	1B G40					
8	6513691	유 패킹 U-PACKING	1	ISI 55					
9	6115651	더스트 시일 SEAL, DUST	1	KDD 55					

SPARE PARTS LIST



후방 사이드 쉬프트 실린더
REAR SIDE SHIFT CYLINDER

HIAB190TM-6 29:0
2004. 11.



SPARE PARTS LIST



후방 사이드 쉬프트 실린더
REAR SIDE SHIFT CYLINDER

HIAB190TM-6 29:0
2004. 11.

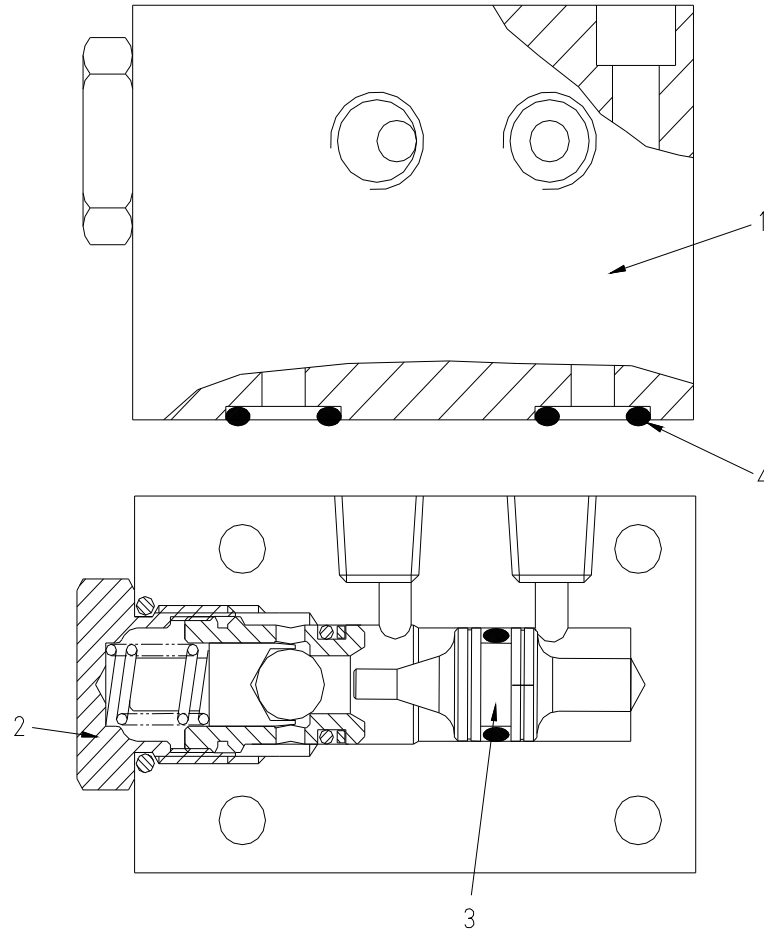
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-	H01-1465	후방 사이드 쉬프트 실린더 REAR SIDE SHIFT CYLINDER	1		10	H01-1465-16	유 패킹 U-PACKING	1	BSX-25
1	H01-1465-01	튜브 결합체 TUBE ASS'Y	1		11	6115551	더스트 시일 SEAL, DUST	1	KDD 25
2	H01-1465-08	로드 결합체 ROD ASS'Y	1		12	S01-0910	웨어 링 RING, WEAR	1	Φ25×Φ29×20W
3	H01-1465-13	피스톤 PISTON	1		13	6010402	O-링 O-RING	1	1B G35
4	H01-1465-14	로드 커버 COVER, ROD	1		14	6035681	백업 링 RING, BACK UP	1	T3 G35
5	H01-1465-15	록크 너트 NUT, LOCK	1	M18×P2.5					
6	6010392	O-링 O - RING	1	1B P34					
7	6032361	백업 링 RING, BACK UP	2	T2 P34	-	S01-1662	시일 키트 KIT, SEAL	1	
8	6010222	O-링 O-RING	1	1B P20					
9	S01-0648	웨어 링 RING, WEAR	1	Φ40×Φ35×9.5W					

SPARE PARTS LIST



파일럿 체크 밸브
PILOT CHECK VALVE (S)

HIAB190TM-6 30 : 0
2004. 11.



SPARE PARTS LIST



파일럿 체크 밸브
PILOT CHECK VALVE (S)

HIAB190TM-6 30 : 0
2004. 11.

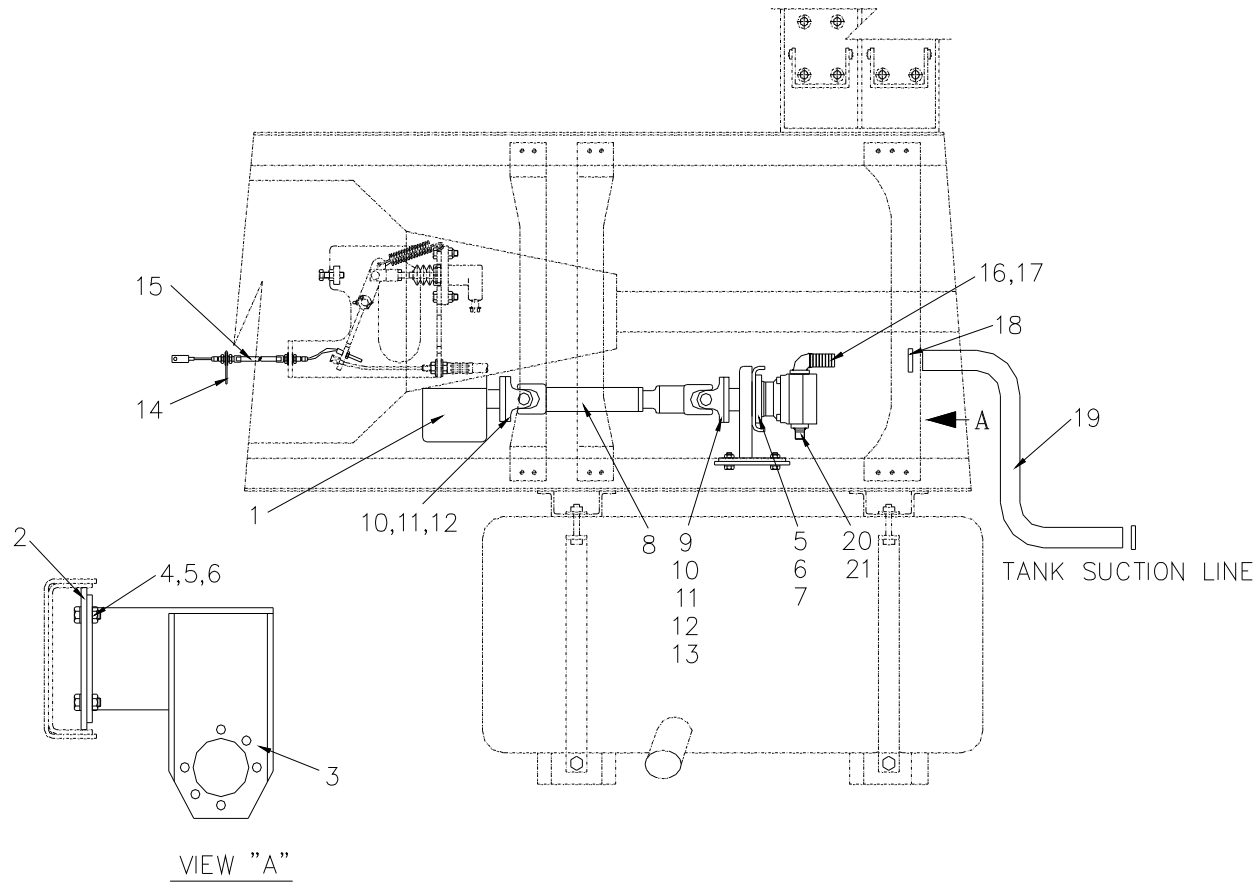
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-	H02-0112	파일럿 체크 밸브 VALVE, PILOT CHECK	1						
1	H02-0112-1	바디 BODY	1						
2	H02-0112-2	체크 밸브 CHECK VALVE	1						
3	H02-0112-3	스풀 SPOOL	1						
4	6010142	오링 O-RING	2	1B P12					

SPARE PARTS LIST



피티오 & 펌프 마운팅
P.T.O & PUMP MOUNTING

HIAB190TM-6 31:0
2004. 11.



SPARE PARTS LIST



피티오 & 펌프 마운팅
P.T.O & PUMP MOUNTING

HIAB190TM-6 31:0
2004. 11.

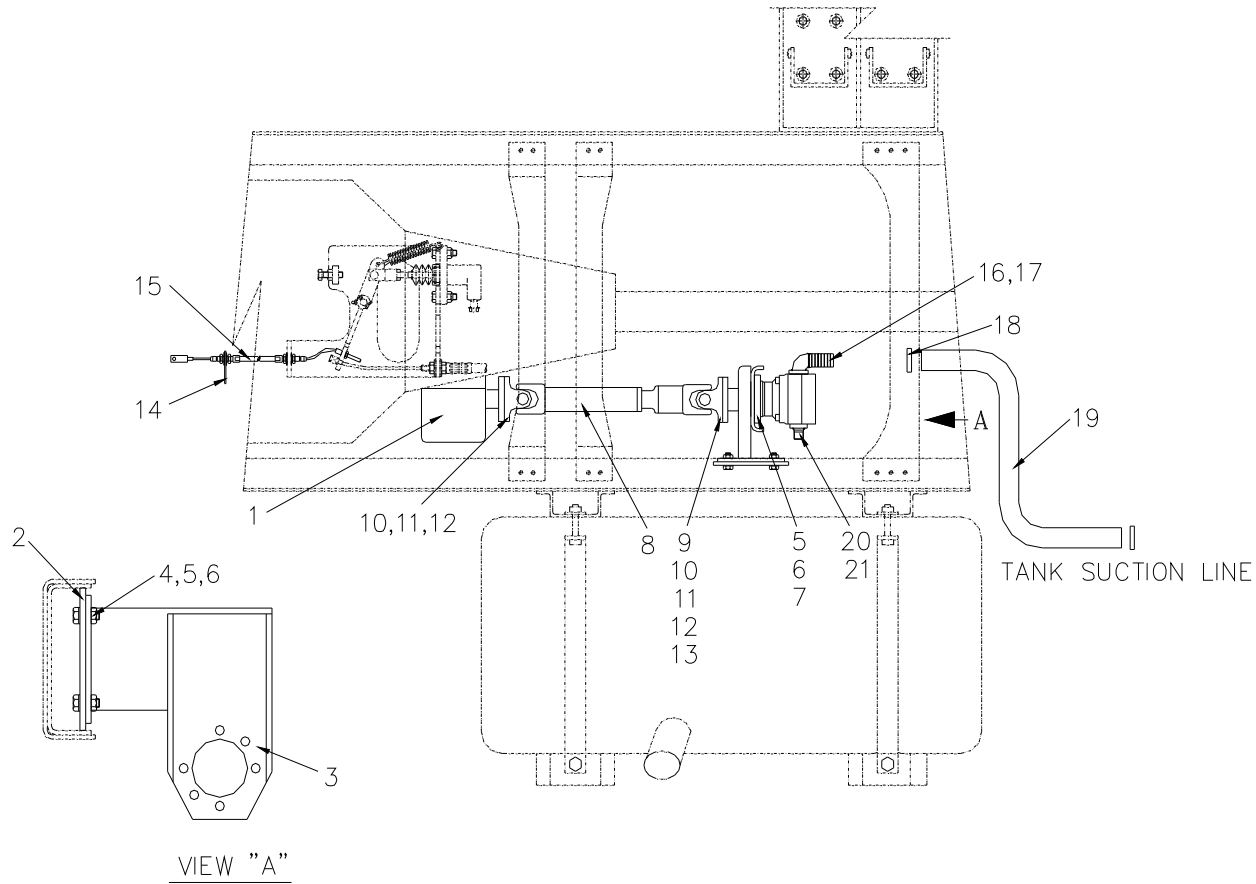
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-		피티오 & 펌프 마운팅 P.T.O & PUMP MOUNTING	1		6	3111126	육각 너트 NUT, HEX.	8	NA12
1	H01-0659	피티오 결합체 P.T.O ASS'Y	1	기아 5ton	7	H02-0142	유압 펌프 PUMP, HYDRAULIC	1	G20 (HALDEX)
-	H01-0524	피티오 결합체 P.T.O ASS'Y	1	현대 5ton	8	S01-0409	드라이브 샤프트 DRIVE SHAFT	1	L=760 기아, 현대 5ton
-	H01-0528	피티오 결합체 P.T.O ASS'Y	1	현대 8ton, 9.5ton	-	S01-0607	드라이브 샤프트 DRIVE SHAFT	1	L=1150 현대8ton, 11.5ton
-	H01-0664	피티오 결합체 P.T.O ASS'Y	1	현대 11.5ton	-	S01-1246	드라이브 샤프트 DRIVE SHAFT	1	L=850 현대 9.5ton
2	M05-0556	플레이트 PLATE	1	기아, 현대 5ton	9	M01-0585	아답터 ADAPTOR	1	기아, 현대5ton
-	M05-0645	플레이트 PLATE	1	현대 8ton, 9.5ton 현대 11.5ton	-	M01-0632	아답터 ADAPTOR	1	현대 8ton, 9.5ton 현대5ton
3	A05-1107	펌프 브라켓 BRACKET, PUMP	1		10	2115936	육각 머리 볼트 BOLT, HEX. HEAD	8	BA12×35 기아, 현대5ton
4	2116546	육각 머리 볼트 BOLT, HEX. HEAD	8	BA12×40	-	2116237	육각 머리 볼트 BOLT, HEX. HEAD	8	BA10×35 8ton, 9.5ton, 11.5ton
5	3612121	스프링 와셔 WASHER, SPRING	8	WS12	11	3612081	스프링 와셔 WASHER, SPRING	8	WS8 기아, 현대5ton

SPARE PARTS LIST



피티오 & 펌프 마운팅
P.T.O & PUMP MOUNTING

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피티오 & 펌프 마운팅
P.T.O & PUMP MOUNTING

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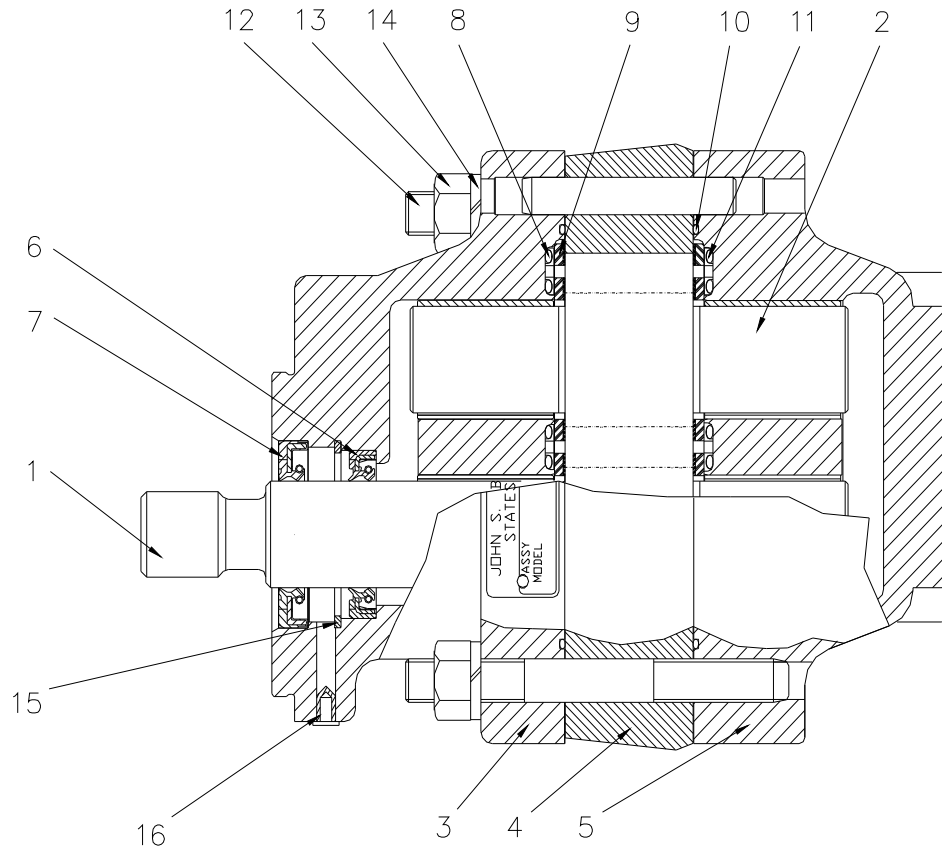
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-	3612101	스프링 와셔 WASHER, SPRING	8	WS10 8ton,9.5ton,11.5ton	18	S01-0744	호스 클램프 CLAMP, HOSE	2	Φ70
12	3111086	육각 너트 NUT, HEX.	4	NA10 기아,현대 5ton	19	H01-0670	흡입 호스 HOSE, SUCTION	1	I.D50×1.5M
-	3111106	육각 너트 NUT, HEX.	4	NA10 8ton,9.5ton,11.5ton	20	N01-2274	플랜지 FLANGE	1	
13	2115906	육각 머리 볼트 BOLT, HEX. HEAD	1	BA8×25	21	2116226	육각 머리 볼트 BOLT, HEX. HEAD	4	BA10×30
14	M05-1304	플레이트 PLATE	1						
15	S01-1497	스로틀 케이블 THROTTLE CABLE ASS'Y	1	1200L 기아 5ton					
-	S01-1499	스로틀 케이블 THROTTLE CABLE ASS'Y	1	1200L 현대 5ton					
-	S01-1498	스로틀 케이블 THROTTLE CABLE ASS'Y	1	1700L 8ton,9.5ton,11.5ton					
16	S01-1463	플랜지 FLANGE	1						
17	2111526	육각 머리 볼트 BOLT, HEX. HEAD	4	BA12×30					

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펌프
PUMP

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펌프
PUMP

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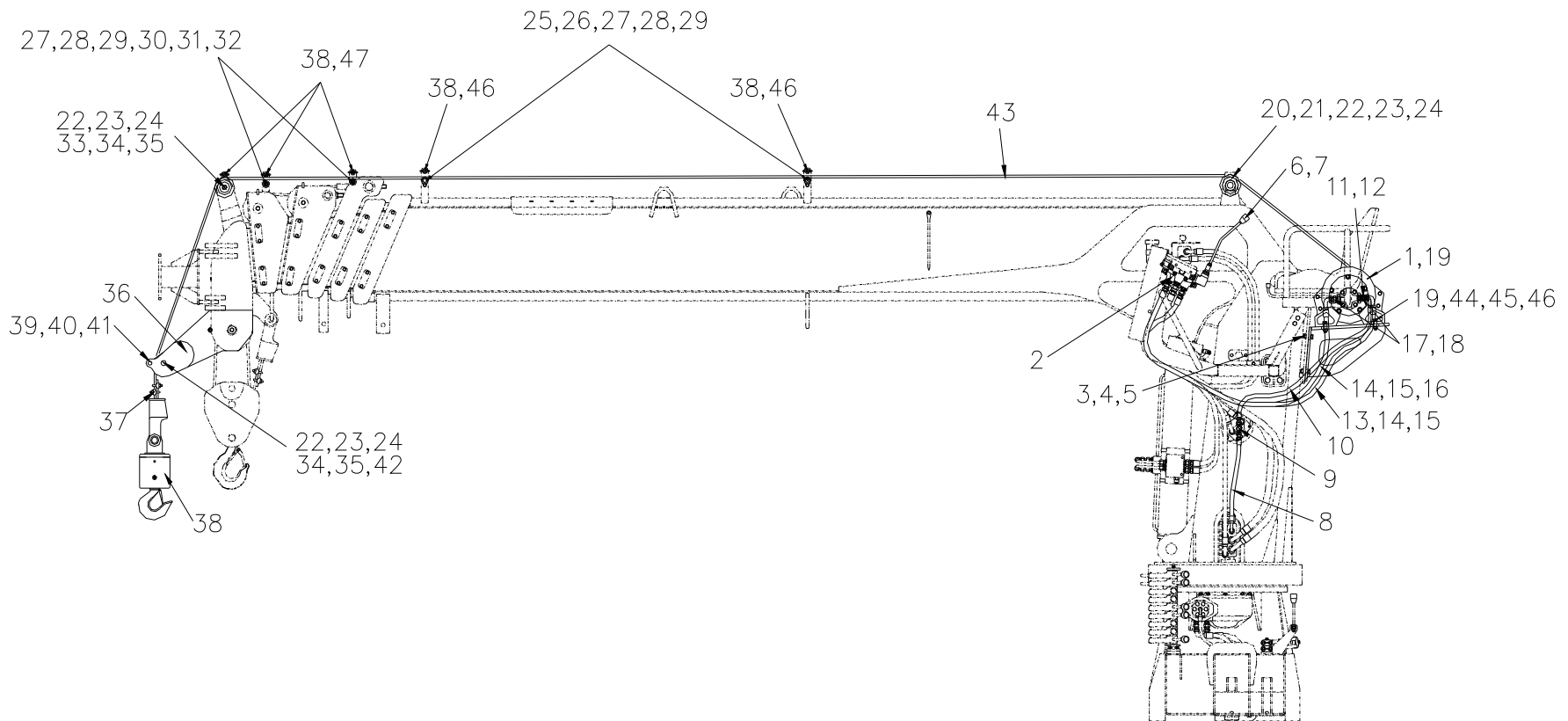
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-	H01-0142	펌프 PUMP, HYDRAULIC	1	G20 (HALDEX)	10	853207	O-링 O-RING	2	
1	409781	드라이브 기어 DRIVE GEAR	1		11	413398	시일 리트레이닝 SEAL RETAINING	2	
2	418126	드라이브 기어 DRIVEN GEAR	1		12	417854	스터드 볼트 STUD BOLT	8	
3	514080	프런트 커버 키트 KIT, FRONT COVER	1		13	407921	육각 너트 NUT, HEX.	8	
4	573534	센터 섹션 CENTER SECTION	1		14	99785	로크 와셔 LOCK WASHER	8	
5	2100935	리어 커버 키트 KIT, REAR COVER	1		15	85560	멈춤 링 RING, RETAINING	1	
6	192303	이너 샤프트 시일 SEAL, INNER SHAFT	1		16	576482	플러그 PLUG, DRIN.	1	
7	408996	아웃터 샤프트 시일 SEAL, OUTER SHAFT	1						
8	413397	시일 글랜드 SEAL GLAND	2		-	866855	시일 키트 SEAL KIT	1	
9	818348	웨어 플레이트 PLATE, WEAR	2						

SPARE PARTS LIST



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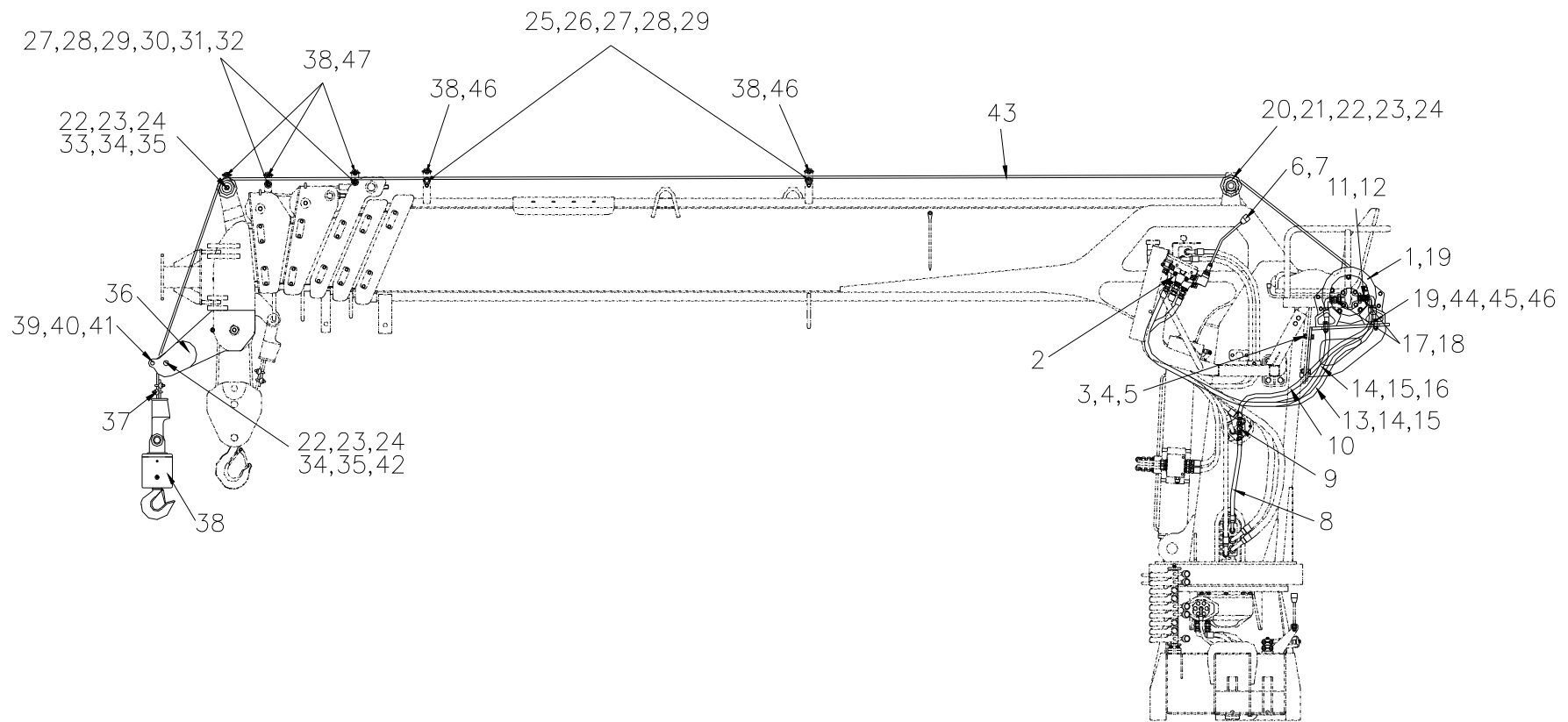
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-	JW1-9001	보조 윈치 결합체 JIB WINCH ASS'Y	1	TITAN 2	10	7170633	고압 호스 HOSE, H.P (HECF)	1	HECF3/8×580-PF3/8
1	H02-0082	유압 윈치 WINCH, HYDRAULIC	1	TITAN 2	11	S01-1383	니플 NIPPLE	1	PF3/8(C)×UNF7/16(O)
2	H02-0140	주 조종 밸브 VALVE, MAIN CONTROL	1	HC-D4-5	12	6010092	오링 O-RING	1	1B P9
3	2111527	육각 머리 볼트 BOLT, HEX. HEAD	4	BA12×30	13	7172443	고압 호스 HOSE, H.P (HECF)	1	HECF3/8×1350-PF1/2
4	3612121	스프링 와셔 WASHER, SPRING	4	WS12	14	9270072	호스 유니온 UNION, CONICAL	2	UC1/2×1/2
5	S01-0006	셀프 로킹 너트 NUT, SELF LOCKING	4	M12	15	6800081	실링 와셔 WASHER, SEALING	2	NF 216-8
6	JW-1051	레버 LEVER	1		16	7172463	고압 호스 HOSE, H.P (HECF)	1	HECF3/8×1400-PF1/2
7	S01-0047	손잡이 KNOB	1	BLACK	17	S01-1091	니플 NIPPLE	2	PF1/2(C)×UNF1"5/16(O)
8	7170593	고압 호스 HOSE, H.P (HECF)	1	HECF3/8×480-PF3/8	18	6010342	오링 O-RING	2	1B P29.5
9	H01-0901	호스 스위블 티 TEE, HOSE SWIVEL	1	3-PF3/8	19	JW-7002	윈치 브라켓 결합체 WINCH BRACKET ASS'Y	1	

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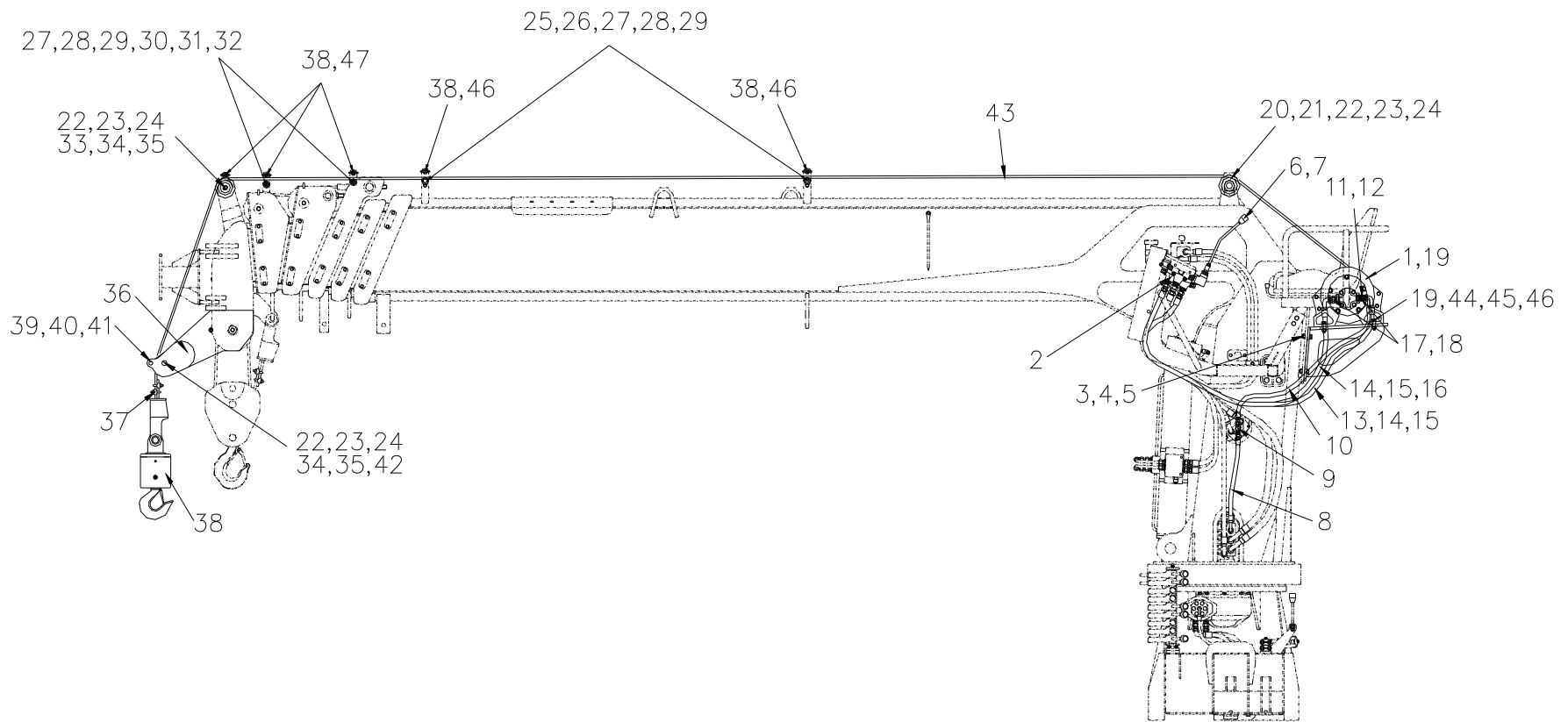
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20	TA-0009	쉬브 SHEAVE	1		30	S01-1667	핀 PIN	2	Φ20×62
21	JW-3009	샤프트 SHAFT	1	Φ30×228	31	JW-3021-1	롤러 ROLLER	2	Φ34×50
22	N01-0543	플레이트 PLATE	3	t=6	32	S01-0098	평 와셔 WASHER, PLAIN	4	Φ25×2t
23	2111206	육각 머리 볼트 BOLT, HEX. HEAD	3	BA10×25	33	JW-3031	샤프트 SHAFT	1	Φ25×62
24	3612101	스프링 와셔 WASHER, SPRING	3	WS10	34	JB-1020	쉬브 SHEAVE	2	
25	BOO-2008	샤프트 SHAFT	2	Φ20×150	35	4112052	깊은홈 볼 베어링 BEARING, RADIAL BALL	4	
26	BOO-2010	롤러 ROLLER	2	Φ34×128	36	A05-1068	쉬브 브라켓 BRACKET, SHEAVE	1	
27	N01-2739	니들 베어링 BEARING, NEEDLE	8	2020	37	N01-1722	클립 CLIP	2	SIZE: 3/8 inch
28	2110856	육각 머리 볼트 BOLT, HEX. HEAD	6	BA8×14	38	A02-0884	스위블 훅 결합체 SWIVEL HOOK ASS'Y	1	3ton
29	3612081	스프링 와셔 WASHER, SPRING	6	WS8	39	JB-1022	샤프트 SHAFT	1	

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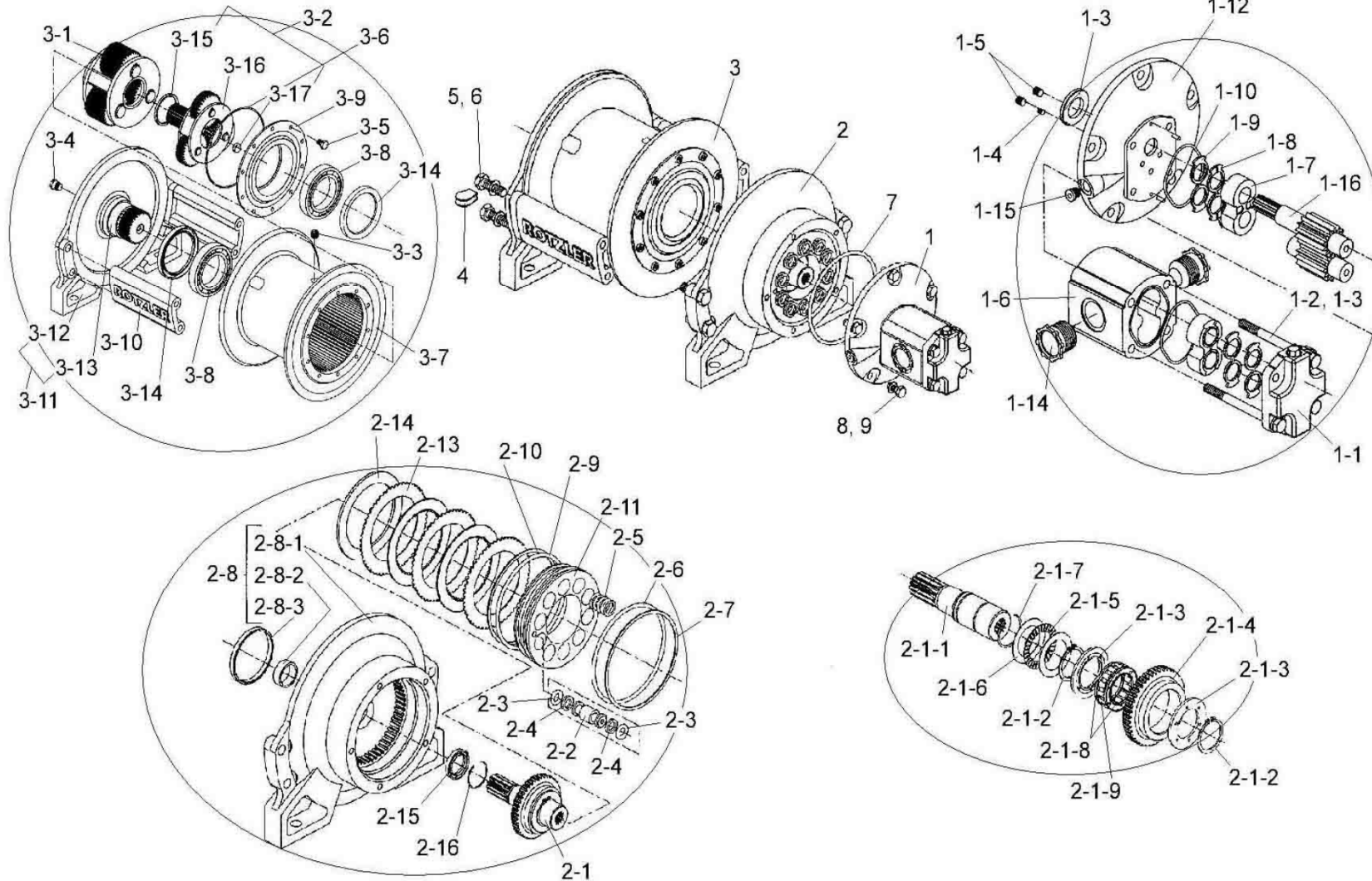
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40	JW-1049	파이프 PIPE	1						
41	S01-0002	록 핀 PIN, LOCK	6						
42	JW-1050	샤프트 SHAFT	1	Φ25×52					
43	S01-1090	와이어 로프 ROPE, WIRE	1	Φ10×55					
44	2112177	육각 머리 볼트 BOLT, HEX. HEAD	4	BA16×55					
45	3612161	스프링 와셔 WASHER, SPRING	4	WS16					
46	S01-0008	셀프 로킹 너트 NUT, SELF LOCKING	4	M16					
47	S01-0098	평 와셔 WASHER, PLAIN	4	Φ25×2t					
48	S01-2072	핀 PIN	2						
49	S01-2073	핀 PIN	3						

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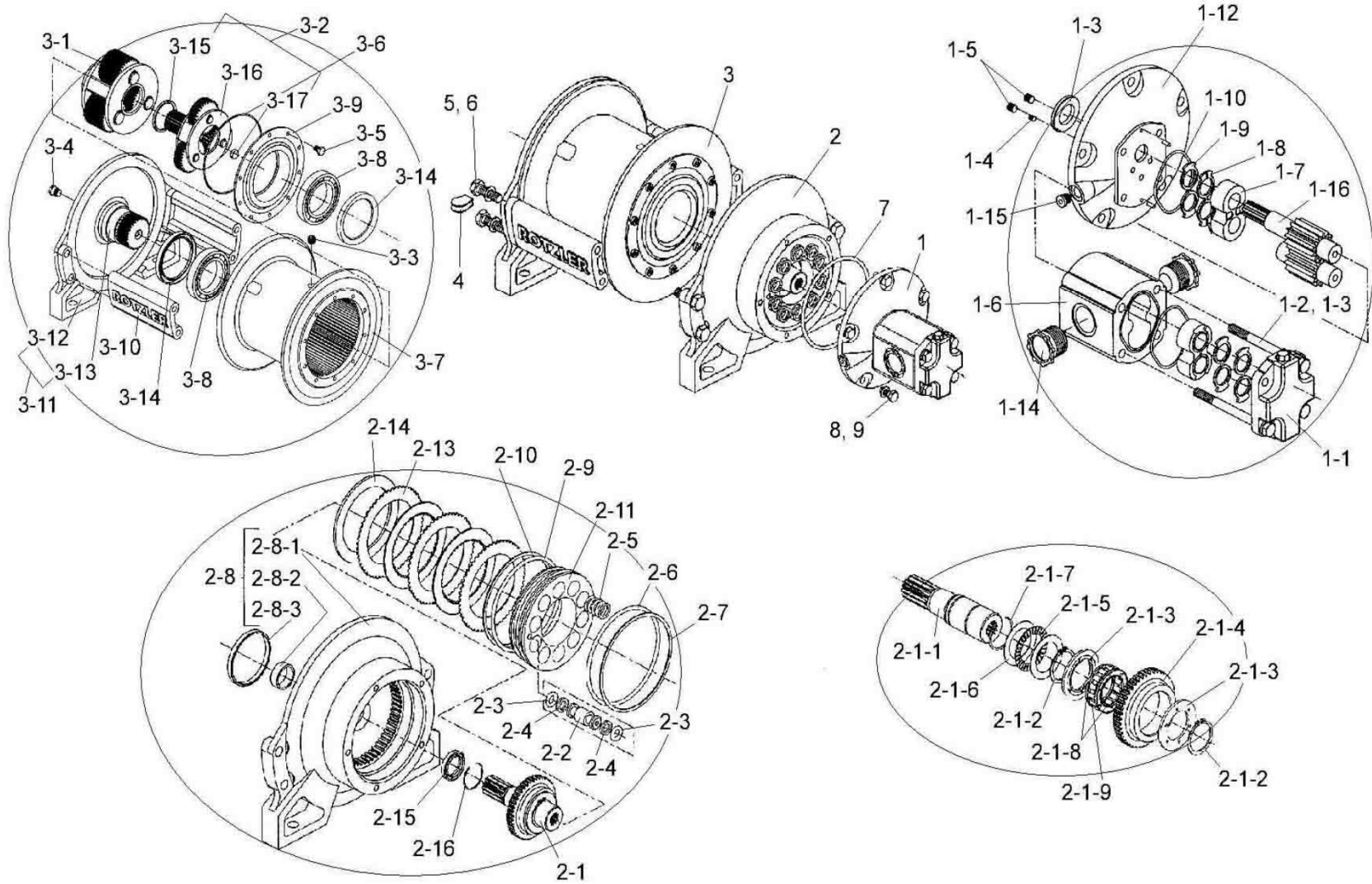
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-	H02-0082	유압 윈치 WINCH, HYDRAULIC	1	TITAN 2.19	1-9	220-055	모터 시일 MOTOR SEAL	2	BACK UP
1	()	모터 결함체 MOTOR ASS'Y	1		1-10	220-056	모터 시일 MOTOR SEAL	2	SECTION
1-1	220-019	모터 커버 MOTOR COVER	1		1-11	220-054	모터 고정 핀 MOTOR DOWEL PIN	2	
1-2	220-118	육각 머리 볼트 BOLT, HEX. HEAD	4		1-12	220-017	모터 커버 MOTOR COVER	1	
1-3	220-029	스프링 와셔 WASHER, SPRING	4		1-13	220-084	스톱퍼 STOPPER	1	
1-4	220-057	플러그 PLUG	1	1/16	1-14	220-071	플러그 PLUG	2	
1-5	220-135	플러그 PLUG	2	1/8	1-15	220-072	플러그 PLUG	1	
1-6	220-116	모터 하우징 MOTOR HOUSING	1		1-16	220-117	모터 기어 셋트 MOTOR GEAR SET	1	
1-7	220-020	모터 부상 MOTOR BUSHING	2		2	()	브레이크 하우징 결함체 BRAKE HOUSING ASS'Y	1	
1-8	220-053	모터 시일 MOTOR SEAL	2	CHANNEL	2-1	()	클러치 결함체 CLUTCH ASS'Y	1	

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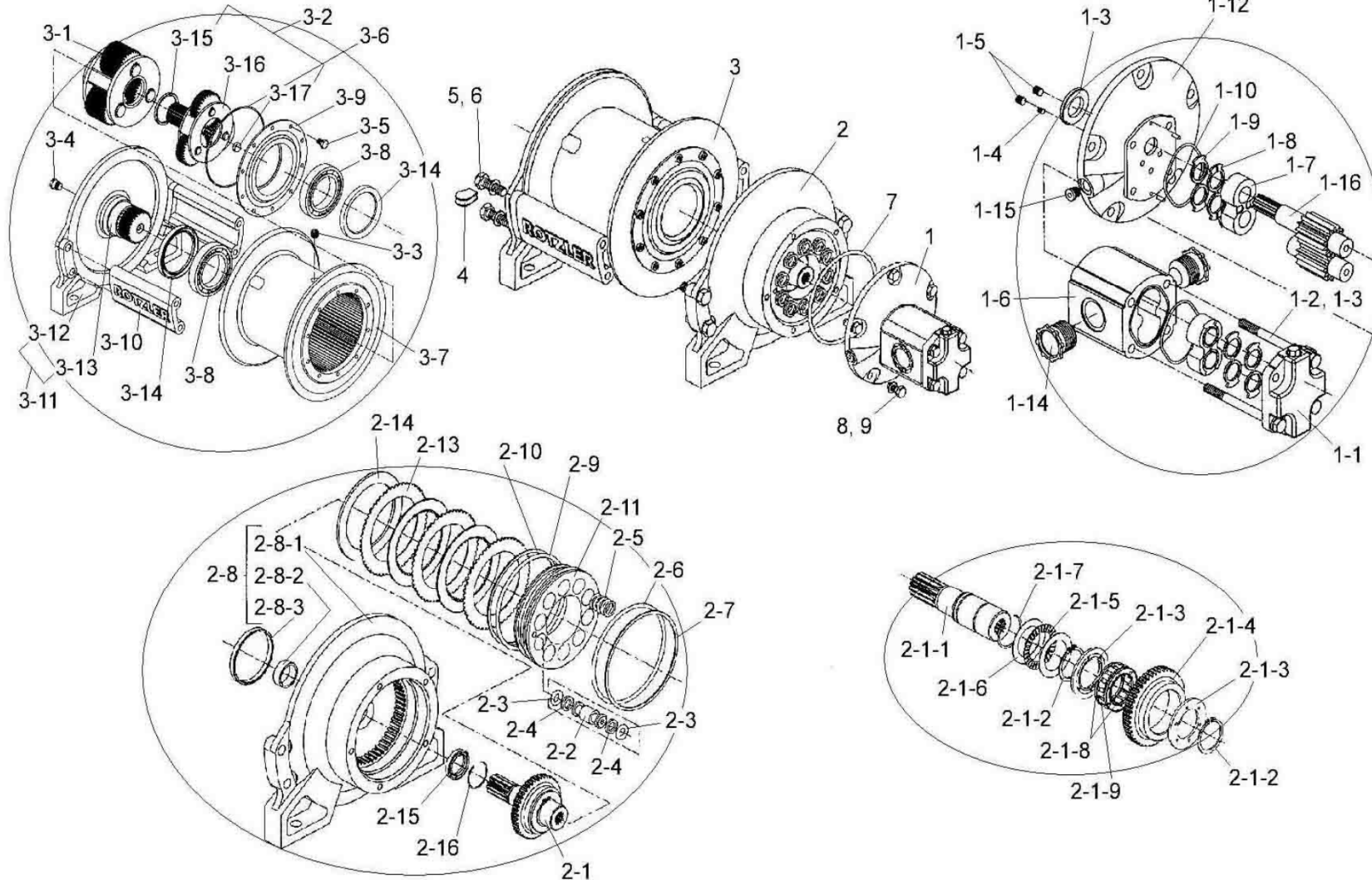
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2-1-1	220-014	브레이크 샤프트 BRAKE SHAFT	1		2-3	220-047	오링 O-RING	2	
2-1-2	220-037	멈춤 링 RING, RETAINING	2		2-4	220-048	백업 링 RING, BACK UP	2	
2-1-3	220-036	브레이크 클러치 와셔 BRAKE CLUTCH WASHER	2		2-5	220-016	스프링 SPRING	4	
2-1-4	220-010	브레이크 허브 BRAKE HUB	1		2-6	220-043	오링 O-RING	1	
2-1-5	220-034	스러스트 롤러 베어링 BEARING, THRST ROLLER	1		2-7	220-042	백업 링 RING, BACK UP	2	
2-1-6	220-049	스러스트 와셔 THRUST WASHER	2		2-8	220-076	브레이크 하우징 BRAKE HOUSING	4	
2-1-7	220-046	멈춤 링 RING, RETAINING	1		2-8-1	220-002	하우징 HOUSING	1	
2-1-8	220-124	브레이크 클러치 하우징 BRAKE CLUTCH HOUSING	1		2-8-2	220-066	부싱 BUSHING	2	
2-1-9	220-125	브레이크 클러치 베어링 BRAKE CLUTCH BEARING	2		2-8-3	220-058	슬리브 SLEEVE	1	
2-2	220-045	브레이크 콘duit BRAKE CONDUIT	6		2--9	220-041	오링 O-RING	1	

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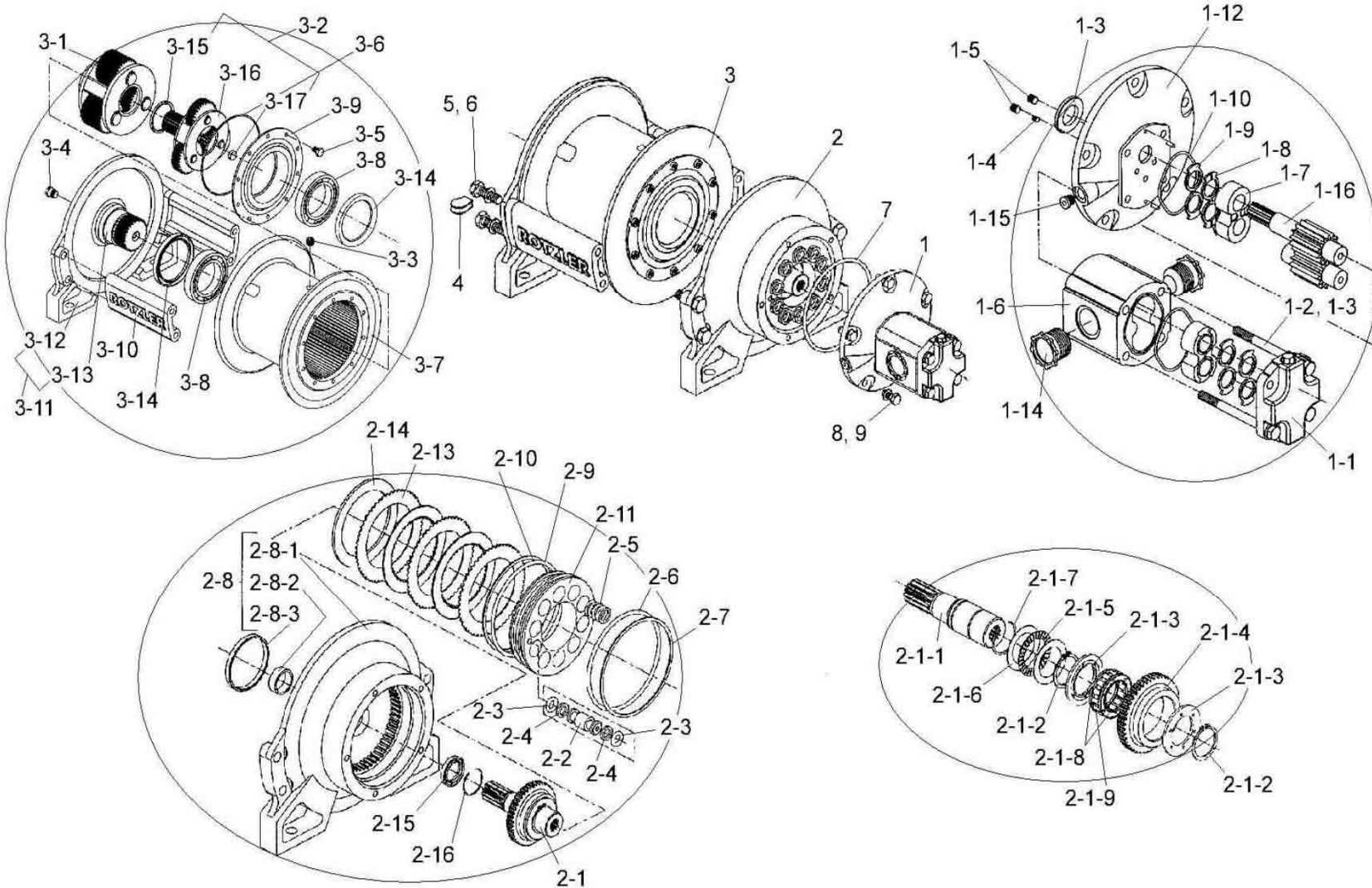
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2-10	220-040	백업 링 RING, BACK UP	1		3-3	220-061	플러그 PLUG	1	
2-11	220-011	브레이크 피스톤 BRAKE PISTON	1		3-4	220-063	릴리프 밸브 RELIEF VALVE	1	
2-12	220-039	브레이크 디스크 BRAKE DISC	2		3-5	220-085	육각 머리 볼트 BOLT, HEX. HEAD	10	
2-13	220-038	브레이크 분리기 BRAKE SEPARATOR	3		3-6	220-064	오링 O-RING	1	
2-14	220-015	브레이크 플레이트 BRACKE PLATE	1		3-7	220-013	드럼 DRUM	1	
2-15	220-035	씨일 SEAL	1		3-8	220-059	볼 베어링 BEARING, BALL	2	
2-16	220-081	멈춤 링 RING, RETAINING	1		3-9	220-012	베어링 홀더 HOLDER, BEARING	1	
3	()	드럼 결합체 DRUM ASS'Y	1		3-10	220-030	스페이서 바 SPACER BAR	2	
3-1	RF.TH2	감속 기어 결합체 REDUCTION GEAR ASS'Y	1		3-11	220-074	하우징 커버 결합체 HOUSING COVER ASS'Y	1	
3-2	RP.TH2	감속 기어 결합체 REDUCTION GEAR ASS'Y	1		3-12	220-001	하우징 커버 HOUSING COVER	1	

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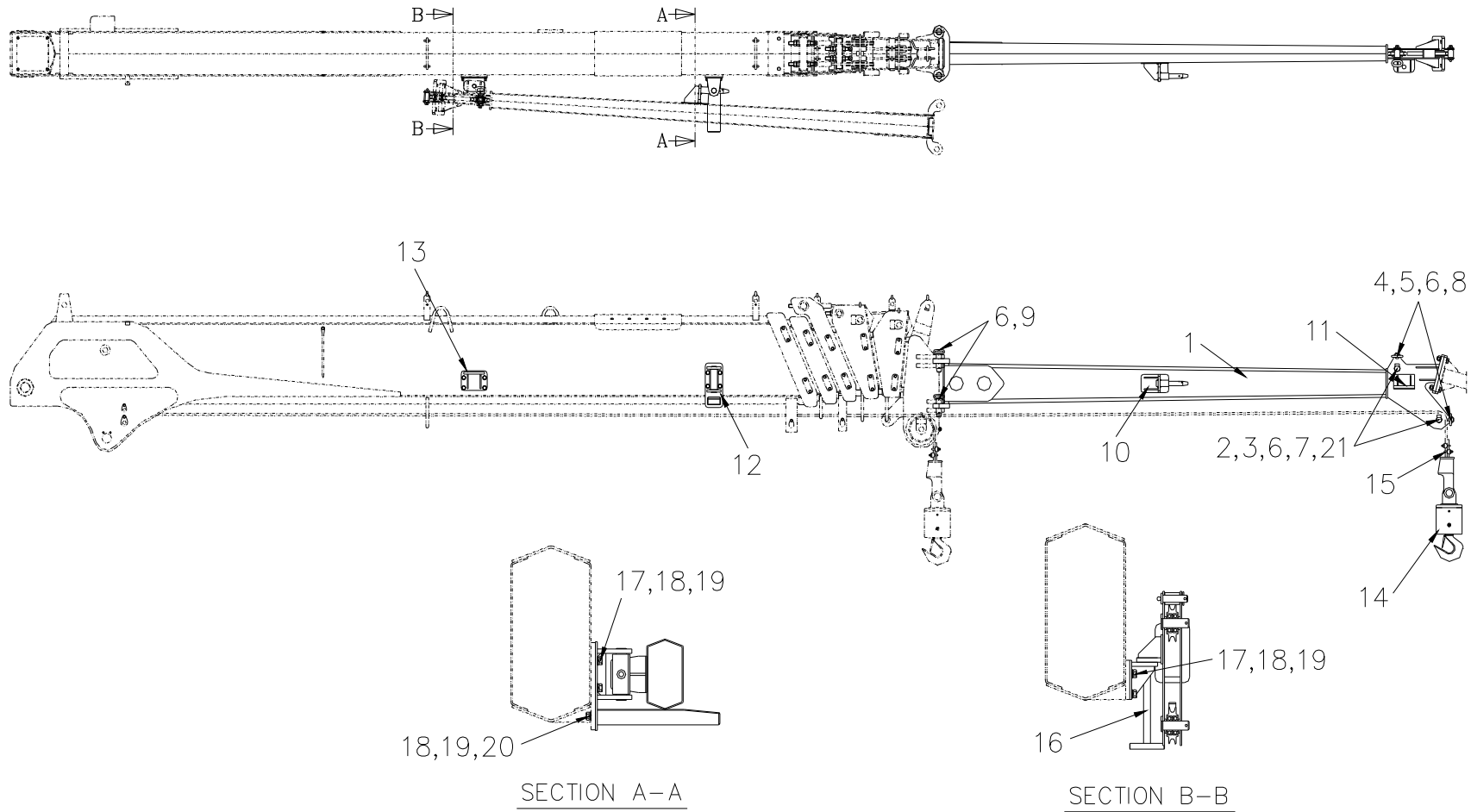
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3-13	220-058	슬리브 SLEEVE	1		9	220-068	스프링 와셔 WASHER, SPRING	5	
3-14	220-060	시일 SEAL	1						
3-15	220-024	캐리지 스톱퍼 CARRIER STOPPER	1						
3-16	220-007	선 기어 SUN GEAR	1		2	220-093	시일 키트 SEAL KIT	1	
3-17	220-026	선 기어 스톱퍼 SUN GEAR STOPPER	1						
4	220-067	뿔 WEDGE	1						
5	220-062	육각 머리 볼트 BOLT, HEX. HEAD	8						
6	220-022	스프링 와셔 WASHER, SPRING	8						
7	220-044	오링 O-RING	1						
8	220-032	육각 머리 볼트 BOLT, HEX. HEAD	5						

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지브 붐 결합체
JIB BOOM ASS'Y

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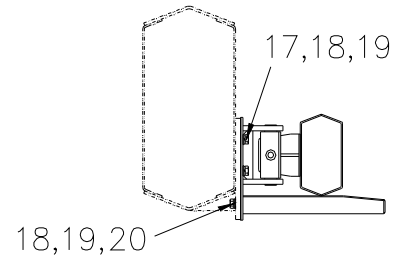
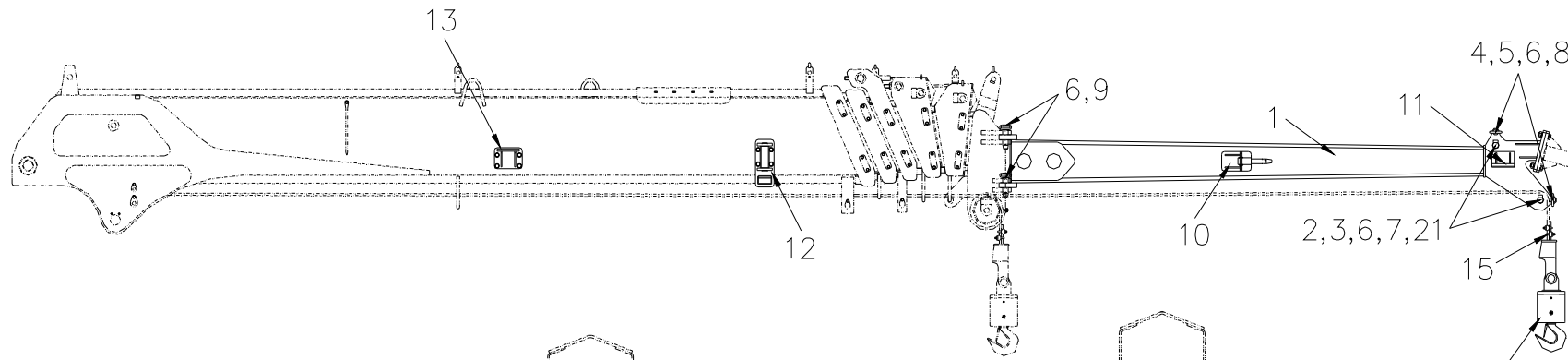
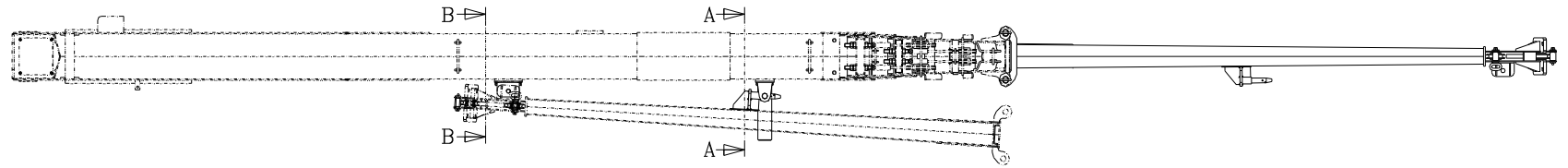
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-	JB-6001	지브 붐 결합체 JIB BOOM ASS'Y	1		10	JB-4014	브라켓 결합체 BRACKET ASS'Y	1	
1	JB-4003	지브 붐 JIB BOOM	1	3m 용	11	JB-4020	브라켓 결합체 BRACKET ASS'Y	1	
2	JB-1020	쉬브 SHEAVE	2		12	JB-4009	브라켓 결합체 BRACKET ASS'Y	1	
3	JB-1021	핀 PIN	2	Φ25	13	JB-4011	브라켓 결합체 BRACKET ASS'Y	1	
4	JB-1022	핀 PIN	2	Φ20	14	A02-0884	스위블 훅 결합체 SWIVEL HOOK ASS'Y	1	3 ton
5	JB-3021	파이프 PIPE	2	Φ34×6.4t	15	N01-3145	클립 CLIP	2	7/16 inch
6	S01-0002	록 핀 PIN, LOCK	8		16	JB-1035	핀 PIN	1	
7	3511241	평 와셔 WASHER, PLAIN	2	WP24	17	2111497	육각 머리 볼트 BOLT, HEX. HEAD	8	BA12×22
8	3511201	평 와셔 WASHER, PLAIN	2	WP20	18	3511121	평 와셔 WASHER, PLAIN	9	WP12
9	S01-1644	핀 PIN	4	Φ30×100	19	3612121	스프링 와셔 WASHER, SPRING	9	WS12

SPARE PARTS LIST

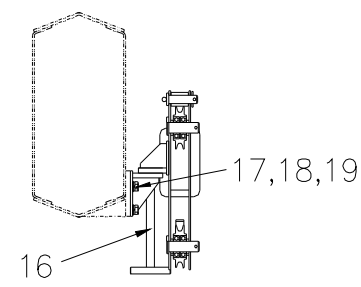


지브 붐 결합체
JIB BOOM ASS'Y

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SECTION A-A



SECTION B-B

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지브 붐 결합체
JIB BOOM ASS'Y

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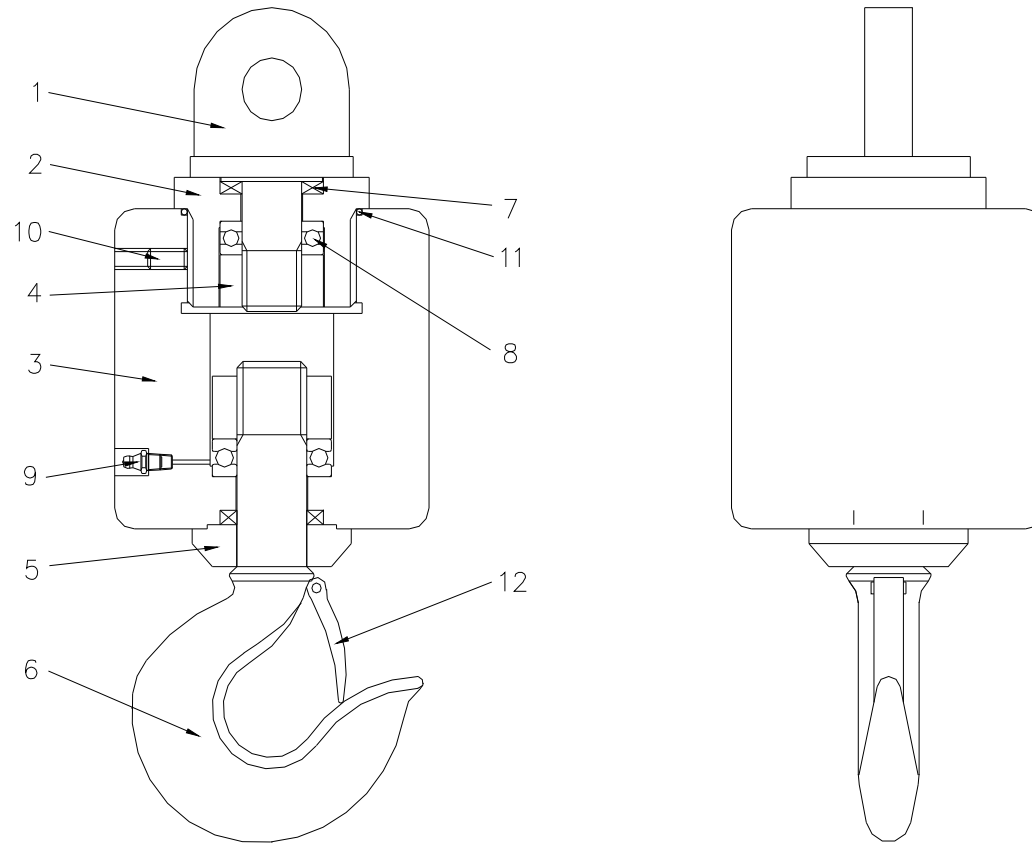
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20	2611507	홍불이 육각 머리 볼트 BOLT, HEX. SOCKET HEAD	1	BB12×25					
21	4112052	깊은 홈 볼 베어링 BEARING, RADIAL BALL	4	6205ZZ					

SPARE PARTS LIST



1연 후크 결합체
SWIVEL HOOK ASS'Y

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SPARE PARTS LIST



1연 후크 결합체
SWIVEL HOOK ASS'Y

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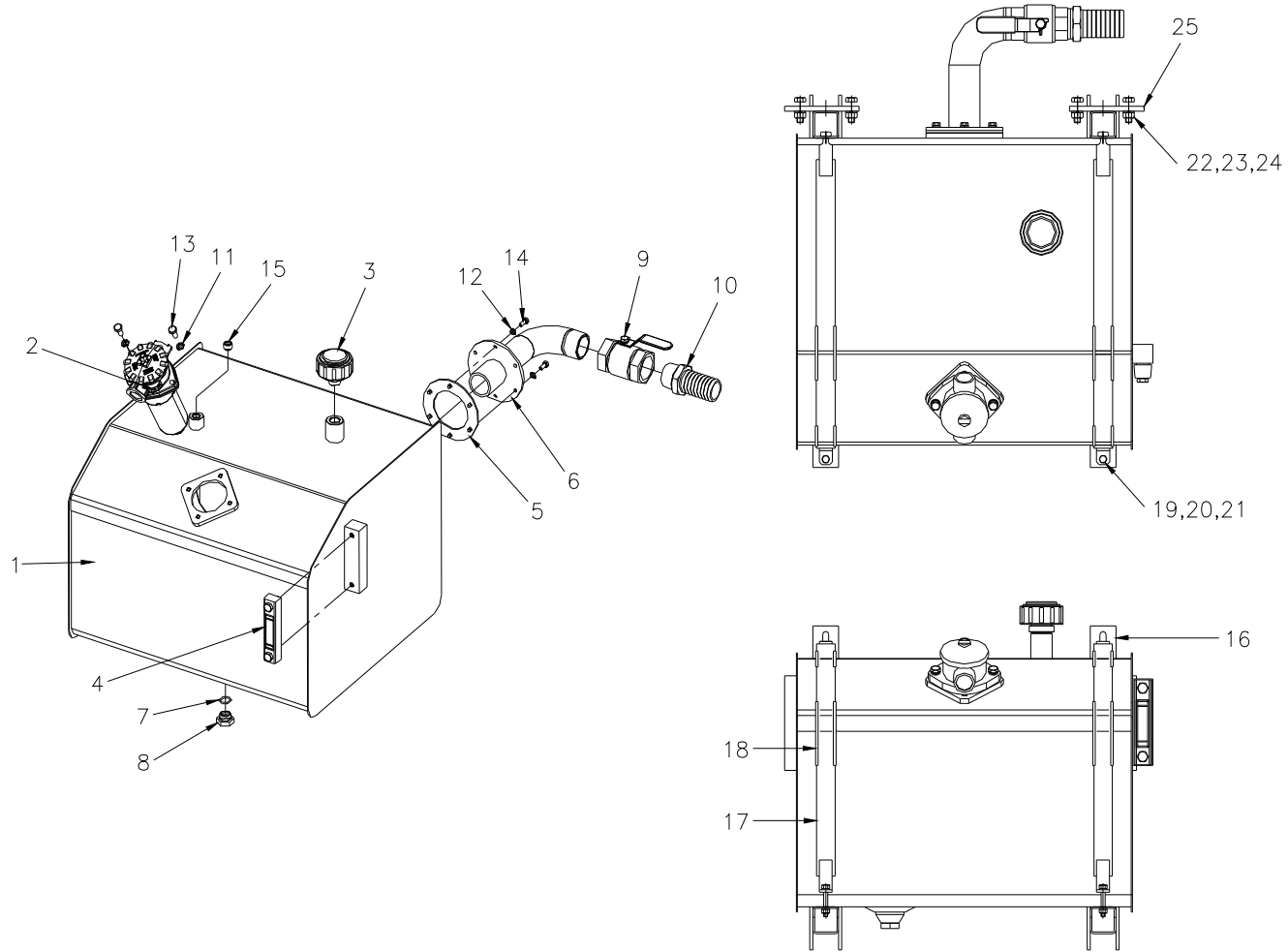
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-	A02-0884	1연 후크 결합체 SWIVEL HOOK ASS'Y	1	3ton	10	2350816	멈춤 나사 SCREW, SET	1	BV10×20
1	A02-0884-1	아이 볼트 BOLT, EYE	1	M30×P3.5	11	6012342	오링 O-RING	1	1B G70
2	A02-0884-2	커플링 COUPLING	1	M72×P2.5	12	S01-1547	안전 클립 결합체 CLIP ASS'Y, SAFETY	1	
3	A02-0884-3	바디 BODY	1						
4	A02-0884-5	너트 NUT	2	M30×P3.5					
5	A02-0884-6	후크 커버 COVER, HOOK	1						
6	A02-0884-7	후크 HOOK	1						
7	A02-0884-8	오일 시일 SEAL, OIL	2	30×52×6					
8	4211060	스러스트 볼 베어링 BEARING, THRUST BALL	2	51206					
9	4610702	그리스 니플 NIPPLE, GREASE	1	A-PT1/8					

SPARE PARTS LIST



오일 탱크
OIL TANK

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SPARE PARTS LIST



오일 탱크
OIL TANK

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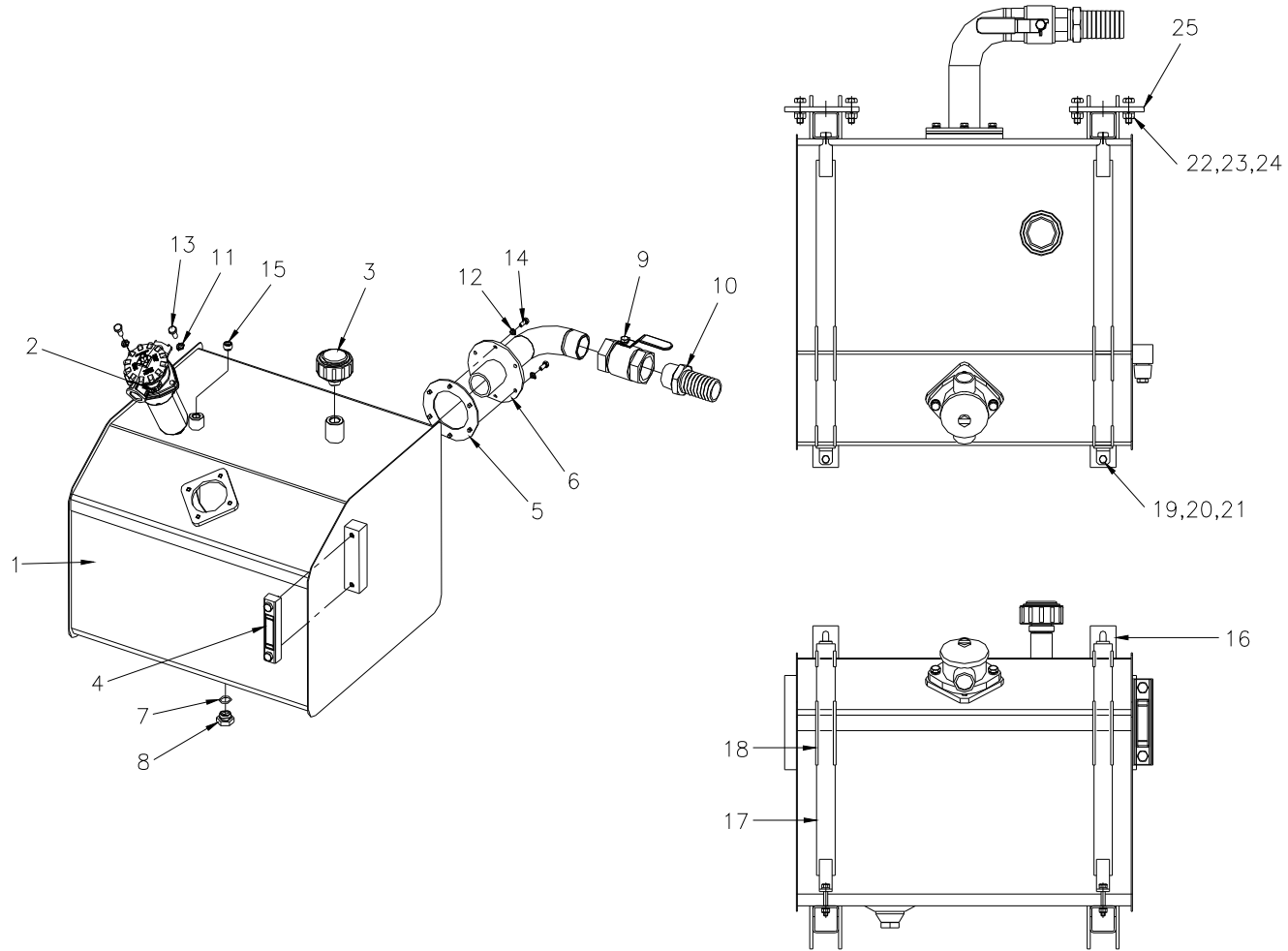
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-	A02-0950	오일 탱크 조립체 OIL TANK ASS'Y	1	170 ℓ	10	S01-0741	석션 니플 NIPPLE, SUCTION	1	PT2,O,Φ52
1	A05-3260	오일 탱크 바디 BODY, OIL TANK	1		11	3612101	스프링 와셔 WASHER, SPRING	2	WS10
2	H01-1287	리턴 필터 FILTER, RETURN	1		12	3612081	스프링 와셔 WASHER, SPRING	6	WS8
3	S01-2475	에어 브리더 BREATHER, AIR	1	BF30	13	2111206	육각 볼트 BOLT, HEX. HEAD	2	BA10×25
4	S01-2474	오일 레벨 게이지 GUAGE, OIL LEVEL	1	FSA	14	2110886	육각 볼트 BOLT, HEX. HEAD	6	BA8×20
5	OT-0013	가스켓 GASKET	1	t4, Φ150	15	BA-0079	플러그 PLUG, PT	1	PT 1/2
6	A05-1570	흡입 플랜지 FLANGE, SUCTION	1	PT2"×50A	16	A05-3261	마운팅 브라켓 BRACKET, TANK	2	
7	6010282	O-링 O-RING	1	P24	17	A05-3262	오일 탱크 밴드 OIL TANK BAND	2	
8	S01-0076	플러그 PLUG	1	PF3/4	18	S01-0046	밴드 BAND	4	
9	S01-0740	핸드 스톱 밸브 VALVE, HAND STOP	1	2-PT2"	19	2115976	육각 볼트 BOLT, HEX. HEAD	2	BA8×55

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오일 탱크
OIL TANK

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SPARE PARTS LIST



오일 탱크
OIL TANK

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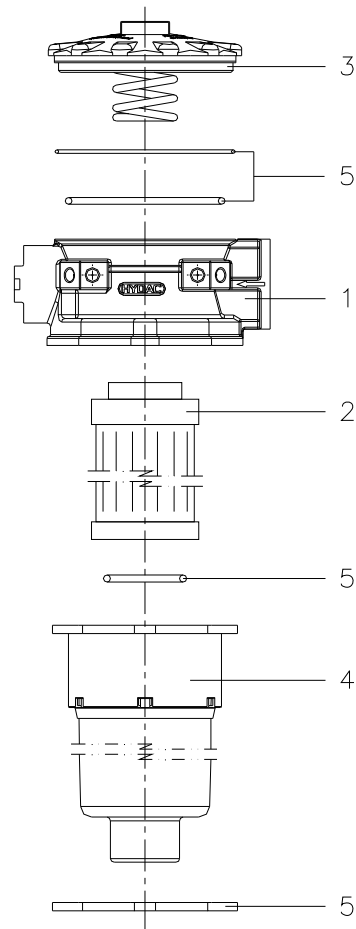
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20	3511081	평 와셔 WASHER, PLAIN	4	WP8					
21	3111081	육각 너트 NUT, HEX.	2	NA8					
22	2111546	육각 볼트 BOLT, HEX. HEAD	8	BA12×40					
23	3612121	스프링 와셔 WASHER, SPRING	8	WS12					
24	3111121	육각 너트 NUT, HEX.	8	NA12					
25	W01-5641	플레이트 PLATE	2	t9					

SPARE PARTS LIST



리턴 필터
FILTER, RETURN

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SPARE PARTS LIST



리턴 필터
FILTER, RETURN

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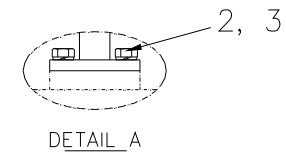
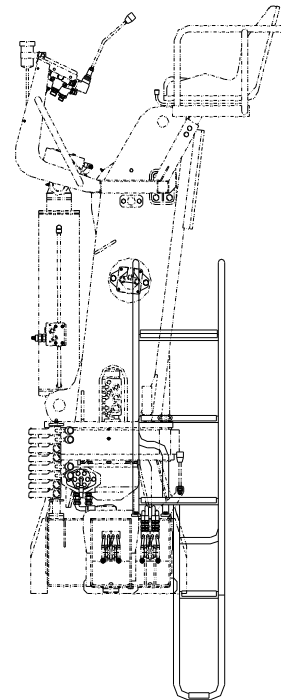
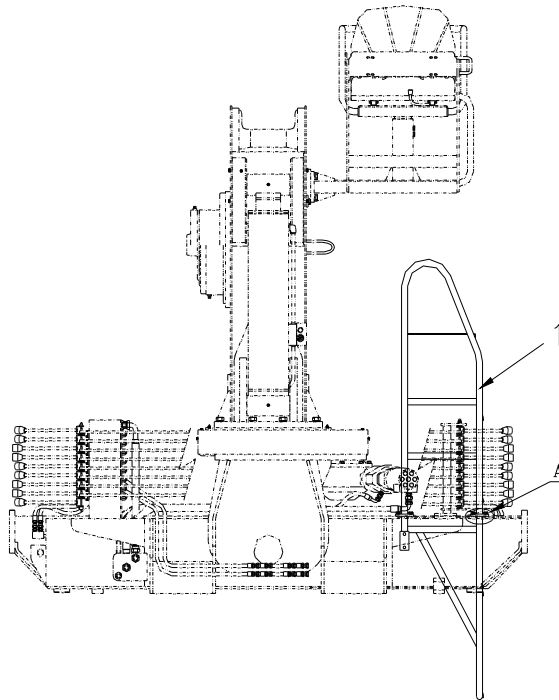
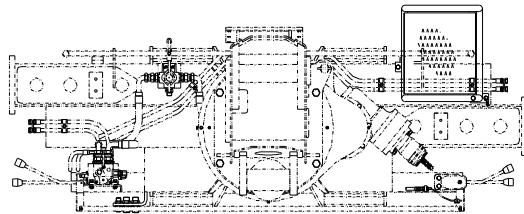
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-	H01-1287	리턴 필터 FILTER, RETURN	1						
1	1250427	하우징 HOUSING	1						
2	H01-1288	엘리먼트 필터 FILTER, ELEMENT	1						
3	1250536	커버 COVER	1						
4	S01-3414	보울 BOWL	1						
5	S01-4477	시일 키트 KIT, SEAL	3						

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사다리 결합체
LADDER MOUNTING

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사다리 결합체
LADDER MOUNTING

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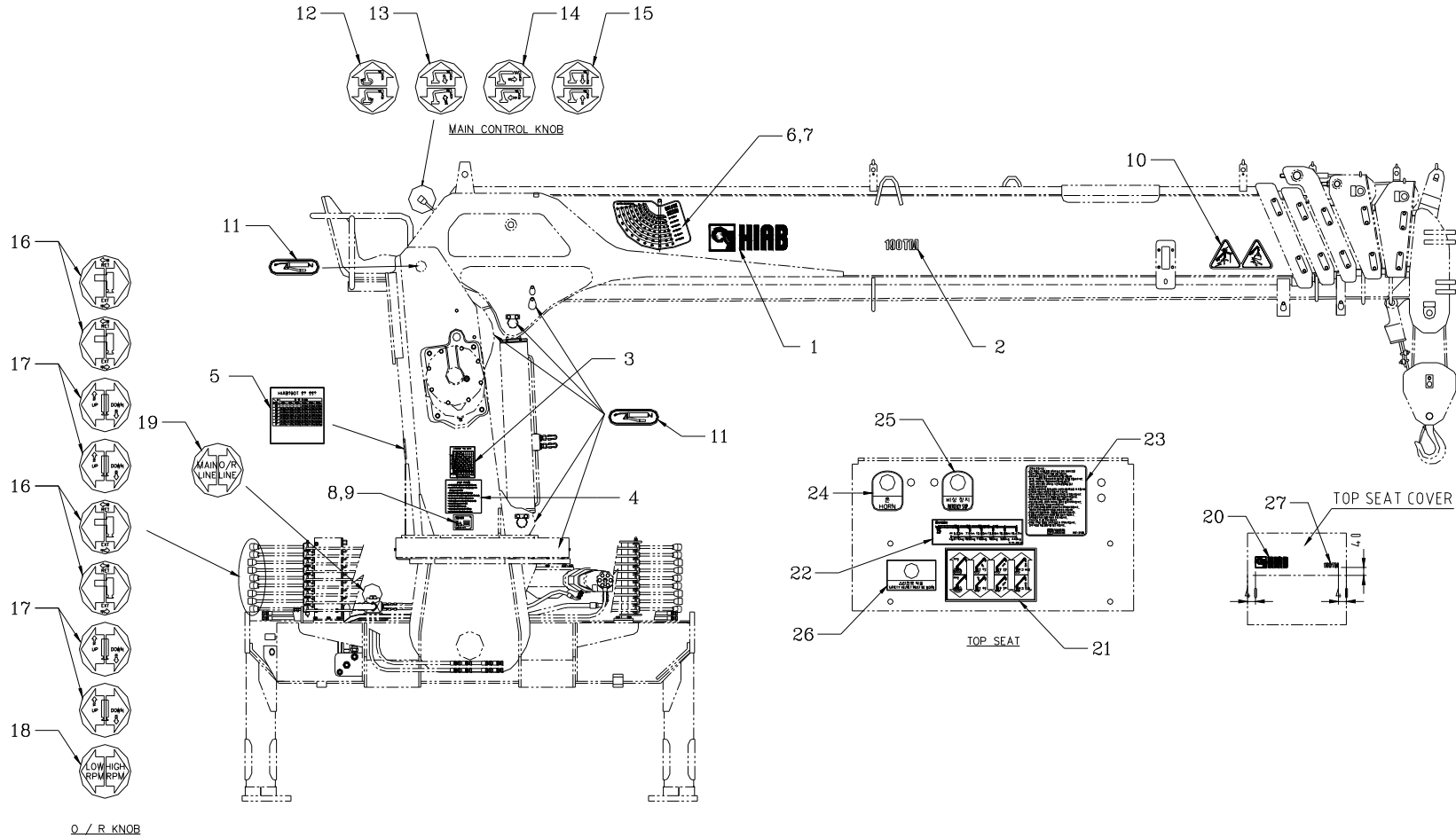
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-	LM-0001	사다리 장착 LADDER MTG.	1						
1	LM-0002	사다리 LADDER	1						
2	21 11206	육각 볼트 BOLT, HEX. HEAD	6	BA10×25					
3	36 12101	스프링 와셔 WASHER, SPRING	6	WS10					

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스티커 배열 STICKER ARRANGEMENT

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스티커 배열
STICKER ARRANGEMENT

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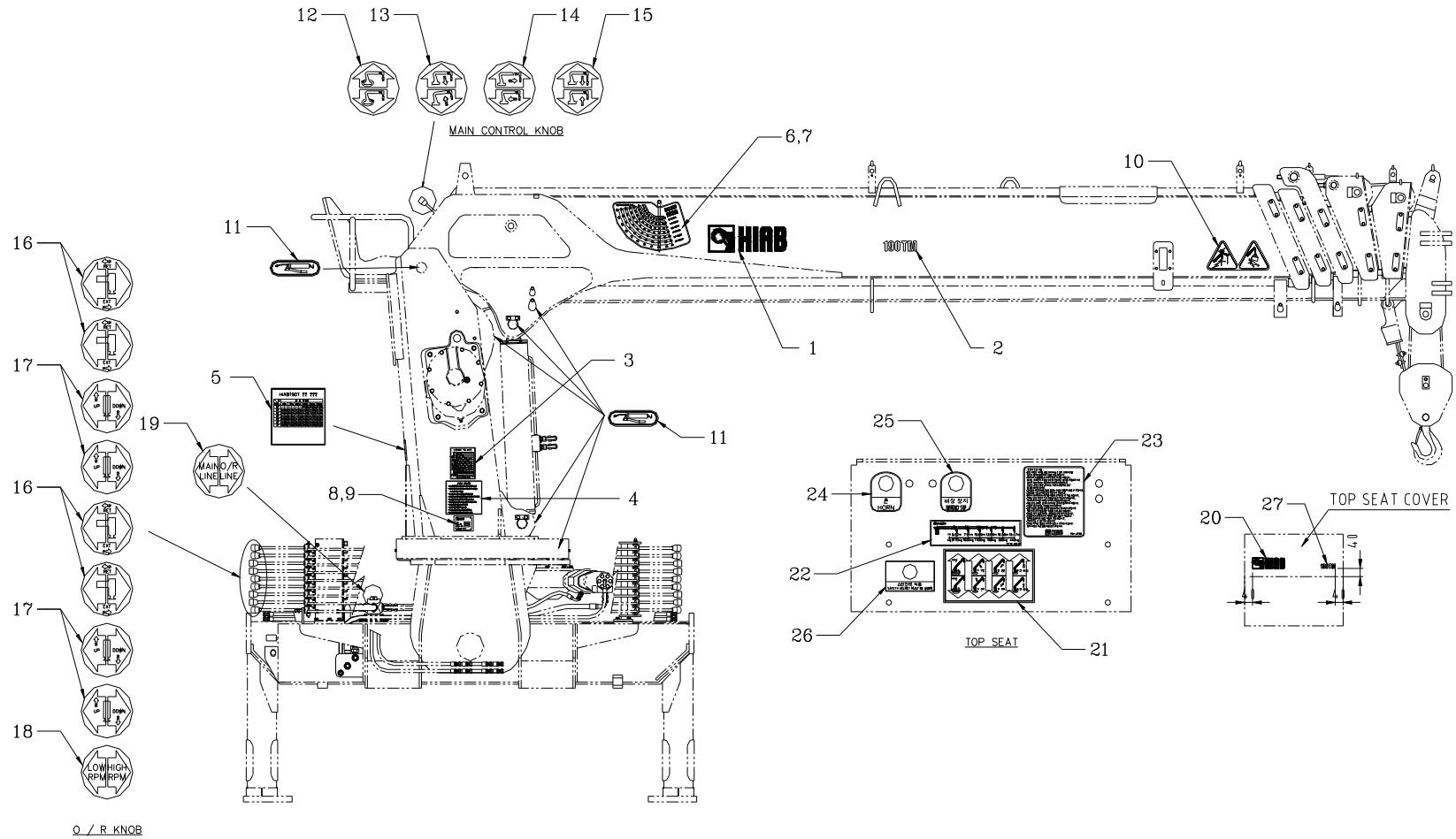
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-	A01-2340	스티커 배열 ARRANGENT, STICKER	1		10	P01-0124	위험 플레이트 PLATE, WARNING	1	
1	387 0370	로고 라벨 LABEL, LOGO	2		11	P01-0159	그리스 스티커 STICKER, GREASE	7	
2	161 8351	모델 네임 라벨 LABEL, MODEL NAME	2		12	P01-0258	선회 스티커 STICKER, SLEWING	1	
3	P01-0400	작업 반경도 WORKING RADIUS	1		13	P01-0259	기복 스티커 STICKER, DERRICK	1	
4	P01-0146	주의사항 라벨 LABEL, WARNING	1		14	P01-0260	신축 스티커 STICKER, EXTENSION	1	
5	P01-0399	적재 능력 LOAD CHART	1		15	P01-0261	원치 스티커 STICKER, WINCH	1	
6	P01-0401	붐 각도 플레이트(오른쪽) PLATE, BOOM ANGLE(RIGHT)	1		16	P01-0264	사이드 쉬프트 스티커 STICKET, SIDE SHIFT	8	
7	P01-0402	붐 각도 플레이트(왼쪽) PLATE, BOOM ANGLE(LEFT)	1		17	P01-0265	아웃트리거 스티커 STICKER, JACK	8	
8	P01-2134	명칭 플레이트 PLATE, NAME	1		18	P01-0267	RPM 스티커 STICKET, RPM	2	
9	S01-0182	블라인드 리벳 RIVET, BLIND	1		19	P01-0266	라인 컨트롤 스티커 STICKER, LINE CONTROL	2	

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스티커 배열 STICKER ARRANGEMENT

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스티커 배열
STICKER ARRANGEMENT

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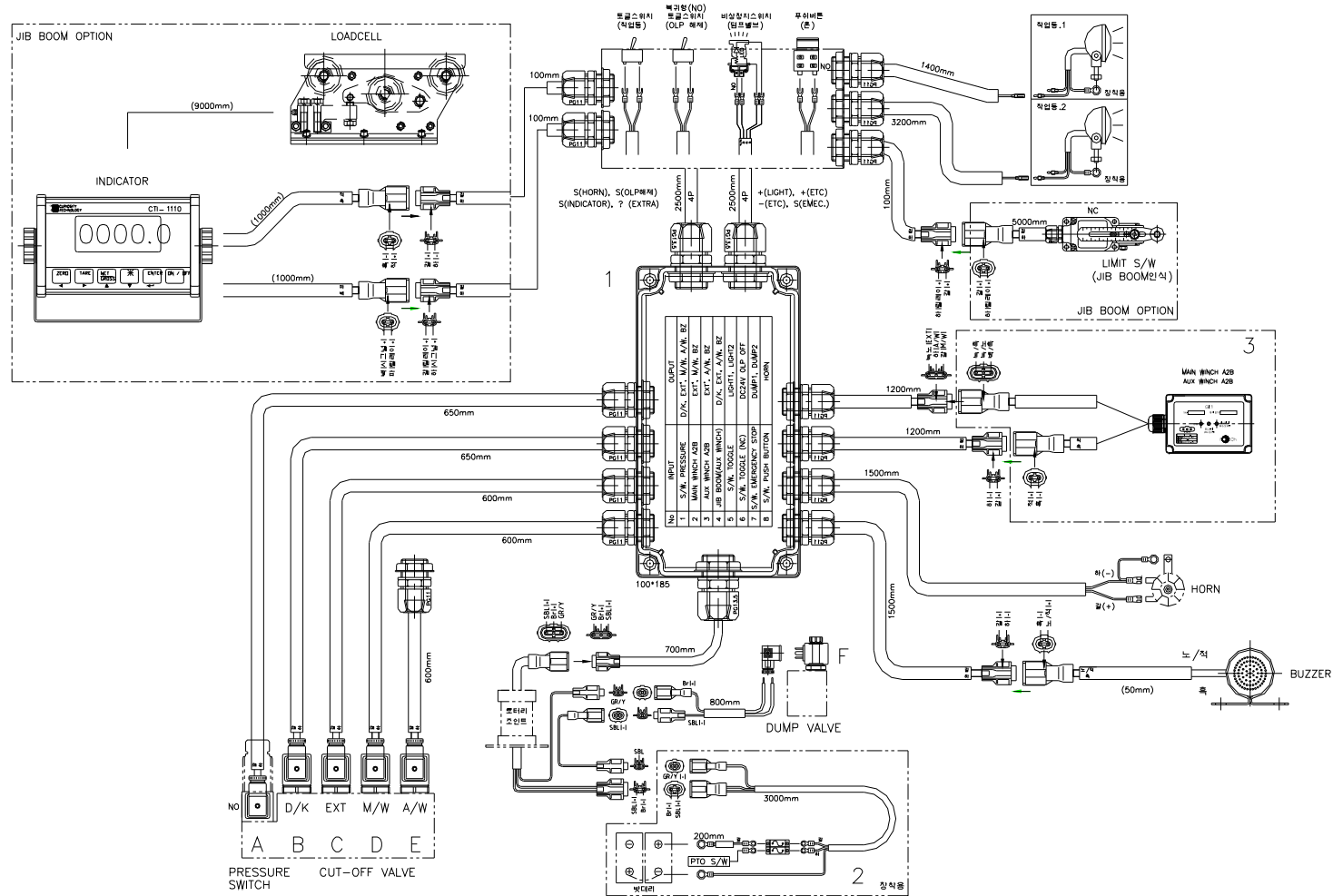
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20	112768401	로고 라벨 LABEL, LOGO	1						
21	P01-0115	콘트롤 스티커 STICKER, CONTROL	1						
22	P01-2130	위험 스티커 STICKER, WARNING	1						
23	P01-2131	하중 능력 스티커 STICKER, CAPACITY	1						
24	P01-2132	경적 스티커 STICKER, HORN	1						
25	P01-2133	비상 정지 스티커 STICKER, EMERGENCY STOP	1						
26	P01-2044	안전모 착용 스티커 STICKER, SAFETY HELMET	1						
27	161 8857	모델 네임 라벨 LABEL, MODEL NAME	1						

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전기 배선도 ELECTRIC WIRING DIAGRAM

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전기 배선도
ELECTRIC WIRING DIAGRAM

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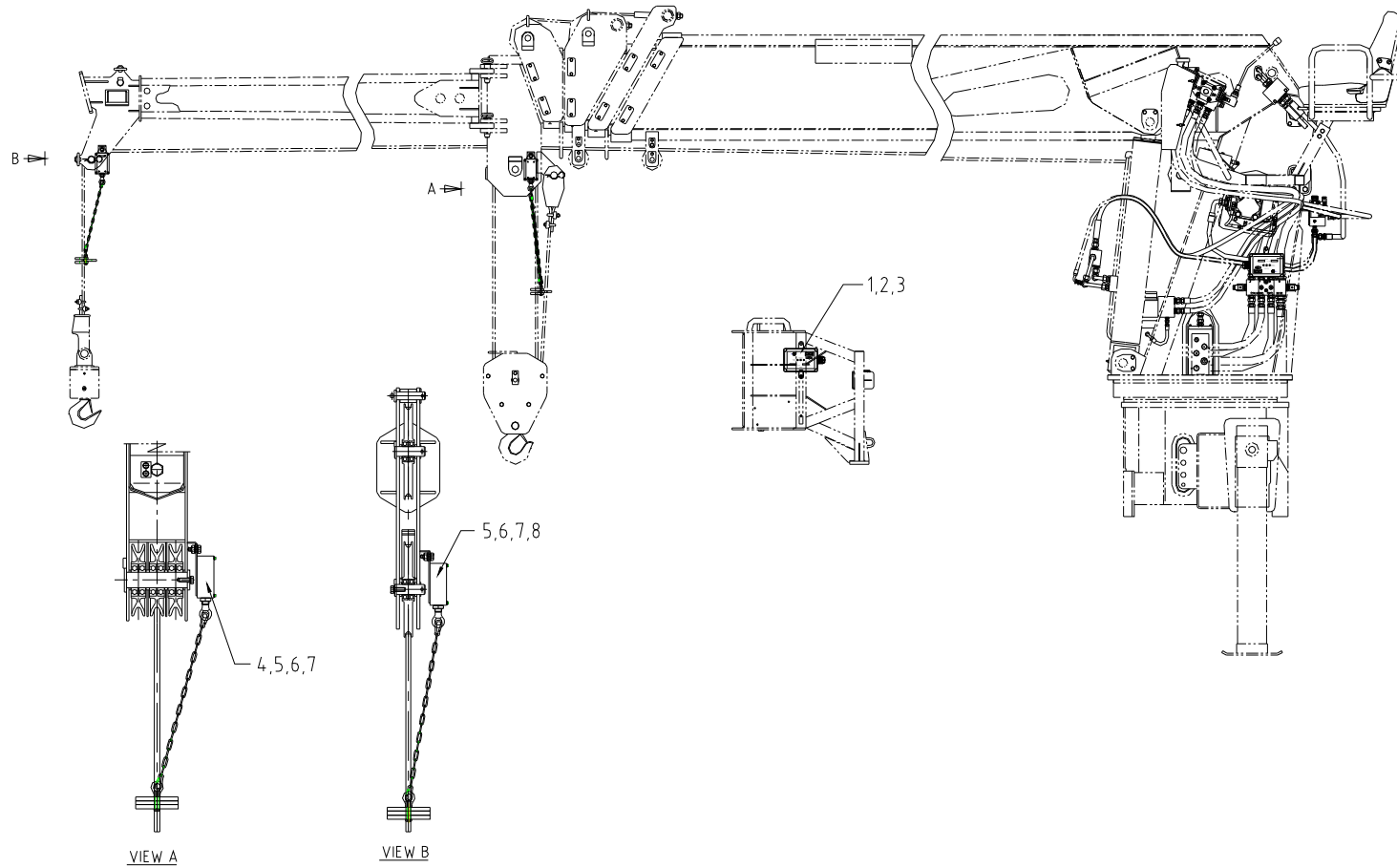
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-	E00-0114	전기 배선도 ELECTRIC WIRING DIAGRAM	1						
1	E01-0997	전기 배선 ELEC. WIRING	1	생산용					
2	E01-0998	전기 배선 ELEC. WIRING	1	장착용					
3	A01-2519	무선 A2B 시팅 WIRELESS A2B SETTING	1						

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무선 A2B 시팅
WIRELESS A2B SETTING

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무선 A2B 시팅
WIRELESS A2B SETTING

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번호 No.	부품 번호 Part No.	품명 Description	수량 Q`ty	비고 Remarks	번호 No.	부품 번호 Part No.	품명 Description	수량 Q`ty	비고 Remarks
-	A01-2519	무선 A2B 시팅 WIRELESS A2B SETTING	1						
1	E01-1502	A2B 수신기 RECEIVER, A2B	1	3-SIGNAL, WIRELESS					
2	2110858	육각 머리 볼트 BOLT, HEX. HEAD	1	BA8×14					
3	S01-0005	셀프 로킹 너트 NUT, SELF LOCKING	1	M8					
4	E01-1025	A2B 송신기 TRANSMITTER, A2B	1	MAIN WINCH					
5	3111126	육각 너트 NUT, HEX.	2	NA12					
6	2111527	육각 머리 볼트 BOLT, HEX. HEAD	2	BA12×30					
7	3511121	평 와셔 WASHER, PLAIN	4	WP12					
8	E01-1302	A2B 송신기 TRANSMITTER, A2B	1	AUX. WINCH					

SPARE PARTS LIST

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