

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 160TM 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

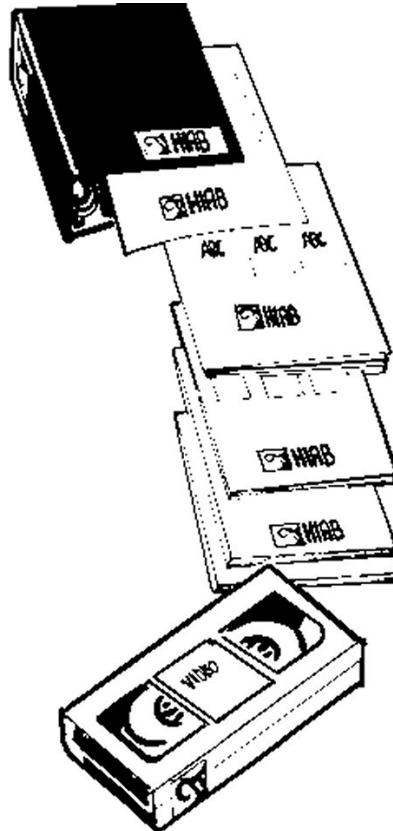
2-1. Structure

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

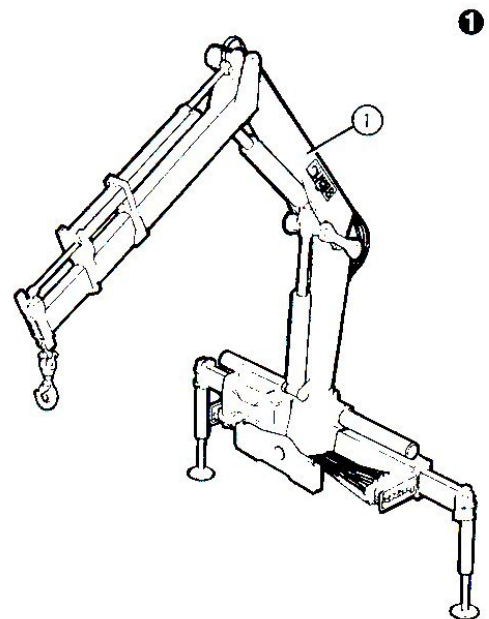
1. Do this
2. Do that

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

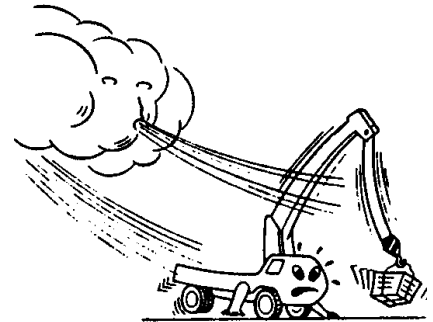
▲ DANGER

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.



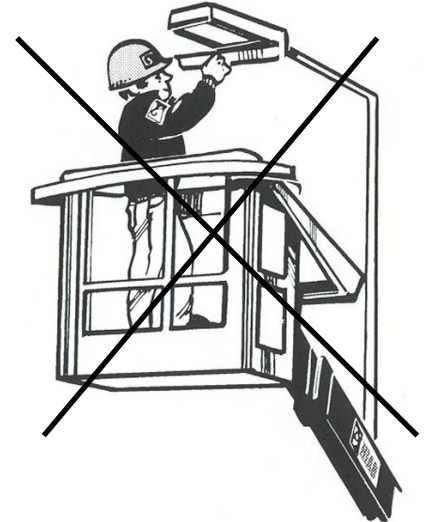
3-4. Use and maximum load

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.

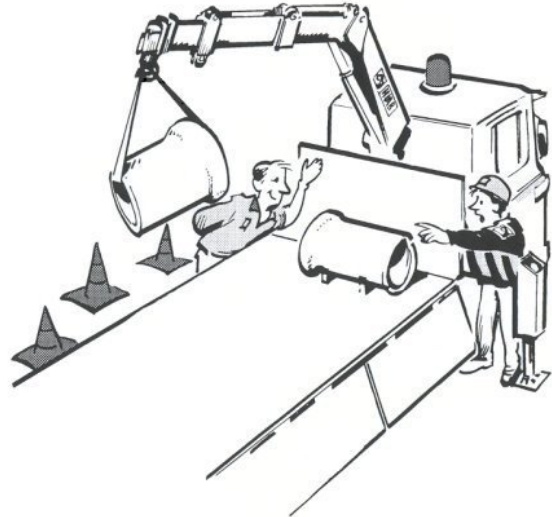
3-5. Preparation for use

▲ 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.

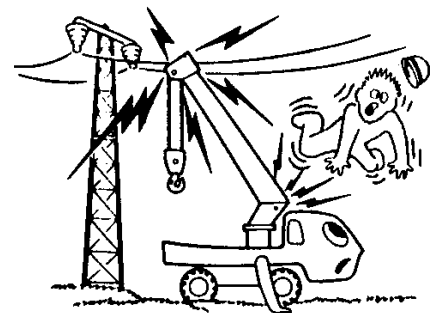


Table 1 : Minimum distance between crane and overhead electricity lines

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

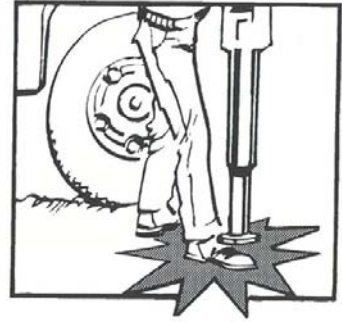
3-6-1. Starting crane operation

▲ DANGER

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

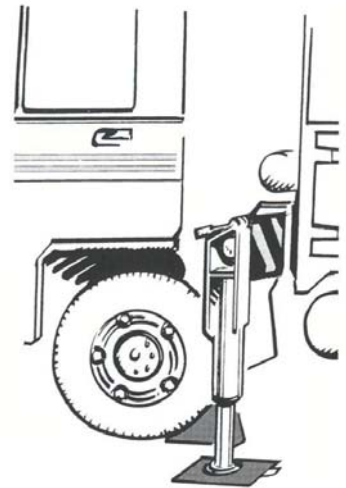
Operate the outrigger legs from the side of the legs concerned.

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.

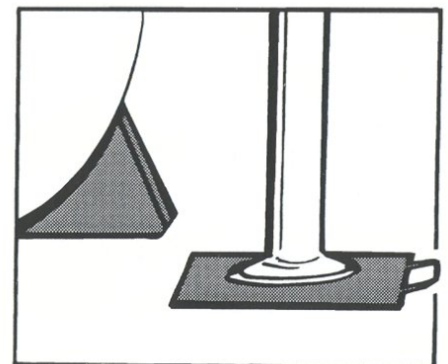


▲ DANGER

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.

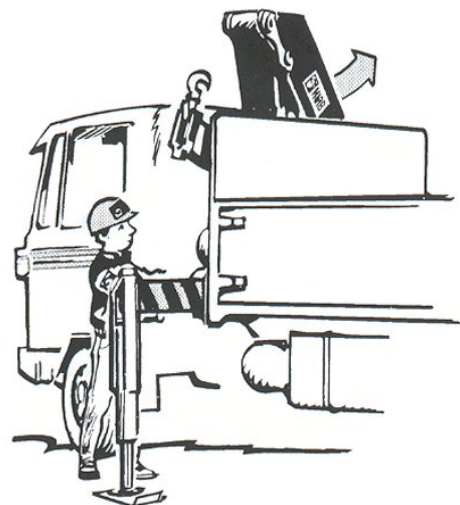
▲ **DANGER**

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

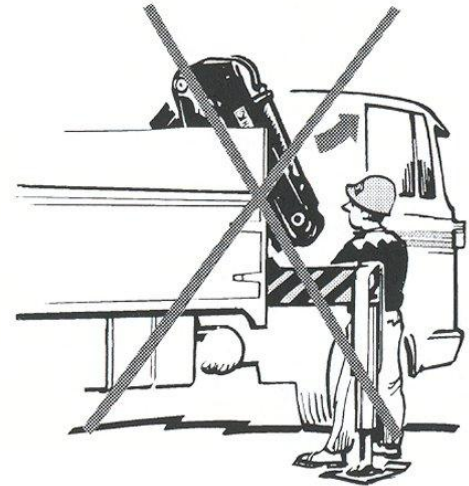


3-6-2. Crane operation

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.

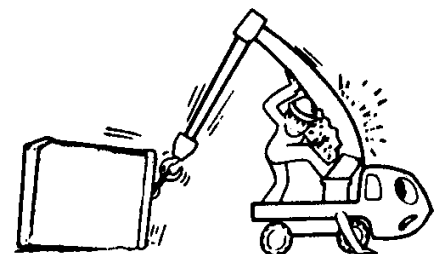
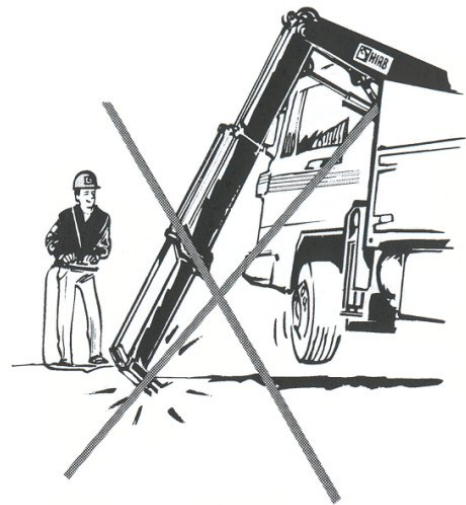
▲ Always lift the load from the ground before you start to slew. Do not tow the load over the ground. This can damage the boom system.

▲ 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.

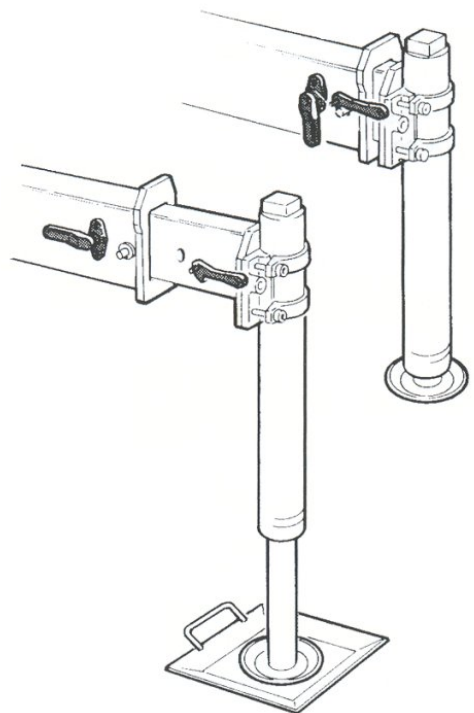
Otherwise you will damage the hydraulic system.

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
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 :

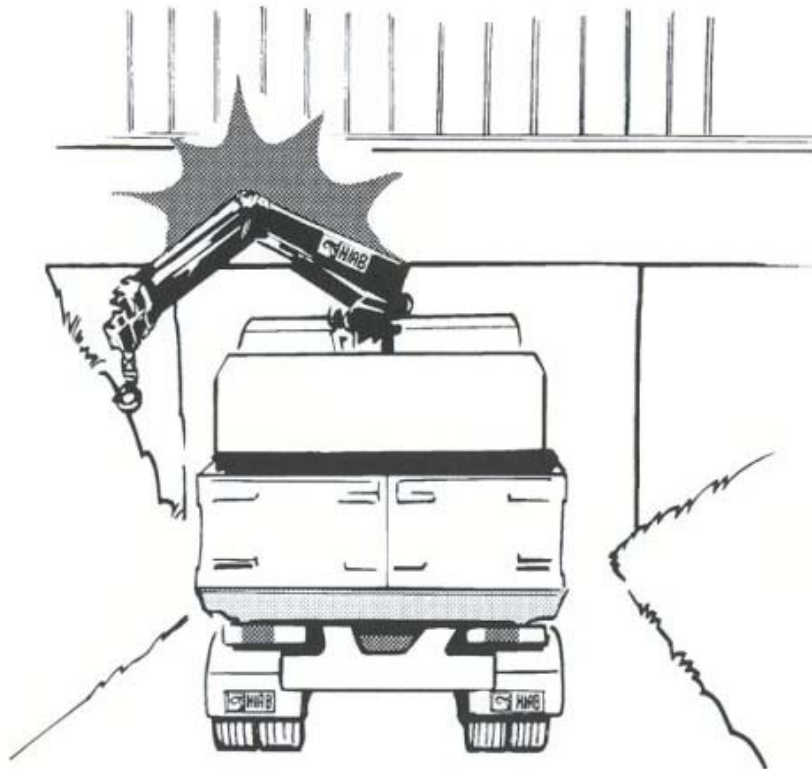
Check that you have no pump flow to the crane control valve.

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.

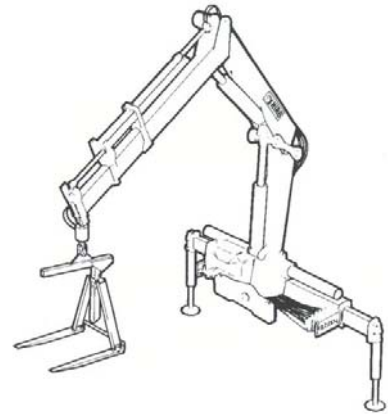


3-8. Use of lifting equipment

▲ 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.



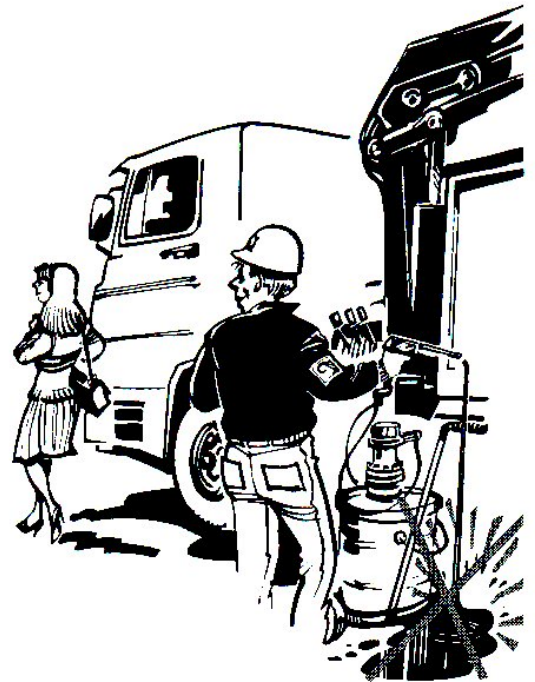
!NOTE

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.

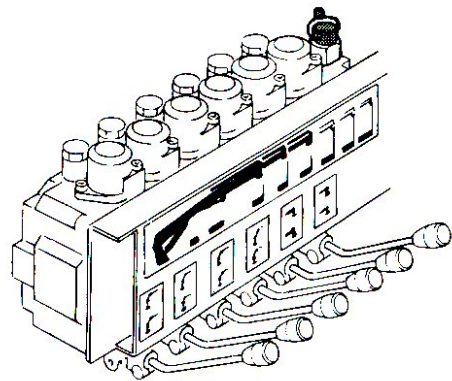
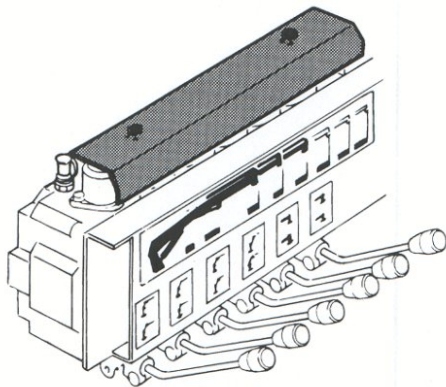
1. Disengage the P.T.O or power supply.
2. For further instructions see the Operation and Maintenance for your type of crane.

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.

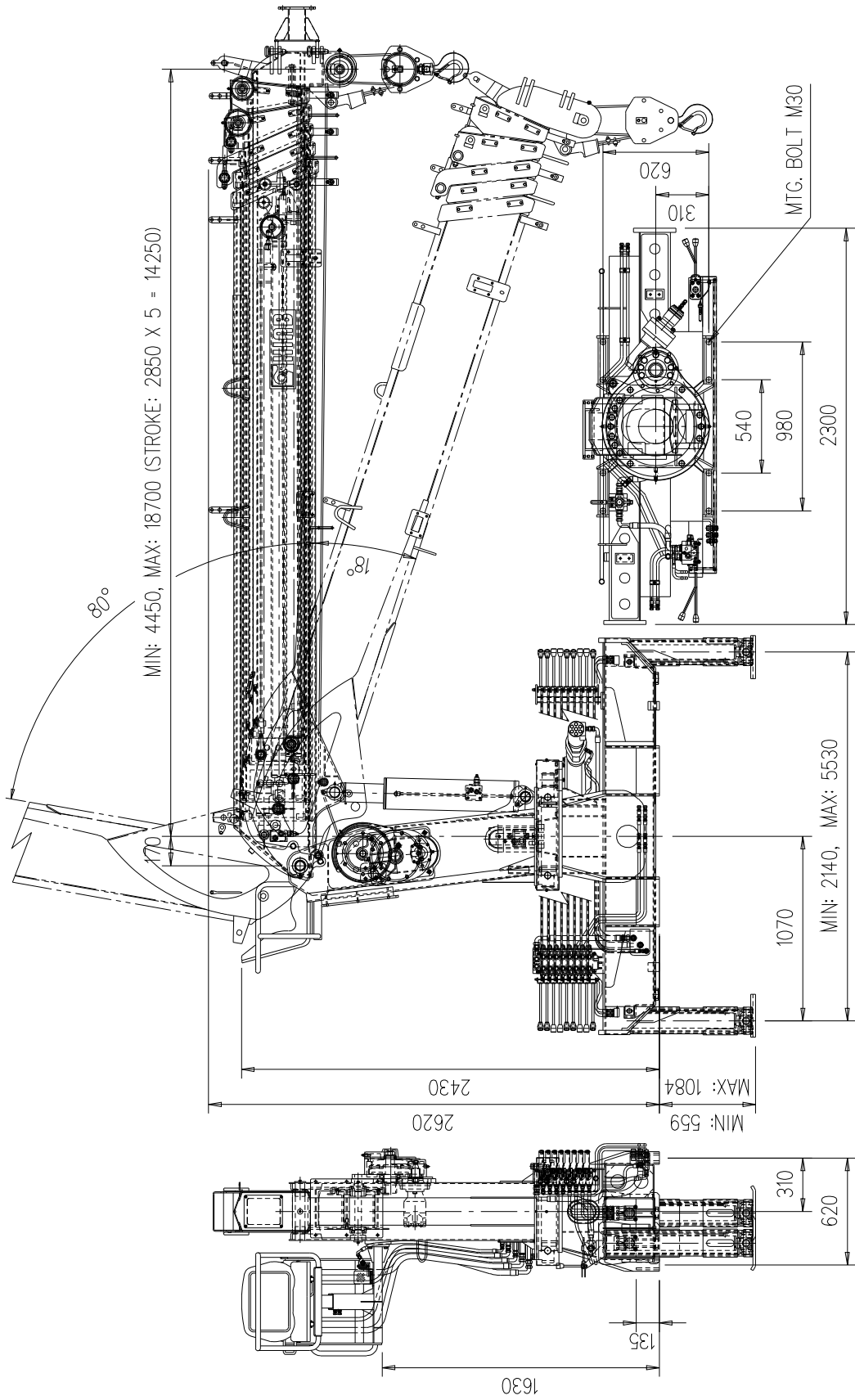


4. Technical description

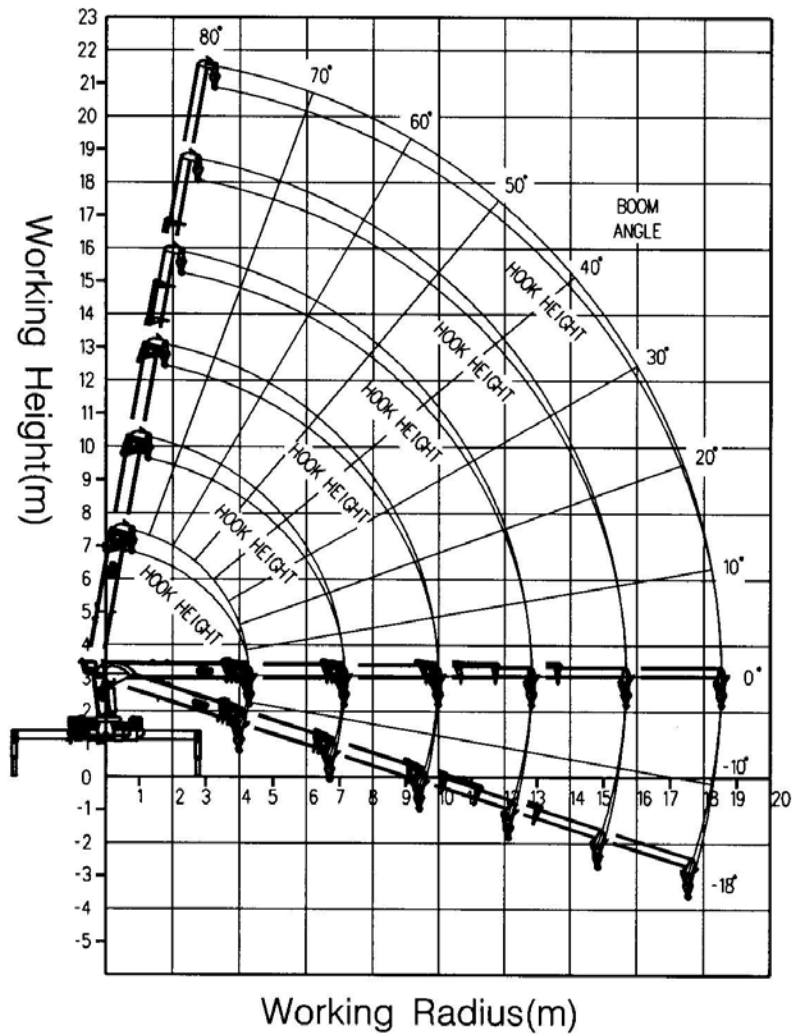
4 - 1 Specification

Description		Specification	Remarks
Lifting Capacity		15.0 ton-m	
Max. working Radius		18.7 m	
Outreach - Lifting Capacity		1.41 m - 6,500 kg 3.57 m - 3,170 kg 6.46 m - 1,740 kg 11.24 m - 930 kg 14.88 m - 610 kg 18.70 m - 320 kg	
Max. working height		19.9 m	
Rated oil Flow		56ℓ / min (1000 rpm)	
Working pressure		200 bar	
Boom	Type	Hexagonal, 6 sections	
	Lifting angle/speed	-18 ~ 80°/ 16 sec	
	Extension speed	14.25 m / 34 sec	
Winch	Type	Spur gear reduction type with mech. brake	
	Lifting capacity	6,500 kg (4 falls)	
	speed	min. 9.5m/min ~max.12m/mm	
Slewing	Type	Worm gear reduction type with hy'd brake	
	Angle	360 deg continue	
	Speed	2.0 rpm	
O / R Span		5.7 m	
Safety function		Counter balance valve Pilot check valve Pressure relief valve Hy'd swing brake Hook latch Auto winch brake	
Weight		2,880 kg	with support legs

4 - 2 Outline view

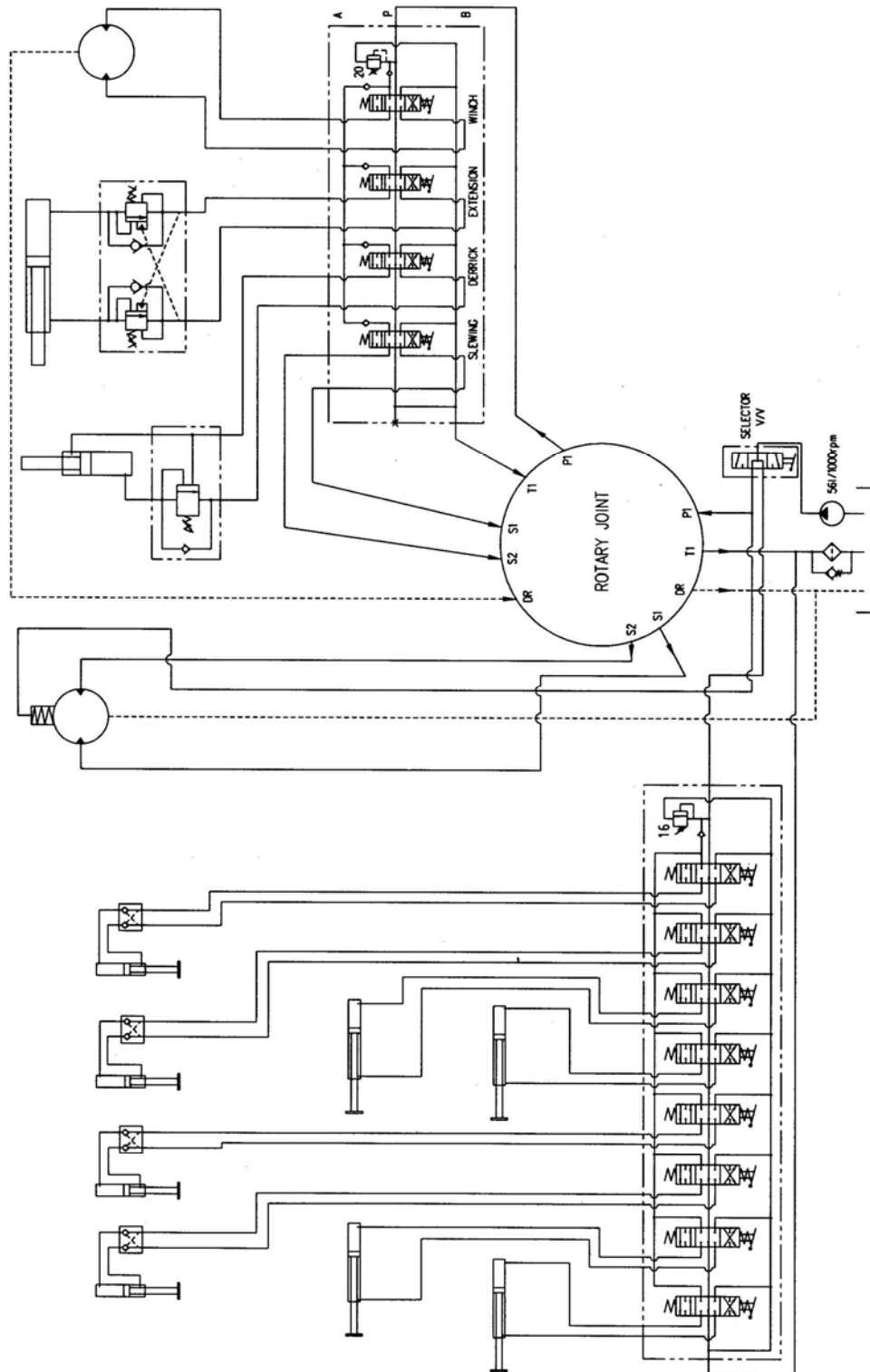


4 - 3 Lifting capacity table & working radius



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°	0.63	6,500	1.13	6,000	1.62	4,500	2.12	2,400	2.61	1,800	3.11	920
70°	1.41	6,500	2.38	4,380	3.36	3,050	4.33	2,310	5.31	1,800	6.28	920
60°	2.14	5,730	3.57	3,170	4.99	2,170	6.42	1,620	7.84	1,270	9.27	920
50°	2.80	4,750	4.63	2,560	6.46	1,740	8.30	1,280	10.13	980	11.96	800
40°	3.37	4,170	5.55	2,200	7.74	1,480	9.92	1,080	12.10	820	14.29	640
30°	3.83	3,760	6.30	1,950	8.77	1,290	11.24	930	13.70	700	16.17	540
20°	4.17	3,450	6.85	1,750	9.53	1,150	12.21	820	14.88	610	17.56	460
10°	4.38	3,160	7.19	1,580	9.99	1,020	12.80	720	15.61	530	18.41	400
0°	4.45	2,870	7.30	1,400	10.15	890	13.00	620	15.85	440	18.70	320
-10°	4.38	2,500	7.19	1,170	9.99	720	12.80	490	15.61	340	18.47	240
-18°	4.22	2,120	6.93	940	9.64	550	12.36	360	15.07	240	17.78	160

4 - 4 Hydraulic diagram

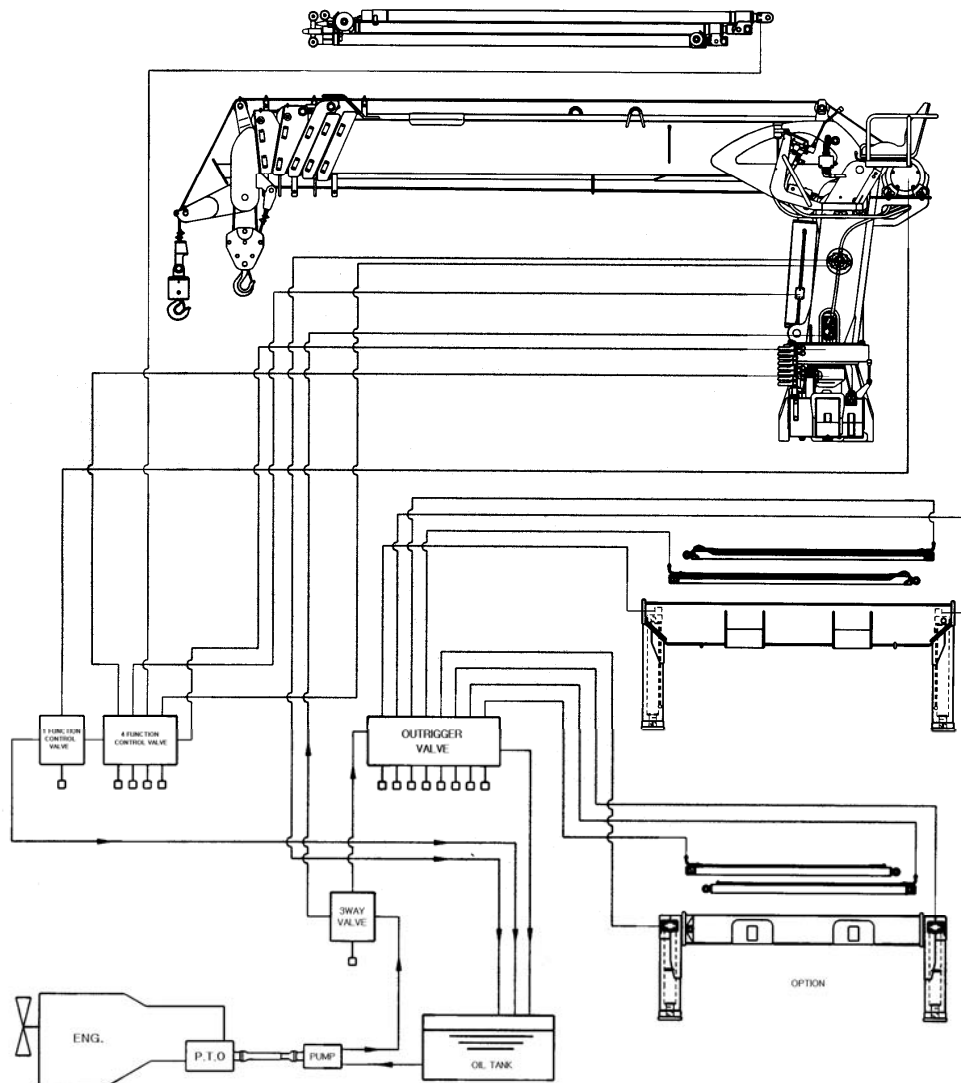


5. General description

5 - 1 Basic operation principle

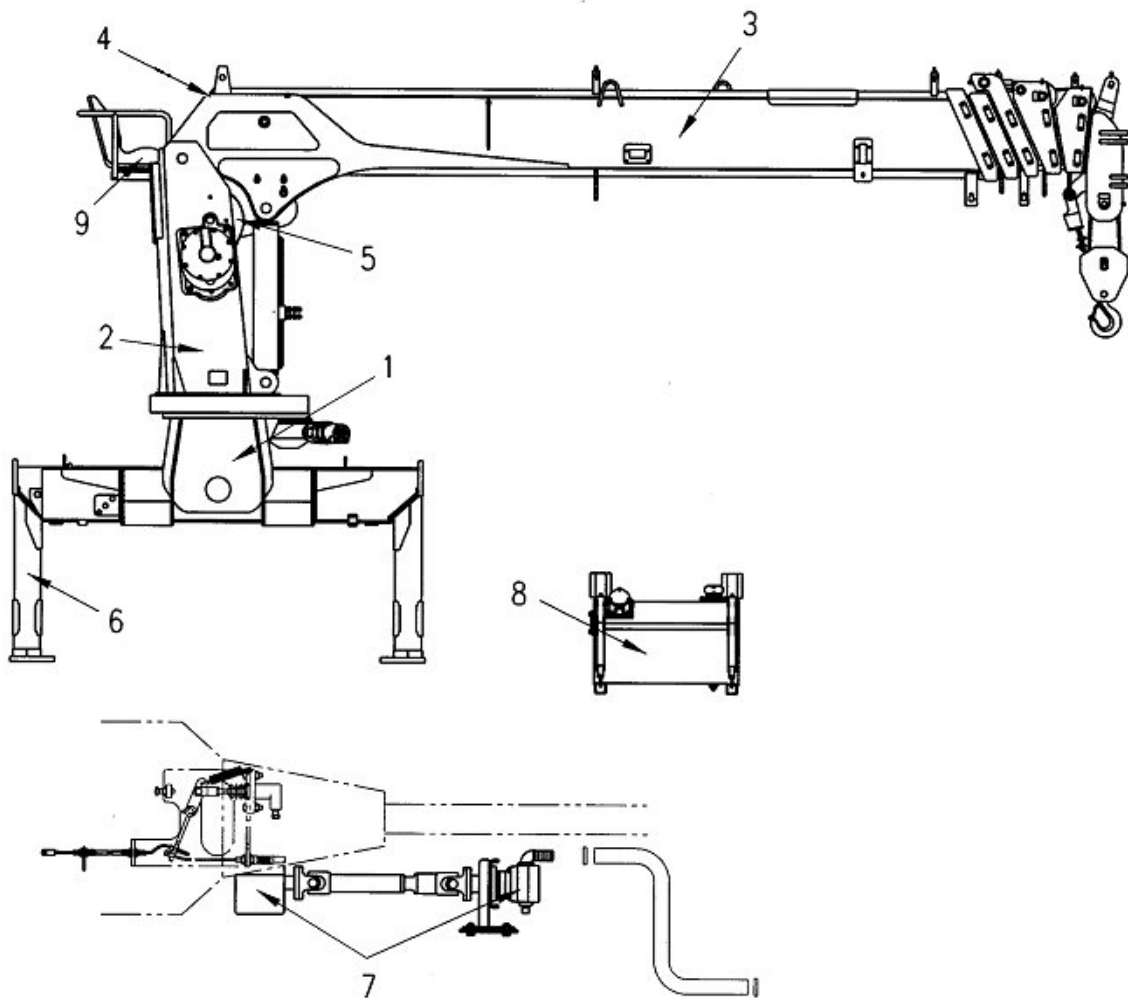
Hiab 160TM crane consists of mainly steel structures and hydraulic components.

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.



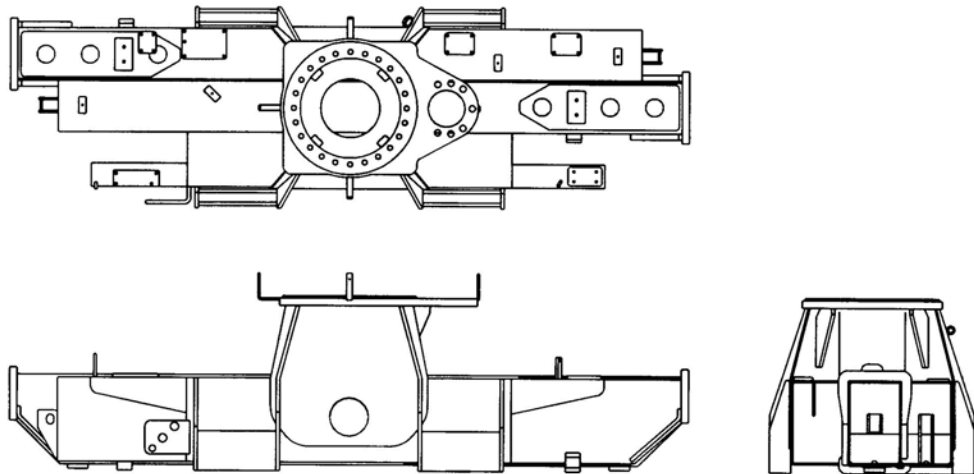
5 - 2 Main components

- 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.

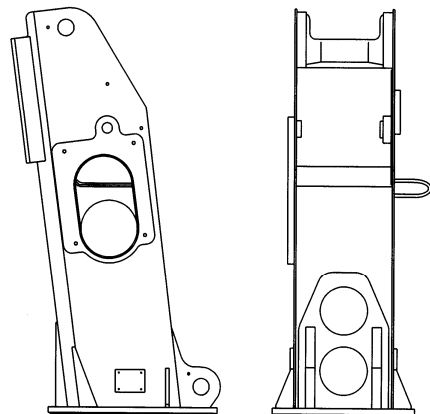
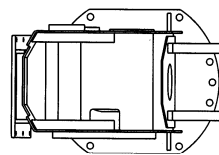


5 - 4 Column

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

The column supports the boom system via derrick cylinder.

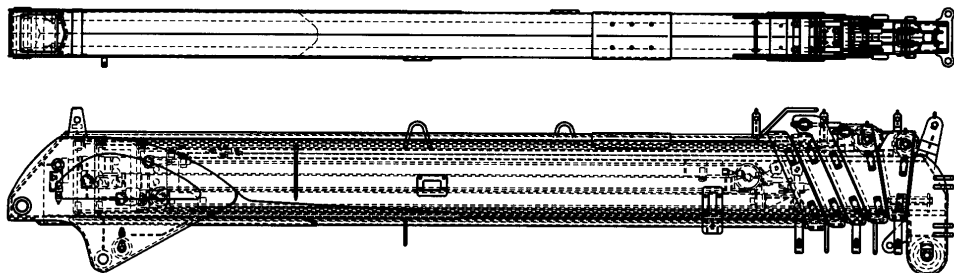
The winch system is mounted in the column structure.



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.



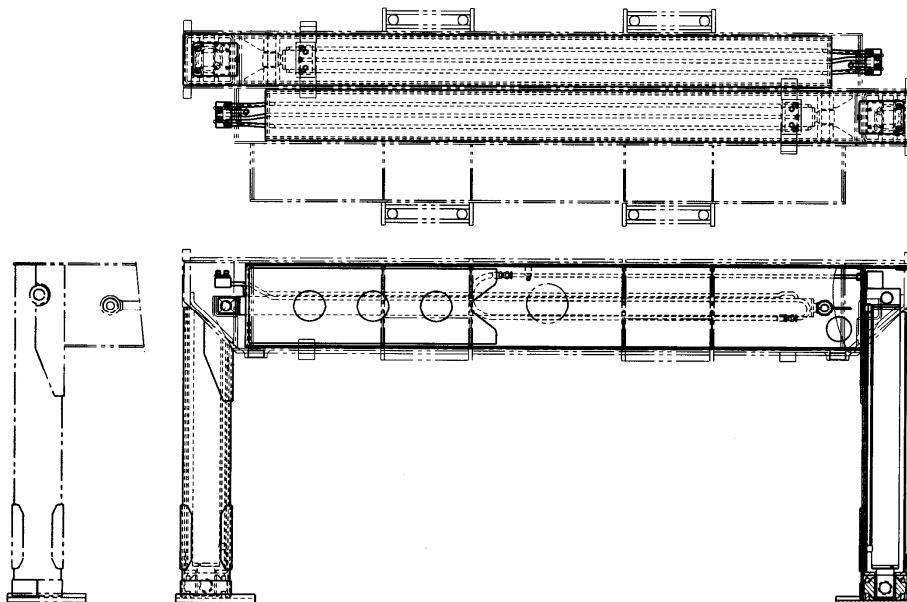
5 - 6 Control Valve

The Hiab 160TM stiff boom crane is equipped with two(2) 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.



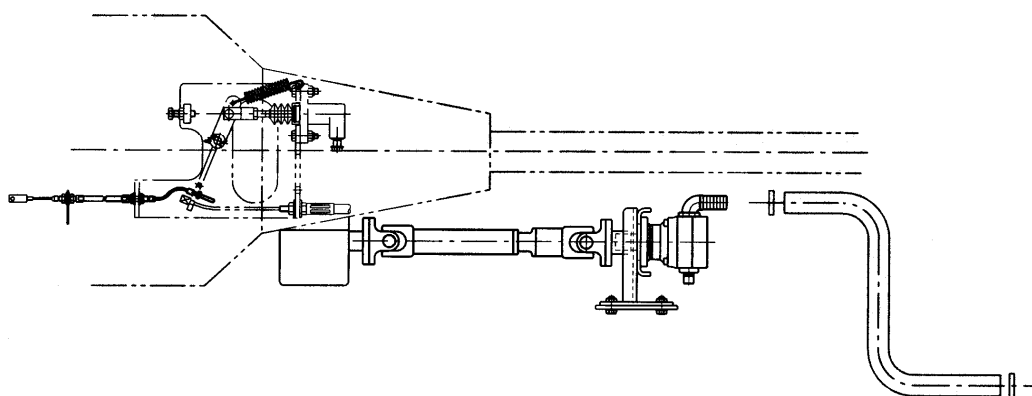
5 - 8 Winch

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 PTO & pump

The PTO is mounted 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.



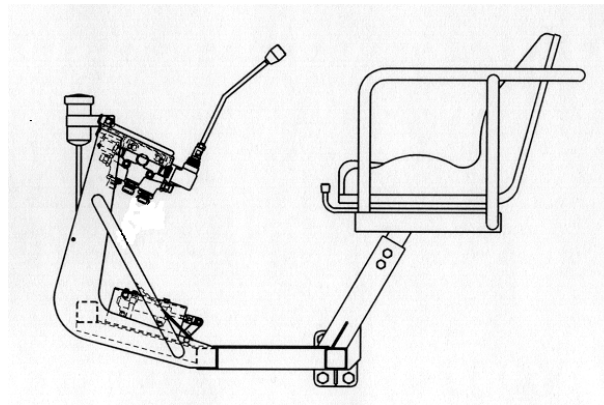
5 - 10 Oil Tank

The Hiab 160TM 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.

5 - 11 Top seat (option)

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 - 12 Anti two block system [Option]

When hook hit the limit switch, send signal to solenoid.

The wire rope up and extending boom were stopped in order to prevent over-winding.

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.

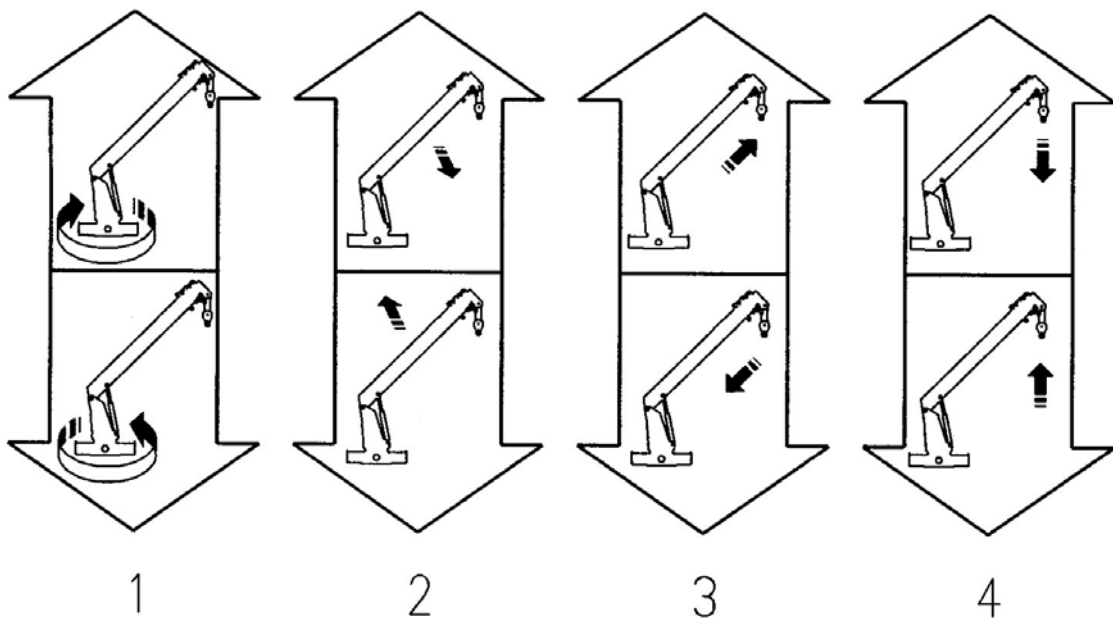
6 - 4 Operation of crane

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

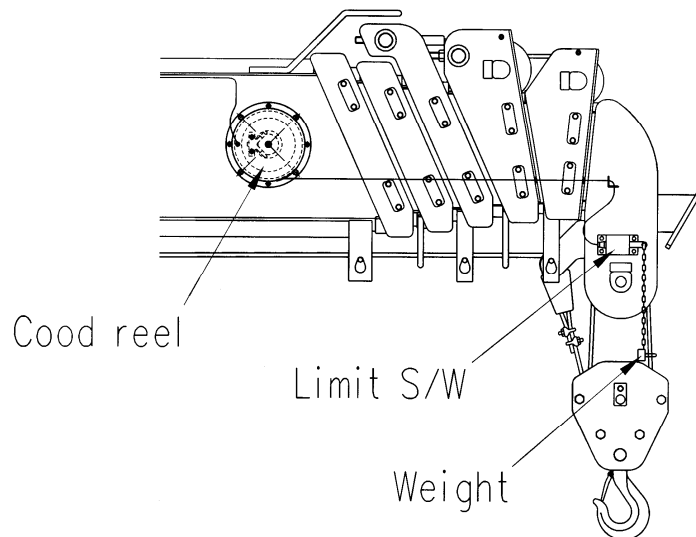
When you rotate the crane to the truck cab position, be careful about the stability.

Never slew until the load is clear of the ground.

6 - 5 Overwinding alarm

Hiab 160TM is equipped with an overwinding 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 overwinding alarm switch.
- If the alarm is activated, retract the boom or lower the hook.
- After operating the crane, turn off the overwinding alarm switch.

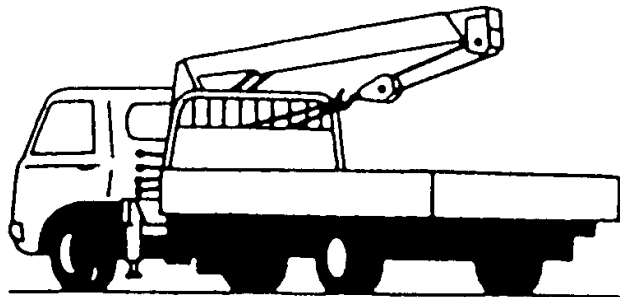


(note) Do not shorten the wire length.

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

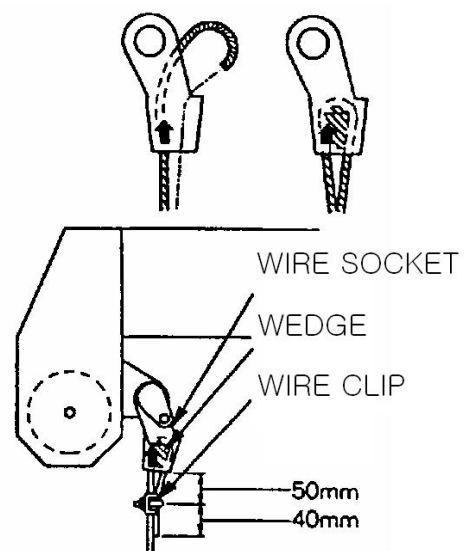
1) How to fit the wire rope

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 the in 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

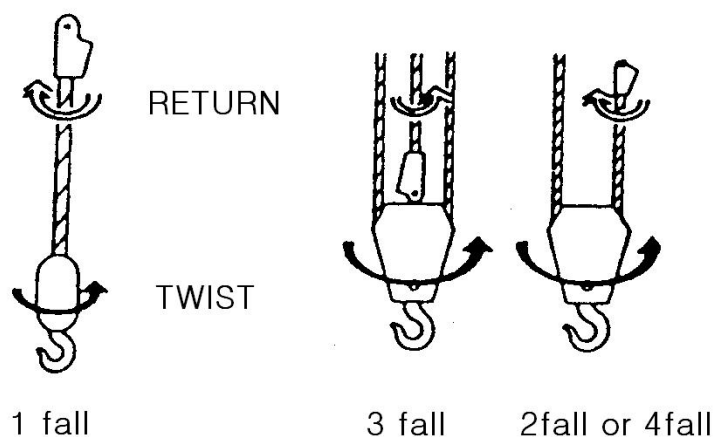
- Hoist a load so that the wire ropes will be tense

- 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.



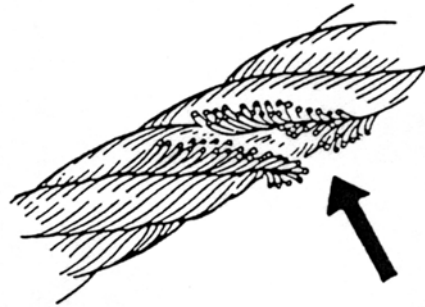
3) How to look after the winch rope

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.

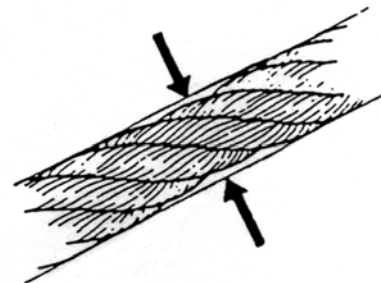
However, the following safety rules applying to winch ropes can be followed.

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

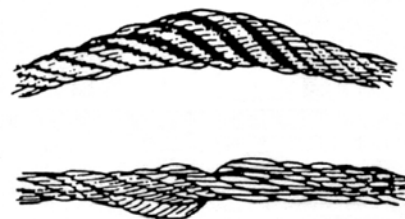
- When 5 % of wires in any length of ten rope diameters are broken, worn or corroded



- 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.

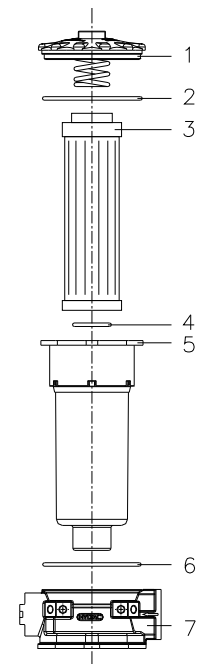
8 - 4 Changing a filter insert

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.

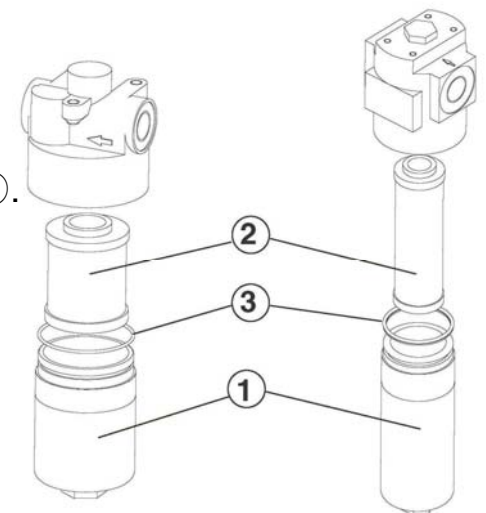
Replacing the return oil filter insert

- 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.

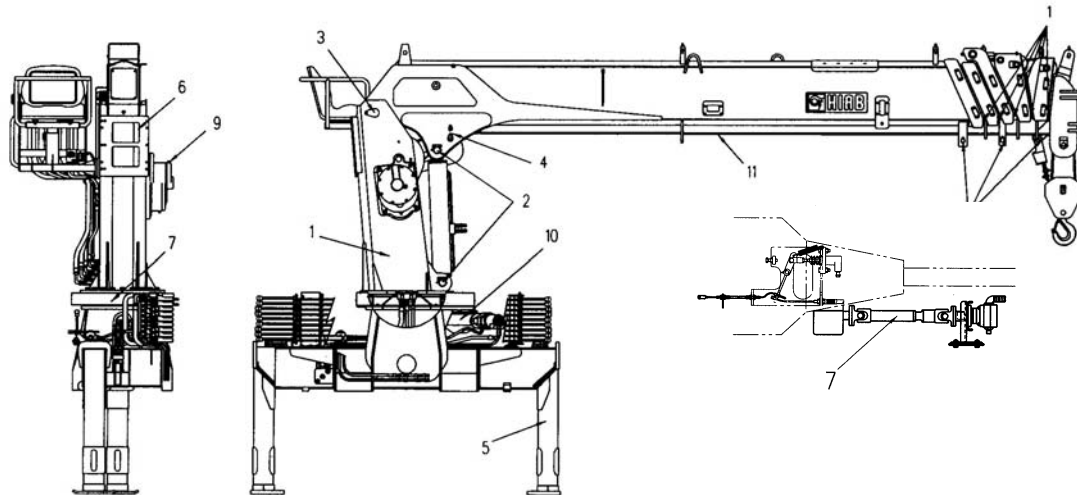
The hydraulic system and the hydraulic fluid are matched in respect of lubricating performance, effect on the seals and other materials, and non-inflammability. For this reason, do not mix different types of hydraulic fluid, such as mineral oils, synthetic fluids and water-based fluids, and never adulterate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

Recommendable oil(or equivalents)

- Shell Tellus oil T 46
- Mobil DTE 15M
- Esso Univis 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 ● Clean the strainer ● Realign ● 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	<ul style="list-style-type: none"> ● 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 2	0.3 ~ 1.5 1.6 ~ 3.3	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
3 4	3.4 ~ 5.4 5.5 ~ 7.9	Moderate wind	Leaves and twigs in continuous movement, small branches begin to move. Dust and paper begin to move over the ground
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.

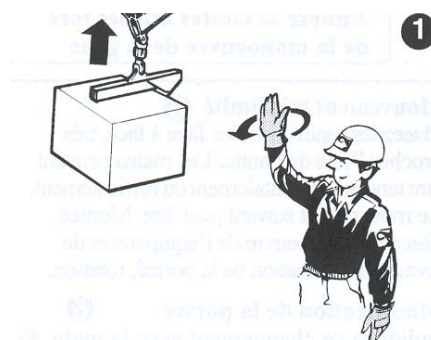
!NOTE

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

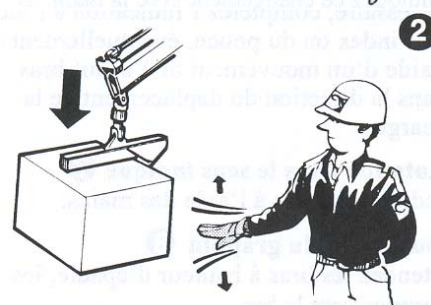
Rotate the fist about the wrist,
with the arm raised at an oblique angle.



Lower

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

If necessary, the entire arm may be moved.

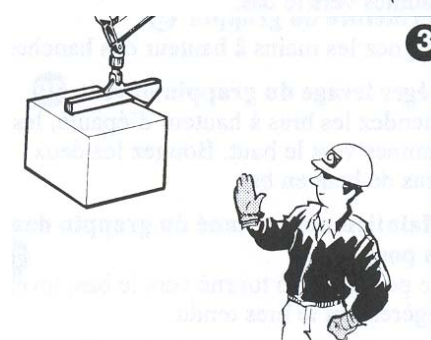


Stop all crane movements

Also : hold the load in position

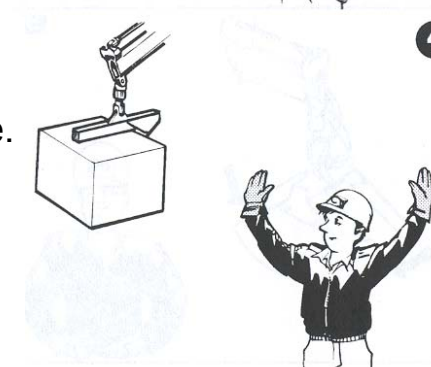
Raise the open hand, with the palm clearly visible, and the arm to shoulder height.

Keep the hand still.



Emergency stop for all movements by the crane.

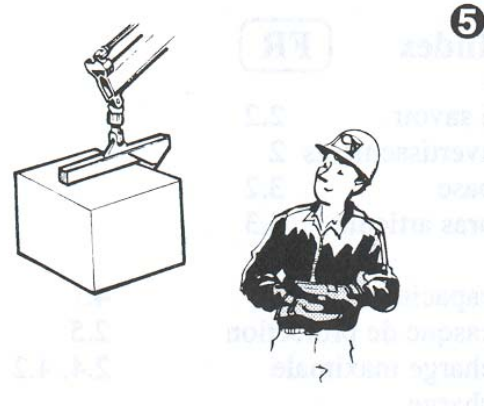
Raise the hands and the arms to an oblique angle.



Very short movement

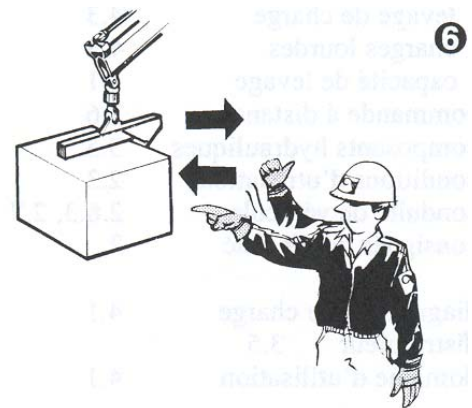
Place the hands a very short distance apart, with the palms facing each other.

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.



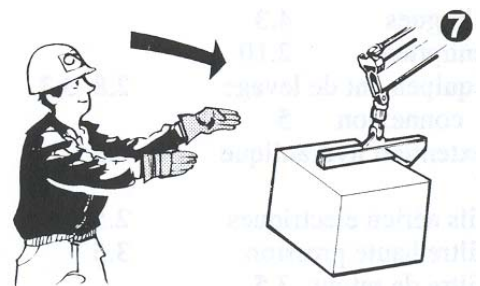
Change the reach

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.



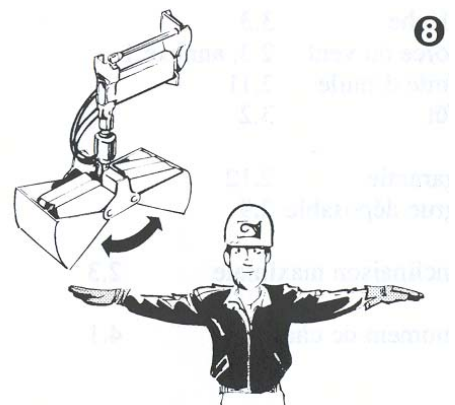
Turn in the direction indicated

Indicate the direction with the hands.



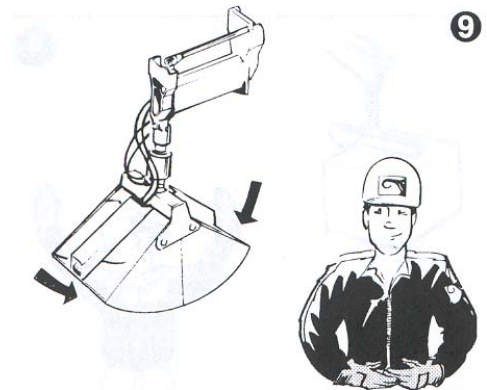
Open the grapple

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



Close the grapple

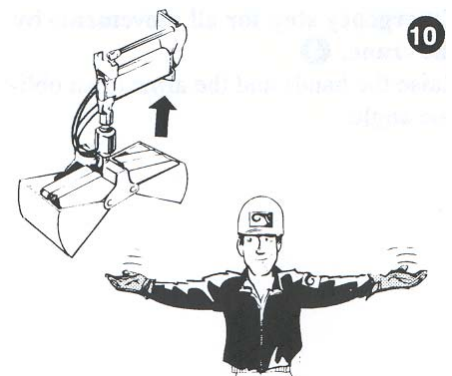
Move both hands close together.



Lift the open grapple a little

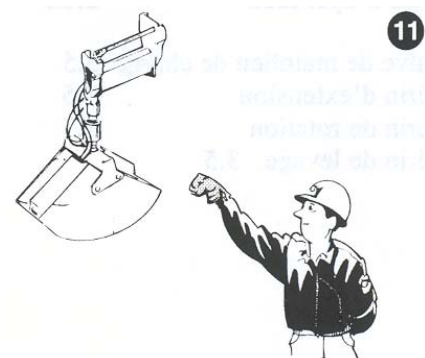
Extend both arms at shoulder height,
with the palms facing upwards.

Make vertical movements with
both arms outstretched.



Keep the grapple in position briefly

Raise the hand slightly drooping,
with the fist clenched.



EN



SPARE PARTS LIST

Cargotec Korea Ltd



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB160TM-6 0 : 1
2015. 04.

-	주요 부품 지시도 MAIN SUBDIVISIONS	HIAB160TM-6 - 0 : 1	10	3단 신축 실린더 3rd EXTENSION CYLINDER	HIAB160TM-6 - 10 : 0
1-1	크레인 총 결합도 HIAB160TM TOTAL ASS'Y	HIAB160TM-6 - 1-1 : 1	11	쉬브 결합체 SHEAVE ASS'Y	HIAB160TM-6 - 10 : 0
1-2	크레인 총 결합도 - 무선과관 HIAB160TM TOTAL ASS'Y - TRANSMITTER	HIAB160TM-6 - 1-2 : 1	12	원치 장치 WINCH SYSTM	HIAB160TM-6 - 12 : 1
2	베이스 및 컬럼 결합체 BASE & COLUMN ASS'Y	HIAB160TM-6 - 2 : 1	13	원치 감속기 결합체 WINCH REDUCER ASS'Y	HIAB160TM-6 - 13 : 0
3	베이스 배관도 BASE HOSE & PIPING	HIAB160TM-6 - 3 : 1	14	선회 감속기 SLEWING REDUCER	HIAB160TM-6 - 14 : 0
4	제어 장치 CONTROL SYSTEM	HIAB160TM-6 - 4 : 1	15	선회 모터 SLEWING MOTOR	HIAB160TM-6 - 15 : 0
5	아웃트리거 제어 밸브 OUTRIGGER CONTROL VALVE	HIAB160TM-6 - 5 : 1	16	카운터 발란스 밸브 COUNTER BALANCE VALVE (D)	HIAB160TM-6 - 16 : 0
6	붐 장치 BOOM SYSTEM	HIAB160TM-6 - 6 : 1	17	데릭 실린더 DERRICK CYLINDER	HIAB160TM-6 - 17 : 0
7	신축 붐 실린더 EXTENSION BOOM CYLINDER	HIAB160TM-6 - 7 : 0	18	로타리 조인트 결합체 ROTARY JOINT ASS'Y	HIAB160TM-6 - 18 : 1
8	1단 신축 실린더 1st EXTENSION CYLINDER	HIAB160TM-6 - 8 : 0	19	운전석 결합체 TOP SEAT ASS'Y	HIAB160TM-6 - 19 : 1
9	2단 신축 실린더 2nd EXTENSION CYLINDER	HIAB160TM-6 - 9 : 0	20	운전석 배관도 TOP SEAT HOSES	HIAB160TM-6 - 20 : 1

SPARE PARTS LIST



주요 부분 지시도
MAIN SUBDIVISIONS

HIAB160TM-6 0 : 1
2015. 04.

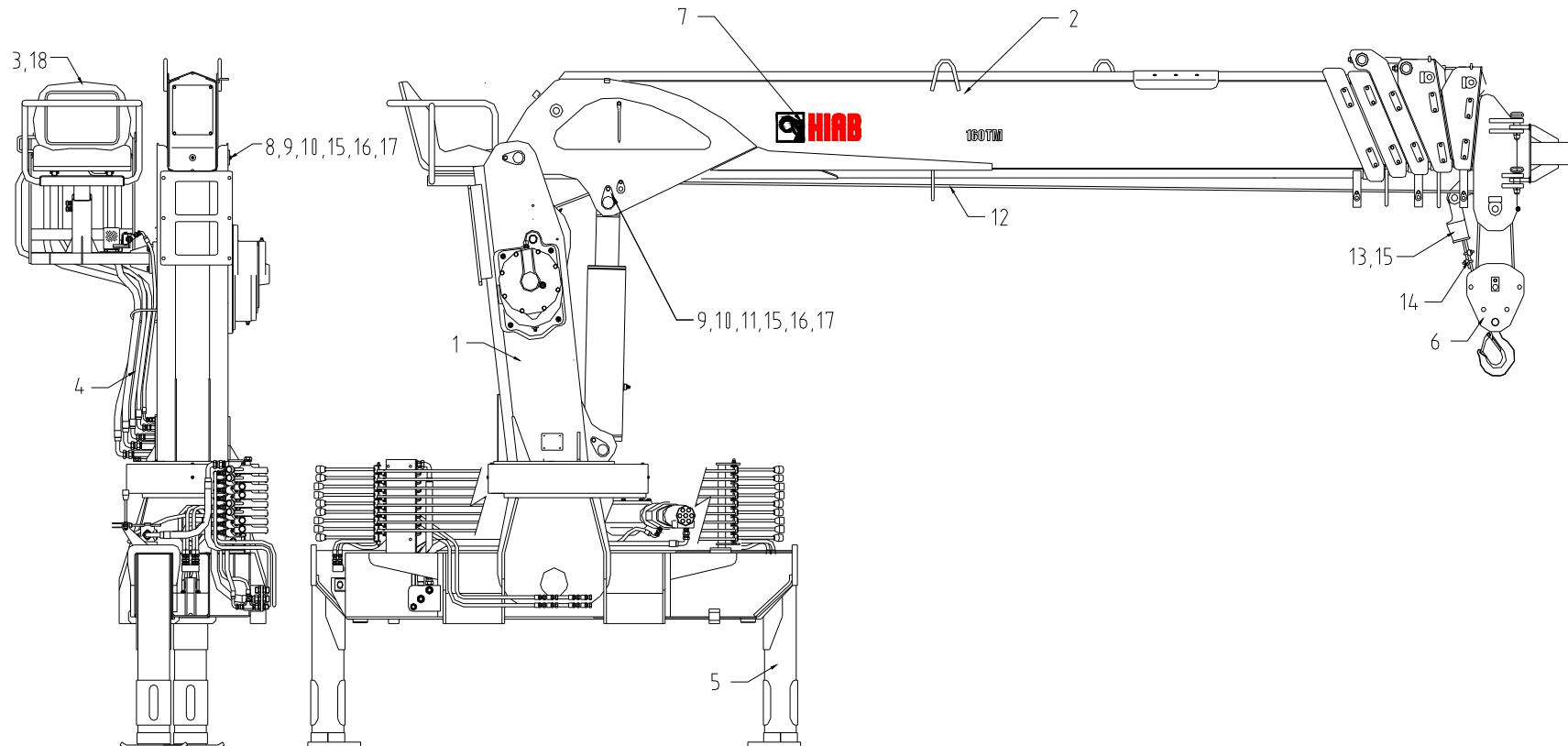
21	주 제어 밸브 MAIN CONTROL VALVE	HIAB160TM-6 - 21 : 0	31-2	전기 배선도 - 무선과권 ELECTRIC WIRING DIAGRAM - TRANSMITTER	HIAB160TM-6 - 31-2 : 1
22	아웃트리거 장치 OUTRIGGER SYSTEM	HIAB160TM-6 - 22 : 1	32	전기 와이어 결합체 ELECTRIC WIRE ASS'Y	HIAB160TM-6 - 32 : 1
23	아웃트리거 실린더 OUTRIGGER CYLINDER	HIAB160TM-6 - 23 : 1	33-1	전기 결합체 ELECTRIC ASS'Y	HIAB160TM-6 - 33-1 : 1
24	사이드 쉬프트 실린더 SIDE SHIFT CYLINDER	HIAB160TM-6 - 24 : 0	33-2	전기 결합체 - 무선과권 ELECTRIC ASS'Y - TRANSMITTER	HIAB160TM-6 - 33-2 : 1
25	파일로트 체크 밸브 VALVE, PILOT CHECK (D)	HIAB160TM-6 - 25 : 0	34	오일 탱크 결합체 OIL TANK ASS'Y	HIAB160TM-6 - 34 : 0
26	후방 아웃트리거 결합체 (옵션) REAR OUTRIGGER ASS'Y (OPTION)	HIAB160TM-6 - 26 : 1	35	리턴 필터 FILTER, RETURN	HIAB160TM-6 - 35 : 0
27	후방 아웃트리거 실린더 (옵션) REAR OUTRIGGER CYLINDER (OPTION)	HIAB160TM-6 - 27 : 0			
28	후방 사이드 쉬프트 실린더 (옵션) REAR SIDE SHIFT CYLINDER (OPTION)	HIAB160TM-6 - 28 : 0			
29	파일로트 체크 밸브 (옵션) VALVE, PILOT CHECK (D) (OPTION)	HIAB160TM-6 - 29 : 1			
30	스티커 배열 STICKER ARRANGMENT	HIAB160TM-6 - 30 : 0			
31-1	전기 배선도 ELECTRIC WIRING DIAGRAM	HIAB160TM-6 - 31-1 : 1			

SPARE PARTS LIST



크레인 총 결합체
HIAB160TM TOTAL ASS'Y

HIAB160TM-6 1-1 : 1
2015. 04.



SPARE PARTS LIST



크레인 총 결합체
HIAB160TM TOTAL ASS'Y

HIAB160TM-6 1-1 : 1
2015. 04.

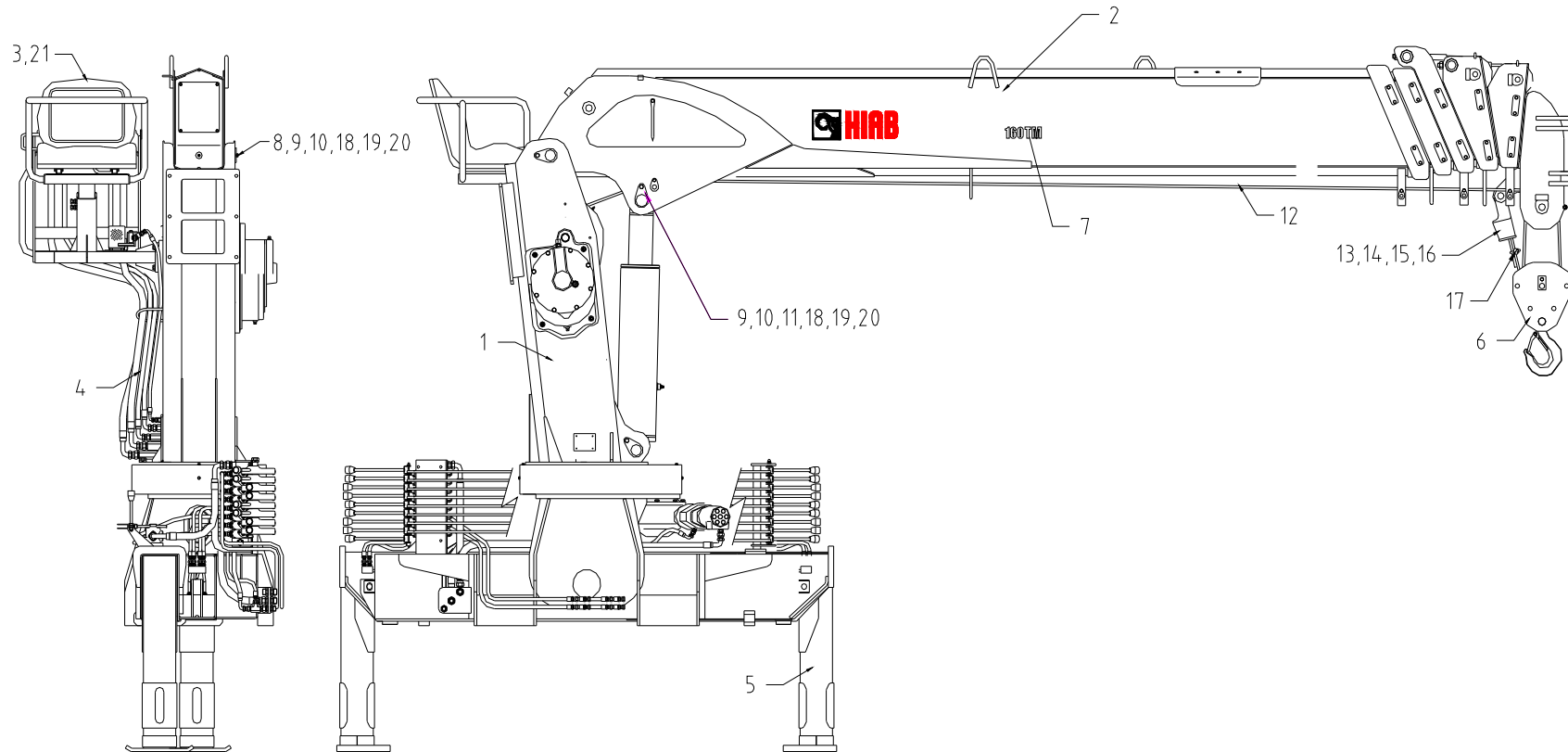
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-	A00-0394	크레인 총 결합체 HIAB160TM TOTAL ASS'Y	1		10	3613101	스프링 와셔 WASHER, SPRING	2	WS10
1	A01-4221	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	1		11	TA-2003	축 SHAFT	1	Φ55×242L
2	A01-4222	붐 시스템 BOOM SYSTEM	1		12	TA-2004	와이어 로프 ROPE, WIRE	1	Φ10×110000
3	A01-0538	탑 시트 결합체 TOP SEAT ASS'Y	1		13	A02-1264	소켓 결합체 SOCKET ASS'Y	1	
4	A01-0794	탑 시트 호스 결합체 TOP SEAT HOSE ASS'Y	1		14	N01-1722	와이어 클립 CLIP, WIRE	2	3/8 inch
5	OR1-3001	아웃트리거 시스템 OUTRIGGER SYSTEM	1		15	TA-6002	플레이트 PLATE	2	t=9
6	A02-2565	쉬브 결합체 SHEAVE ASS'Y	1		16	2111537	육각 머리 볼트 BOLT, HEX. HEAD	2	BA12×35
7	A01-0516	스티커 배열 STICKER, ARRANGEMENT	1		17	3612121	스프링 와셔 WASHER, SPRING	2	WS12
8	TA-2002	축 SHAFT	1	Φ55×338L	18	E00-0116	전기 와이어 배선 ELECTRIC WIRE DIAGRAM	1	
9	2111206	육각 머리 볼트 BOLT, HEX. HEAD	2	BA10×25					

SPARE PARTS LIST



크레인 총 결합체 - 무선과권
HIAB160TM TOTAL ASS'Y - TRANSMITTER

HIAB160TM-6 1-2 : 1
2015. 04.



SPARE PARTS LIST



크레인 총 결합체 - 무선과권
 HIAB160TM TOTAL ASS'Y - TRANSMITTER

HIAB160TM-6 1-2 : 1
 2015. 04.

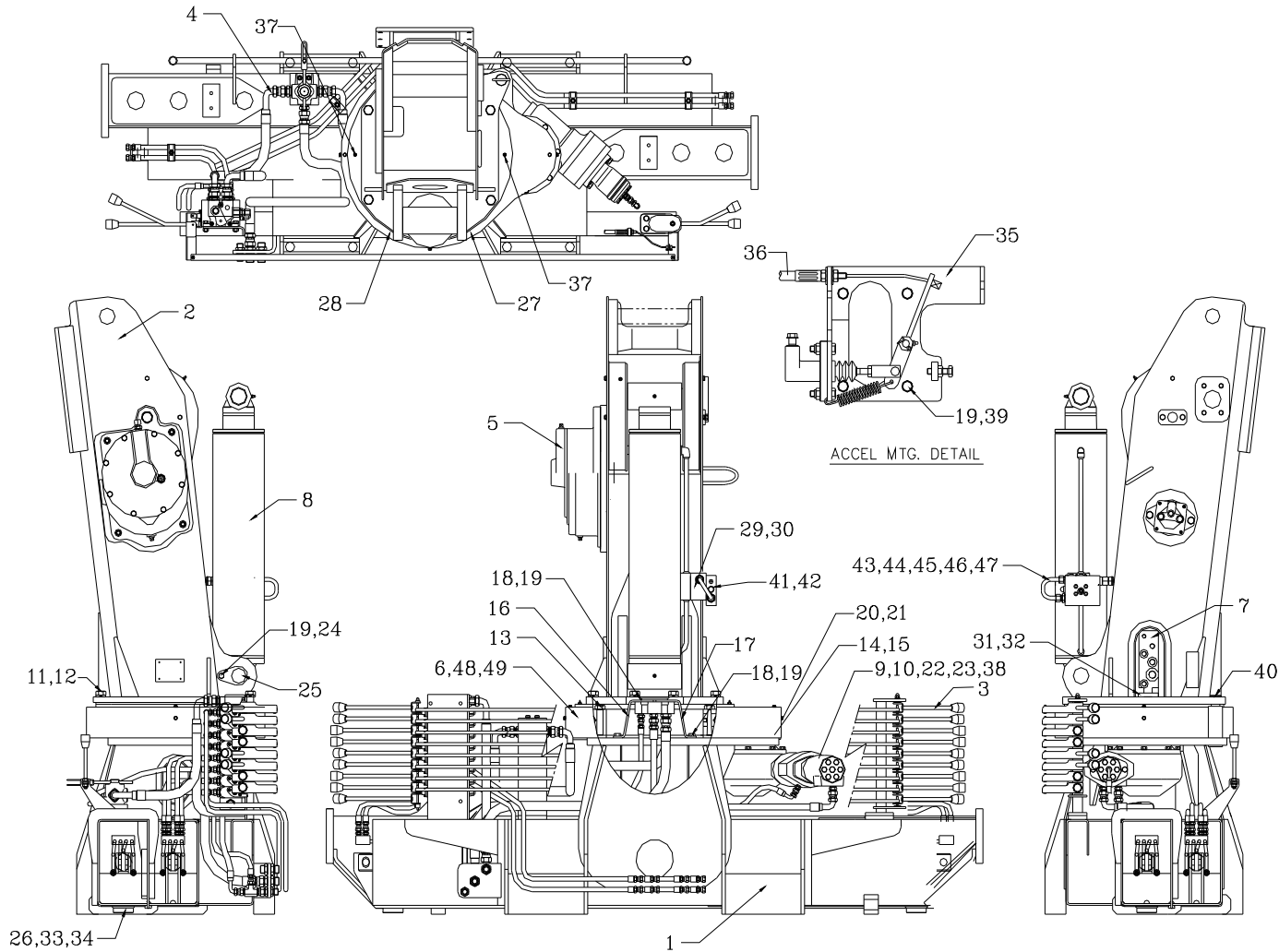
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-	A00-0444	크레인 총 결합체 HIAB160TM TOTAL ASS'Y	1		11	TA-2003	축 SHAFT	1	Φ55×242L
1	A01-4221	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	1		12	TA-2004	와이어 로프 ROPE, WIRE	1	Φ10×110000
2	A01-4222	붐 시스템 BOOM SYSTEM	1		13	S01-1611	소켓 결합체 SOCKET ASS'Y	1	
3	A01-0538	탑 시트 결합체 TOP SEAT ASS'Y	1		14	S01-5395	웨지 WEDGE	1	3/8"
4	A01-0794	탑 시트 호스 결합체 TOP SEAT HOSE ASS'Y	1		15	S01-1613	핀 PIN	1	
5	OR1-3001	아우트리거 시스템 OUTRIGGER SYSTEM	1		16	S01-0002	록 핀 PIN, LOCK	1	
6	A02-2565	쉬브 결합체 SHEAVE ASS'Y	1		17	N01-1722	와이어 클립 CLIP, WIRE	1	3/8 inch
7	A01-0516	스티커 배열 STICKER, ARRANGEMENT	1		18	TA-6002	플레이트 PLATE	2	t=9
8	TA-2002	축 SHAFT	1	Φ55×338L	19	2111537	육각 머리 볼트 BOLT, HEX. HEAD	2	BA12×35
9	2111206	육각 머리 볼트 BOLT, HEX. HEAD	2	BA10×25	20	3612121	스프링 와셔 WASHER, SPRING	2	WS12
10	3613101	스프링 와셔 WASHER, SPRING	2	WS10	21	E00-0120	전기 와이어 배선 ELECTRIC WIRE DIAGRAM	1	

SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.



SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.

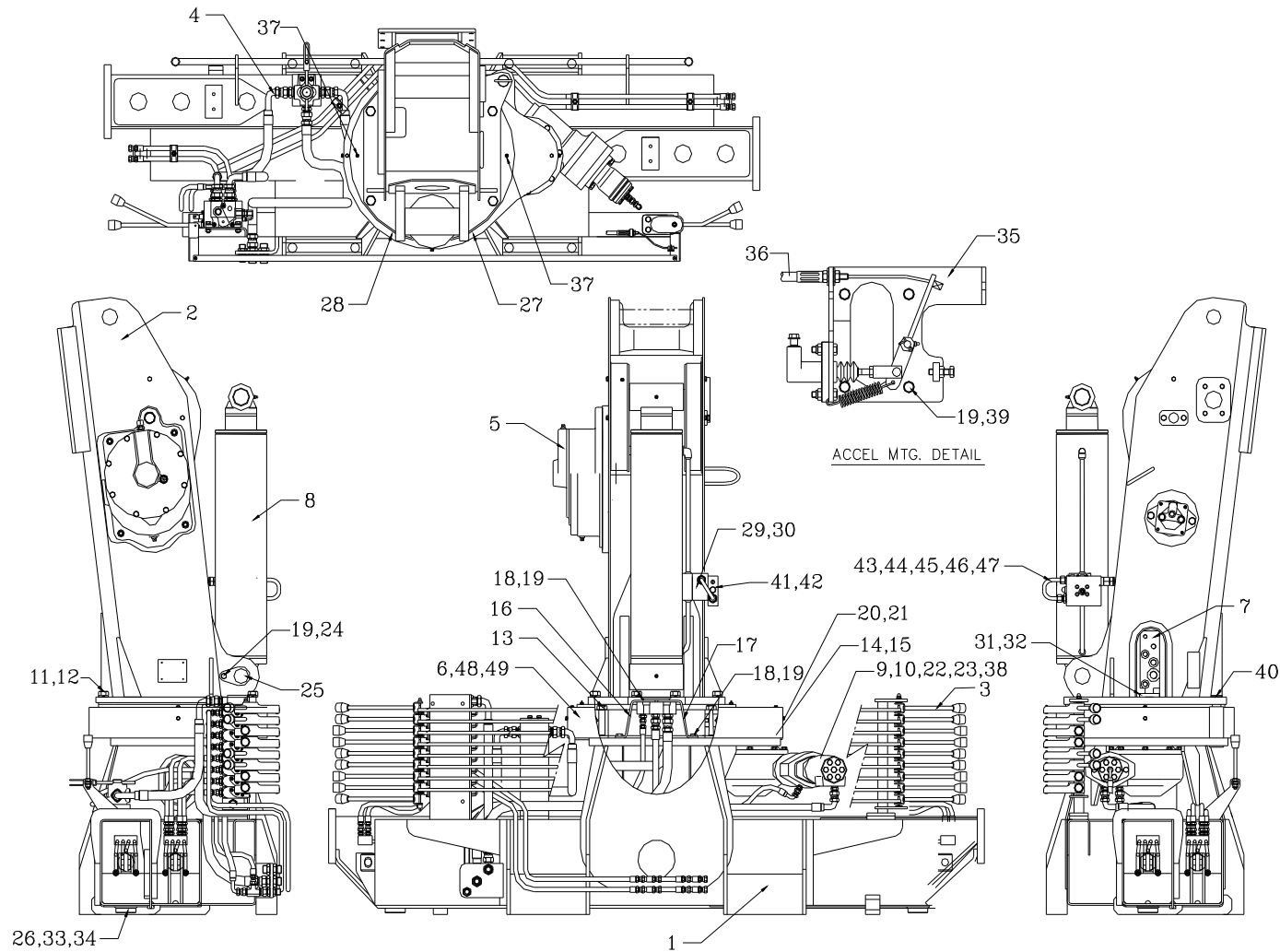
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-	A01-4221	베이스 & 칼럼 결합체 BASE & COLUMN ASS'Y	1		10	H02-0200	선회 모터 MOTOR, SLEWING	1	OMP100C
1	A02-3319	베이스 결합체 BASE ASS'Y	1		11	S01-1307	육각 볼트 BOLT, HEX. HEAD	14	BA20×70(12.9T)
2	A02-3691	칼럼 결합체 COLUMN ASS'Y	1		12	3612201	스프링 와셔 WASHER, SPRING	14	WS20
3	A02-3392	컨트롤 시스템 CONTROL SYSTEM	1		13	S01-1308	육각 볼트 BOLT, HEX. HEAD	23	BA20×120(12.9T)
4	A02-3403	베이스 호스 결합체 BASE HOSE ASS'Y	1		14	2112157	육각 볼트 BOLT, HEX. HEAD	7	BA16×45
5	WC-2001	윈치 시스템 WINCH SYSTEM	1		15	3612161	스프링 와셔 WASHER, SPRING	7	WS16
6	BC1-3003	선회 베어링 BEARING, SLEWING	1		16	W01-3739	브라켓 BRACKET	1	t=6
7	A02-1740	로타리 조인트 결합체 ROTARY JOINT ASS'Y	1	7 PORT	17	W01-3740	브라켓 BRACKET	1	t=6
8	H01-2170	데릭 실린더 결합체 DERRICK CYLINDER ASS'Y	1		18	2111226	육각 볼트 BOLT, HEX. HEAD	8	BA10×30
9	BC1-0003	선회 감속기 REDUCER, SLEWING	1		19	3612101	스프링 와셔 WASHER, SPRING	12	WS10

SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.



SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.

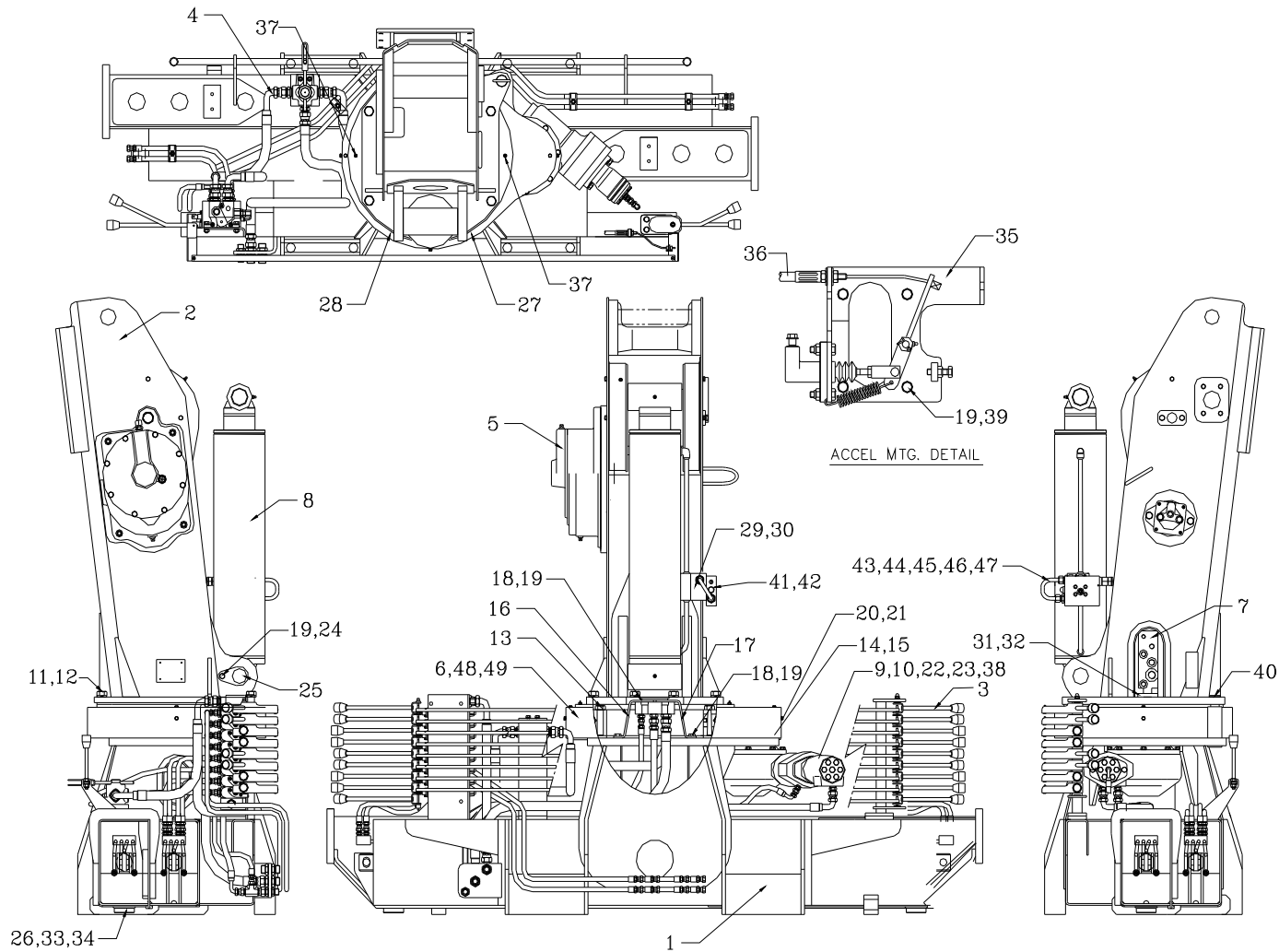
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20	2110447	육각 볼트 BOLT, HEX. HEAD	11	BA6×12	30	2615547	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	
21	3612061	스프링 와셔 WASHER, SPRING	11	WS6	31	M05-2434	브라켓 BRACKET	1	t=12
22	2111537	육각 볼트 BOLT, HEX. HEAD	2	BA12×35	32	BO-0005	접시 머리 볼트 BOLT, FLAT HEAD	3	M10×35
23	3612121	스프링 와셔 WASHER, SPRING	2	WS12	33	OR-0062	어저스트 볼트 BOLT, ADJUST	2	
24	2111206	육각 볼트 BOLT, HEX. HEAD	1	BA10×25	34	OR-0063	어저스트 패드 PAD, ADJUST	2	
25	BC1-3005	축 SHAFT	1	Φ55×258	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	
27	BC1-7009	커버 (오른쪽) COVER (R.H)	1		37	4620702	그리스 니플 NIPPLE, GREASE	2	B-PT1/8
28	BC1-7013	커버 (왼쪽) COVER (L.H)	1		38	S01-0469	가스켓 GASKET	1	
29	M01-1423	블록 BLOCK	1	t=12	39	2111166	육각 볼트 BOLT, HEX. HEAD	4	BA10×16

SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.



SPARE PARTS LIST



베이스 및 칼럼 결합체
BASE & COLUMN ASS'Y

HIAB160TM-6 2:1
2015. 04.

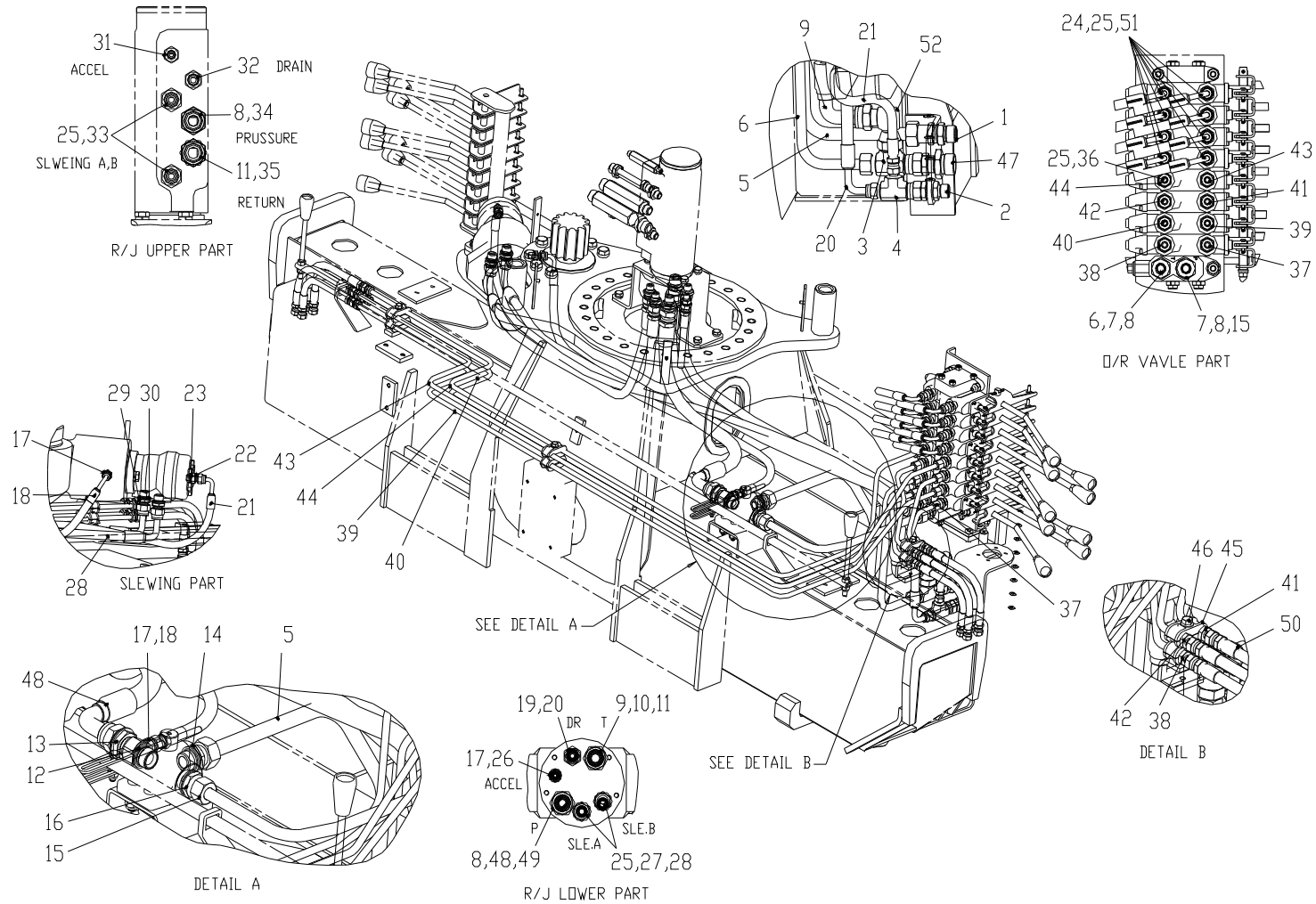
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40	S01-2283	핀 PIN	1						
41	985 2352	카운터 발란스 밸브 COUNTER BALANCE VALVE	1						
42	2615957	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB8×45					
43	H01-3440	유압 파이프 PIPE, HYDRAULIC	1	Φ12×t2.0					
44	9003351	파이프 니플 NIPPLE, PF PIPE	1	NFPO12-PF3/8					
45	9001361	파이프 니플 NIPPLE, PF PIPE	1	NFP12-PF1/2					
46	6010172	오링 O-RING	1	1B P14					
47	6800081	실링 와셔 WASHER, SEALING	1	NF216-8					
48	2112805	육각 볼트 BOLT, HEX. HEAD	2	BA20×70					
49	3113206	유각 너트 NUT, HEX.	2	NA20					

SPARE PARTS LIST



베이스 배관도
BASE HOSE & PIPING

HIAB160TM-6 3 : 1
2015. 04.



SPARE PARTS LIST



베이스 배관도
BASE HOSE & PIPING

HIAB160TM-6 3:1
2015. 04.

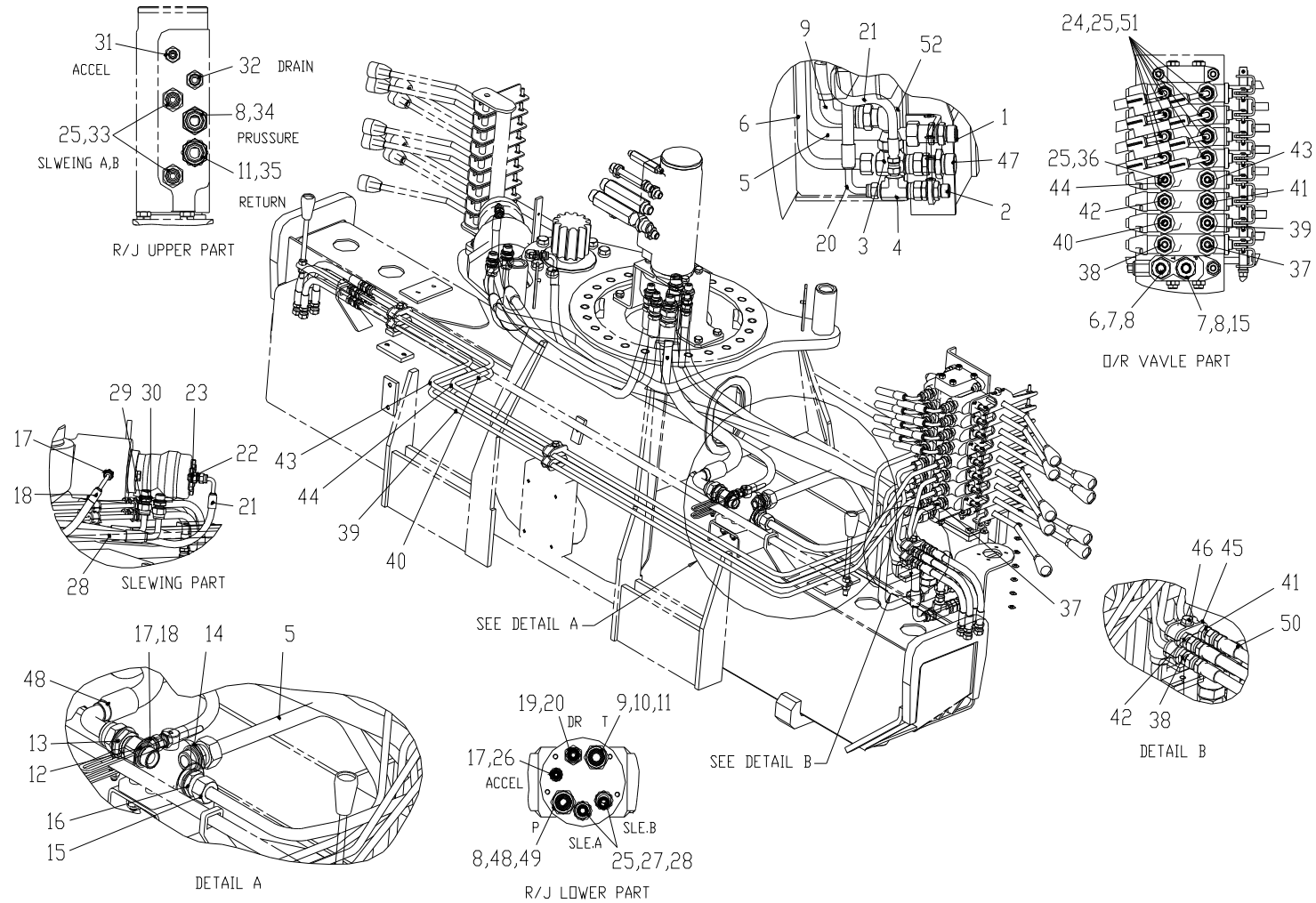
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-	A02-3403	베이스 호스 & 파이프 결합체 BASE HOSE & PIPE ASS'Y	1		10	9381092	호스 니플 NIPPLE, PF HOSE	1	NFCO3/4×3/4
1	S01-5040	벌크 헤드 호스 유니언 UNION, HOSE B/H	1	Φ20×PF3/4	11	6010282	O-링 O-RING	2	P24
2	BP-4003	벌크 헤드 호스 유니언 UNION, HOSE B/H	1	2-PF1/2	12	6800121	실링 와셔 WASHER, SEALING	3	NF3/4
3	S01-5037	파이프 스윙블 티 TEE, PIPE SWIVEL	1	2-PF3/4×Φ16	13	S01-4674	니플 NIPPLE	1	PF3/4×PF1/4
4	S01-1608	호스 스윙블 티 TEE, HOSE SWIVEL	1	2-PF1/2×PF1/4	14	9001451	파이프 니플 NIPPLE, PF PIPE	1	NFP20-PF3/4
5	H01-6653	유압 파이프 PIPE, HYDRAULIC	1	Φ20×t2.0	15	H01-6617	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0
6	H01-6662	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0	16	9001411	파이프 니플 NIPPLE, PF PIPE	1	NFP16-PF3/4
7	9003401	파이프 니플 NIPPLE, PF PIPE	2	NTPO16-PF1/2	17	9211062	호스 니플 NIPPLE, PT HOSE	3	PF1/4×PT1/4
8	6010212	O-링 O-RING	4	P18	18	7167872	고압 호스 HOSE, H.P (HECF)	1	1/4×1180-PF1/4
9	7176822	고압 호스 HOSE, H.P (HUCF)	1	5/8×1050-PF3/4	19	TS-0439	호스 니플 NIPPLE, PT HOSE	1	PT3/8×PF1/2

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베이스 배관도 BASE HOSE & PIPING

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베이스 배관도
BASE HOSE & PIPING

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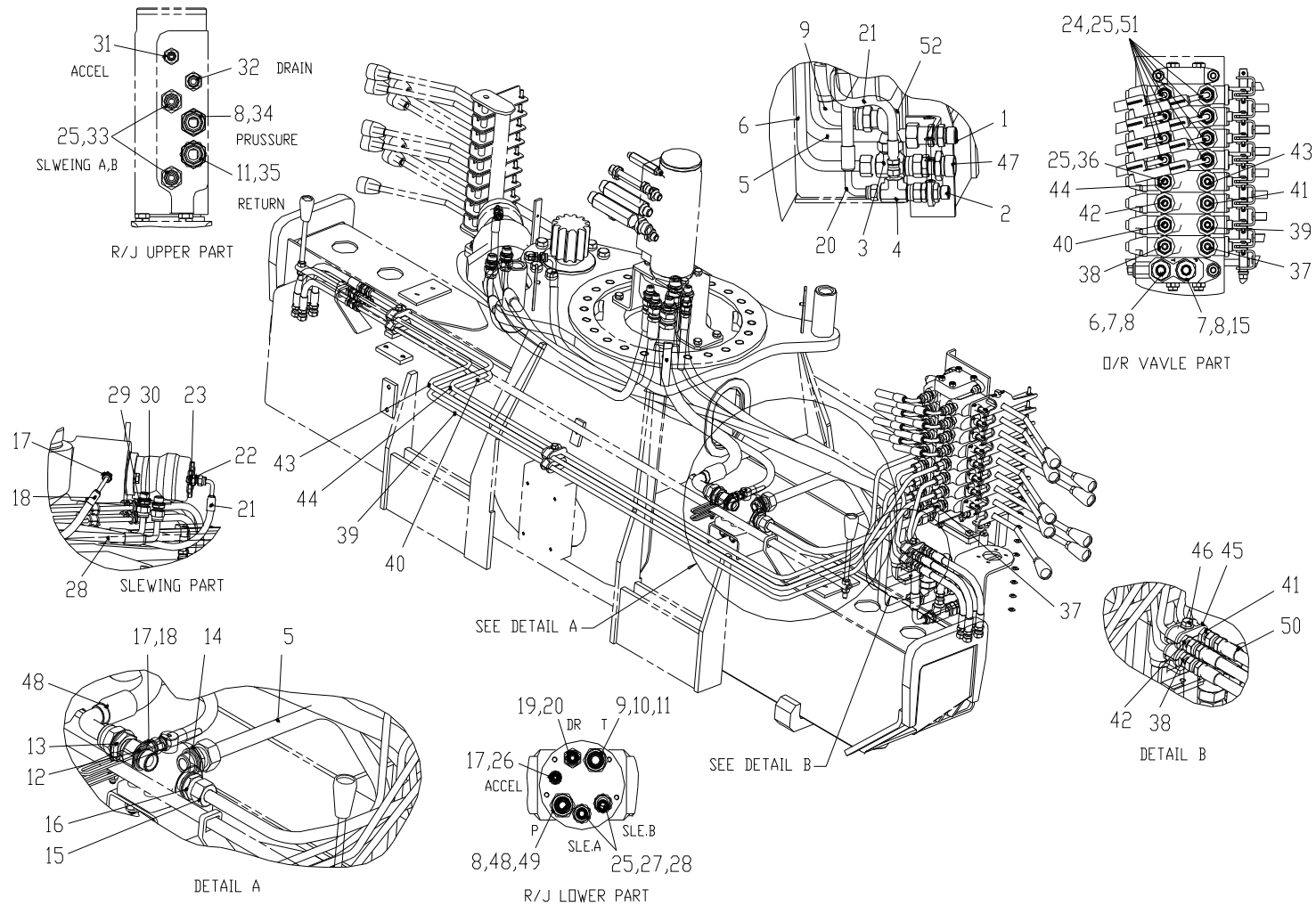
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20	7172333	고압 호스 HOSE, H.P (HECF)	1	3/8×1080-PF3/8	30	6800081	실링 와셔 WASHER, SEALING	2	NF1/2
21	H01-1543	고압 호스 HOSE, H.P	1	1/4×1850-PF1/4	31	BSP-0051	호스 니플 NIPPLE, PT HOSE	1	PT1/4×PF3/8
22	9270052	호스 유니언 UNION, CONICAL	1	1/4×1/4	32	BSP-0032	롱 니플 NIPPLE, LONG	1	PF3/8×PT3/8
23	6800041	실링 와셔 WASHER, SEALING	1	NF1/4	33	BSP-0033	롱 니플 NIPPLE, LONG	2	PF3/8×PF1/2
24	S01-0948	호스 니플 NIPPLE, PF HOSE	8	PF1/4(C)×PF3/8(O)	34	BSP-0034	롱 니플 NIPPLE, LONG	1	PF1/2×PF3/4
25	6010172	O-링 O-RING	20	P14	35	BSP-0035	롱 니플 NIPPLE, LONG	1	PF3/4×PF3/4
26	H01-1727	고압 호스 HOSE, H.P	1	1/4×1250-PF1/4	36	9003321	파이프 니플 NIPPLE, PF PIPE	8	NTPO10-PF3/8
27	9381052	호스 니플 NIPPLE, PF HOSE	2	NFCO1/2×3/8	37	H01-7822	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5
28	7172263	고압 호스 HOSE, H.P (HECF)	2	3/8×900-PF1/2	38	H01-7823	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5
29	9270072	호스 유니언 UNION, CONICAL	2	1/2×1/2	39	H01-6621	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5

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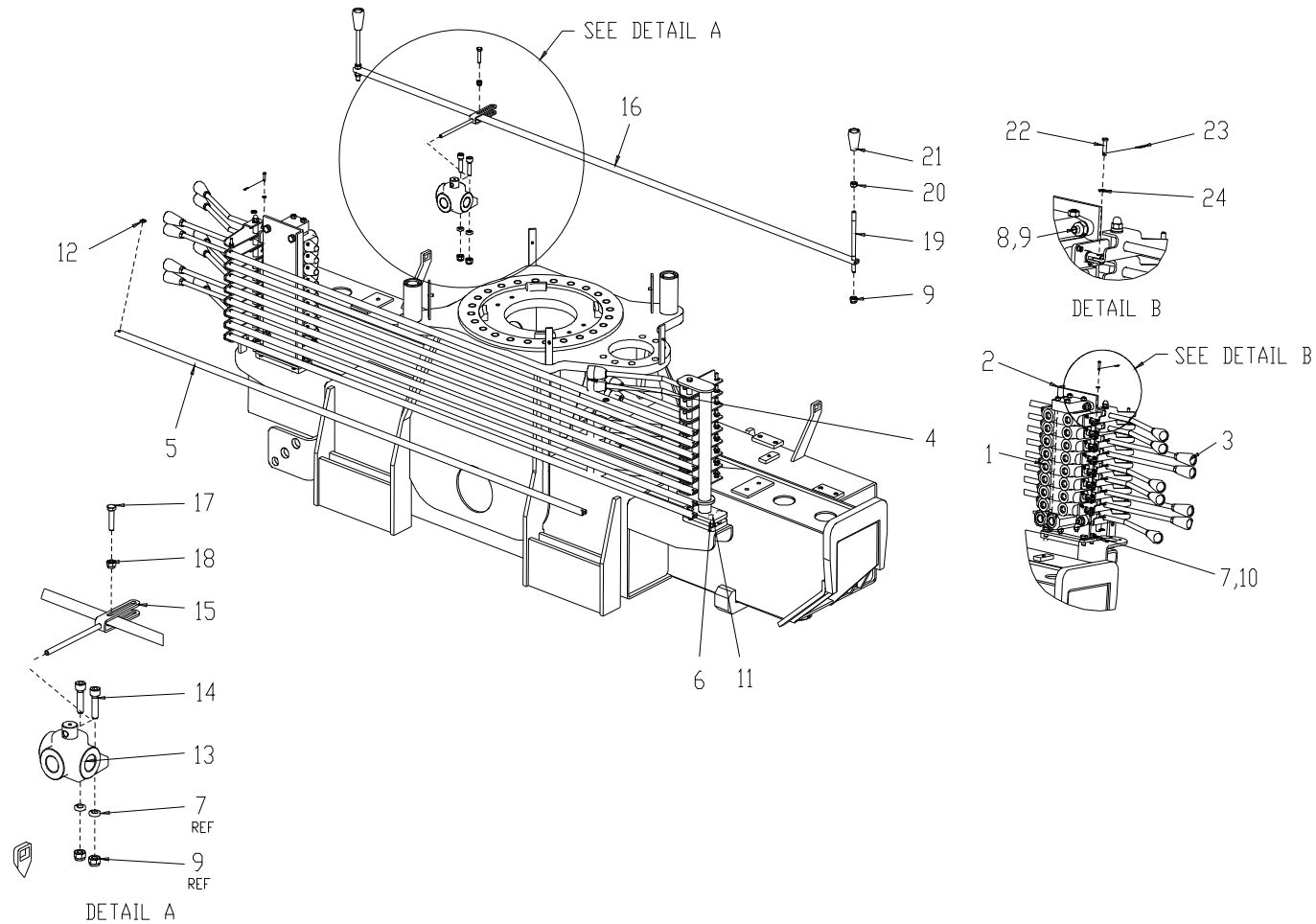
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40	H01-6622	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	50	7113513	고압 호스 HOSE, H.P (HUCF)	8	1/4×300-PF1/4
41	H01-7824	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	51	7167962	고압 호스 HOSE, H.P (HECF)	8	1/4×1400-PF1/4
42	H01-7825	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5	52	BP-0014	스위블 엘보 ELBOW, SWIVEL	1	PF3/4×PF3/4
43	H01-6625	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5					
44	H01-6626	유압 파이프 PIPE, HYDRAULIC	1	Φ10×t1.5					
45	S01-4269	클램프 CLAMP	12	Φ10-Φ16					
46	2185976	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	3	BWF8×55					
47	S01-1755	벌크 헤드 호스 유니언 UNION, HOSE BULKHEAD	1	PF1×PF3/4					
48	7176662	고압 호스 HOSE, H.P (HECF)	1	5/8×650-PF3/4					
49	9381082	호스 니플 NIPPLE, PF HOSE	1	NFCO3/4×1/2					

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OUTRIGGER CONTROL SYSTEM

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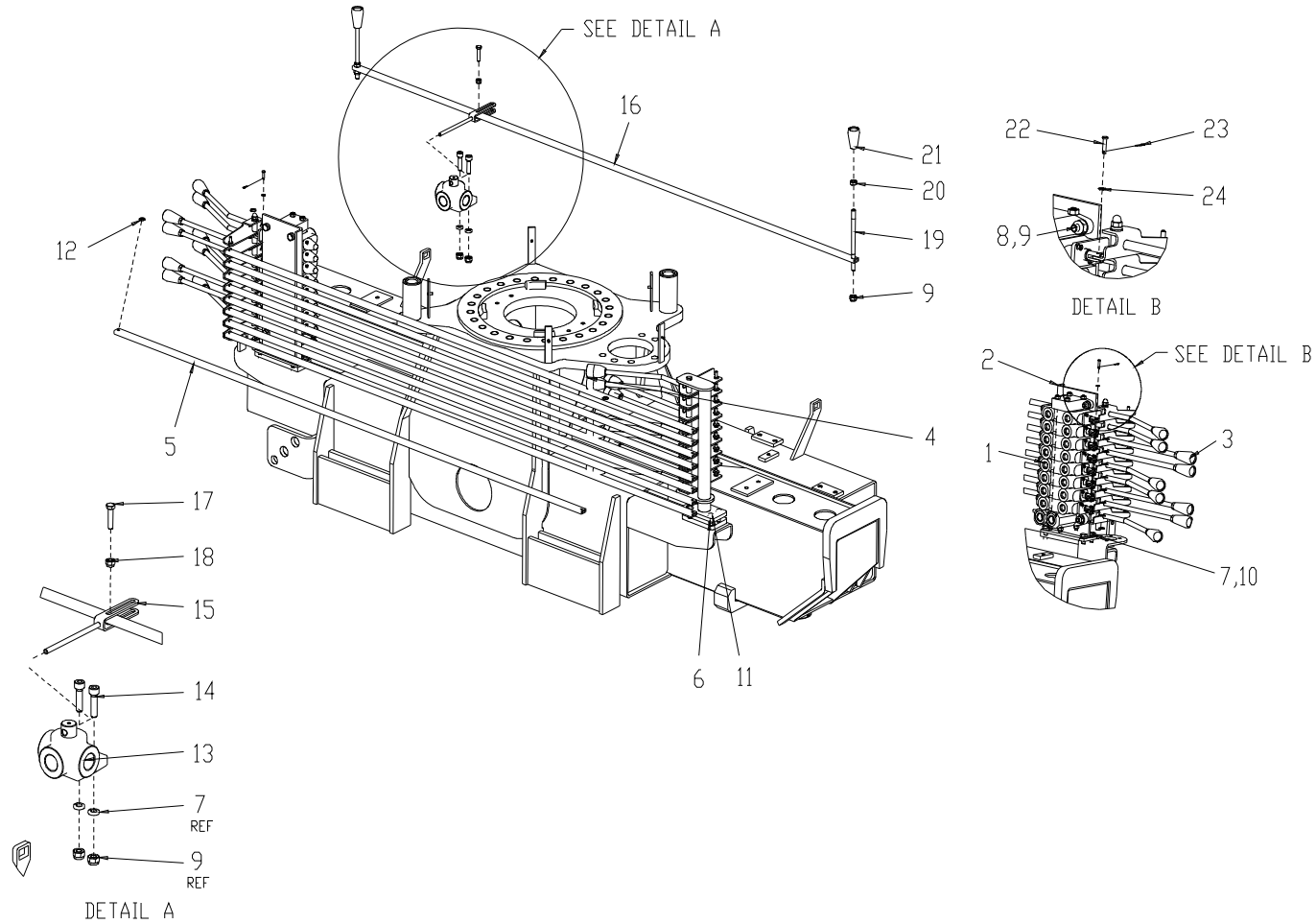
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-	A02-3392	아우트리거 제어 장치 OUTRIGGER CONTROL SYSTEM	1		10	2111177	육각 머리 볼트 BOLT, HEX. HEAD	4	BA10×18
1	H02-1211	아우트리거 제어 밸브 VALVE, O/R CONTROL	1	TX50/8	11	2111206	육각 머리 볼트 BOLT, HEX. HEAD	4	BA10×25
2	A05-4026	브라켓트 결합체 BRACKET ASS'Y	1		12	S01-0854	백 와셔 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	구멍붙이 육각 볼트 BOLT, HEX. SOCKET HEAD	2	BB10×40
5	M05-0967	로드 레버 ROD LEVER	9	t2.5×20×10	15	CT-3009	링크 LINK	1	
6	3511101	평 와셔 WASHER, PLAIN	4	WP10	16	CT-3012	레버 로드 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

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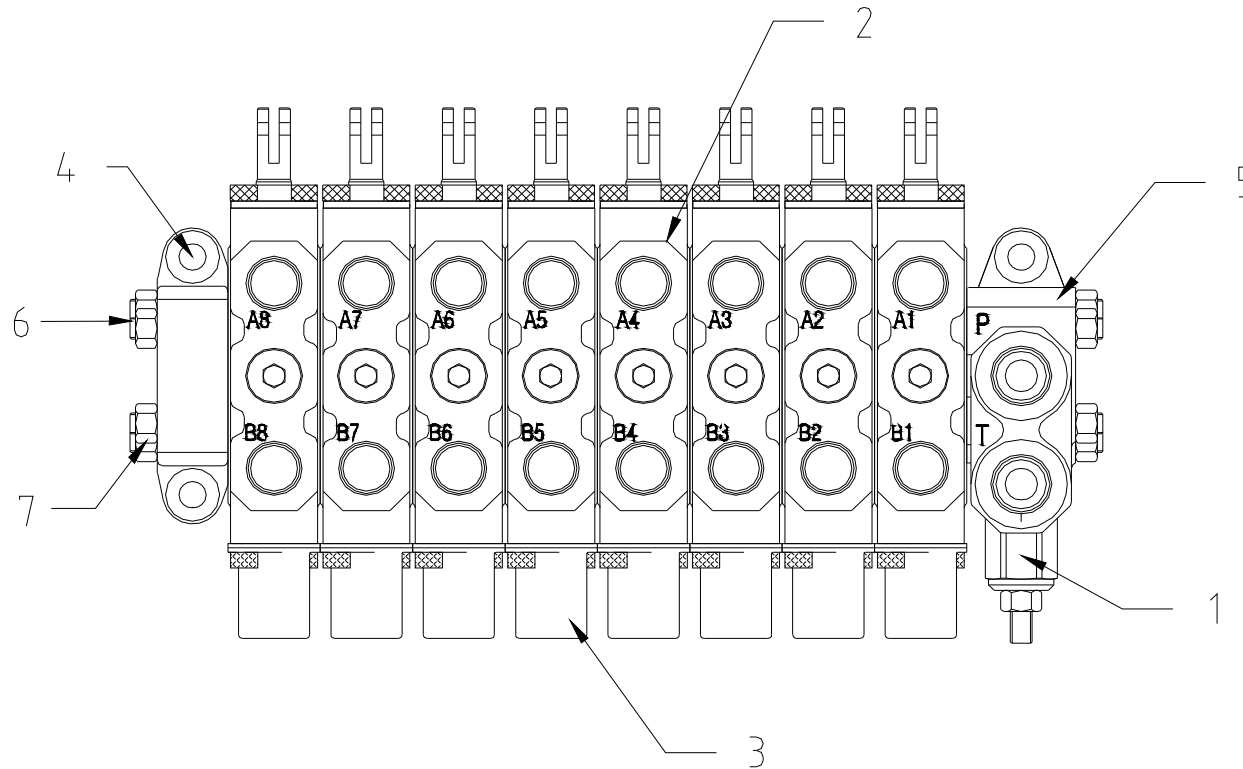
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20	3112106	육각 너트 NUT, HEX.	2	NA10					
21	S01-0048	손잡이 KNOB (RED)	2						
22	CS-0008	핀 PIN	8	Φ4.5×20					
23	CS-0009	싱글 스프링 핀 SPRING PIN, SINGLE	8	Φ1×15					
24	3511051	평 와셔 WASHER, PLAIN	8	WP5					

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아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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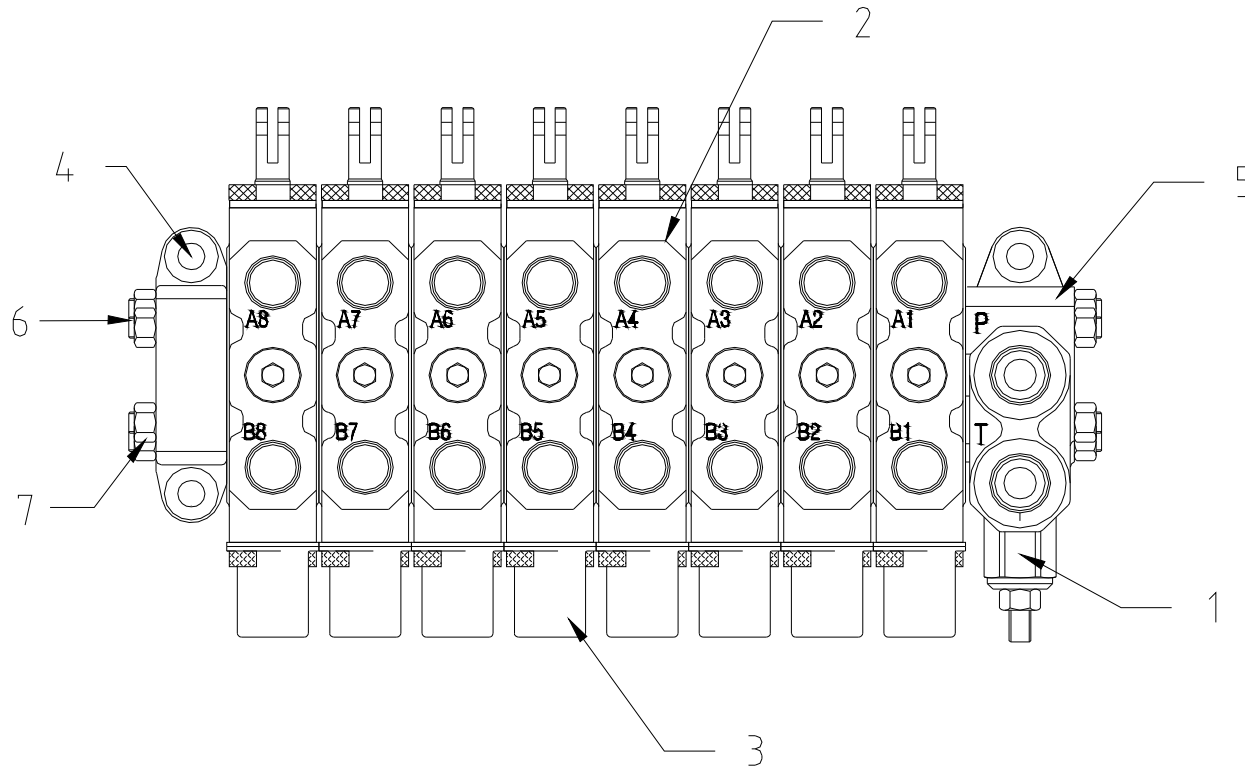
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-	H02-1211	스태빌라이저 조종 밸브 STABILIZER CONTROL VALVE	1	TX50-8	-	1021025060	로드 체크 팝펫 POPPET LOAD CHECK	8	
1	H02-1146	블록 결합체 인넷 BLOCK ASS'Y INLET	1		-	2011011012	로드 체크 스프링 SPRING LOAD CHECK	8	
-	1024005010	블록 인넷 BLOCK INLET	1		-	1021028010	로드 체크 플러그 PLUG LOAD CHECK	8	
-	2001420055	오 링 O-RING	1		-	2001020014	오 링 O-RING	8	
-	1000028020	플러그 포트 PLUG PORT	1		-	1024010020	캡 리턴 CAP RETURN	8	
-	2001020011	오 링 O-RING	1		-	2001010013	오 링 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	오 링 O-RING	8		-	2003212025	볼트 BOLT	16	

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OUTRIGGER CONTROL VALVE

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아우트리거 제어 밸브
OUTRIGGER CONTROL VALVE

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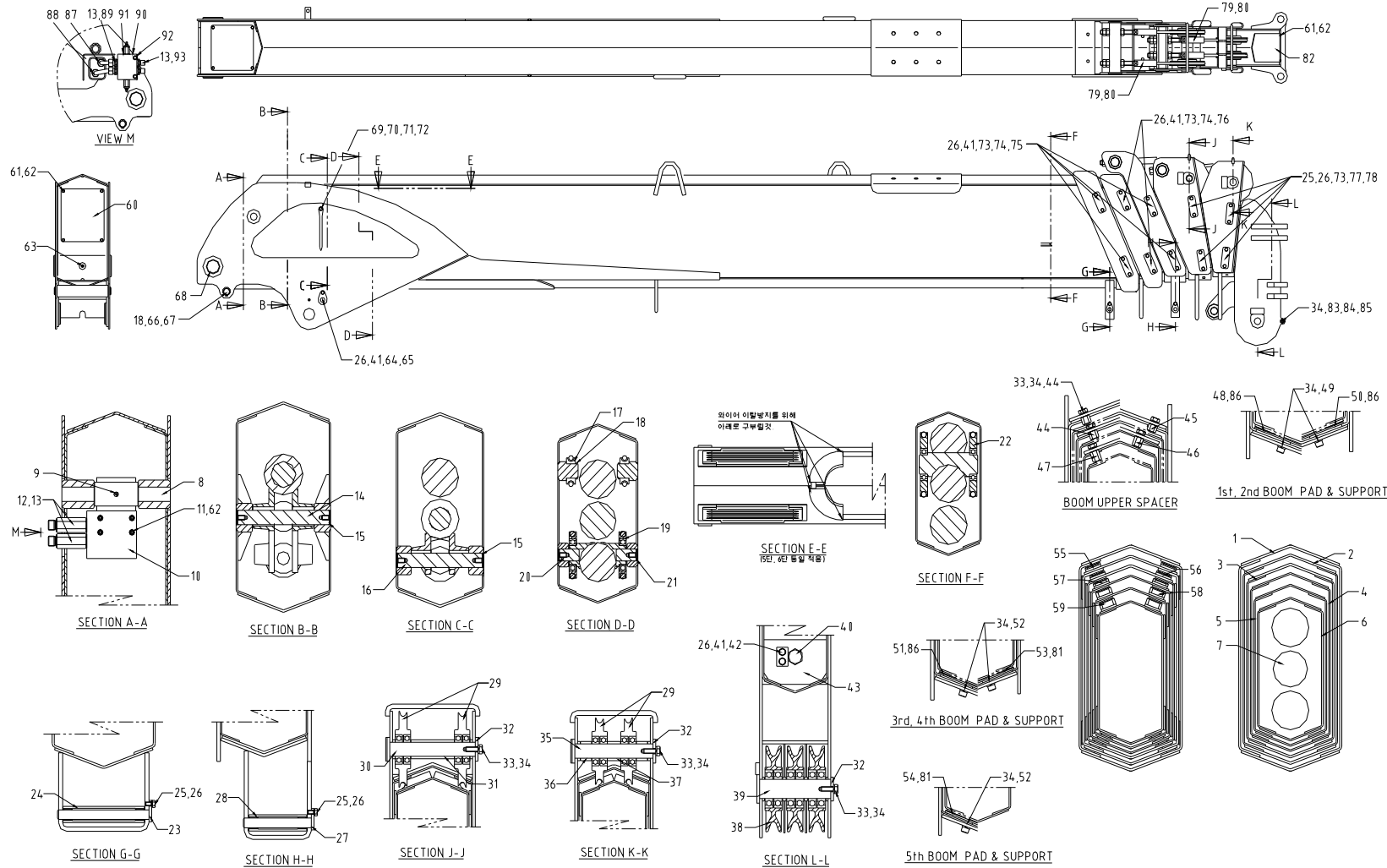
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4	H02-1148	스풀 결합체 SPOOL ASS'Y WORK	8		7	2008021008	너트 NUT	4	
-	1024036011	스풀 스타드 SPOOL STD	8						
-	2001010013	오 링 O-RING	8						
-	2015340010	더스트 시일 SEAL DUST	8						
-	1024023010	플레이트 시일 PLATE SEAL	8						
-	1024031010	스프링 세트 SEAT SPRING	16						
-	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						

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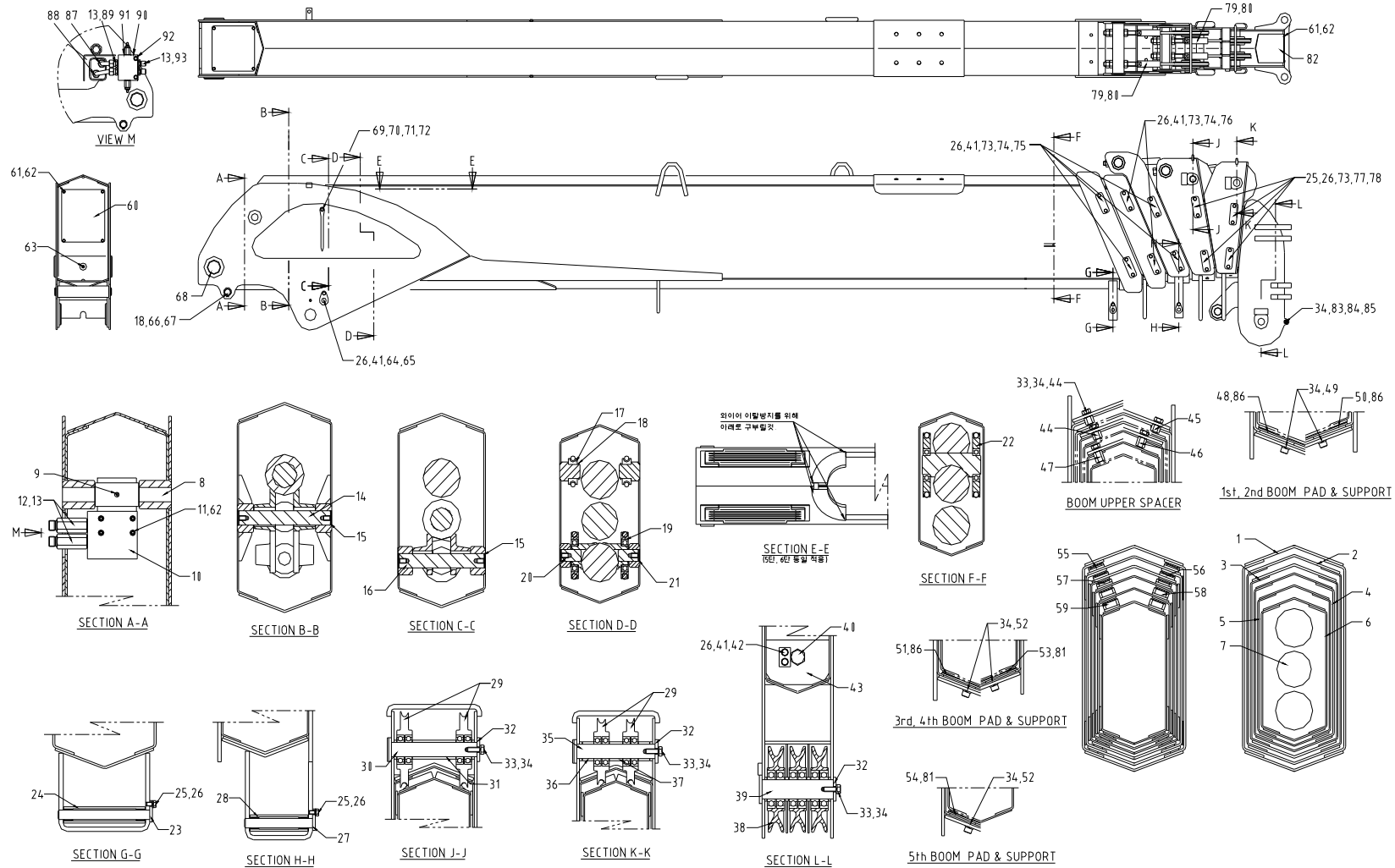
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-	A01-4222	붐 시스템 BOOM SYSTEM	1		10	M01-1078	블록 BLOCK	1	
1	A02-3653	1단 붐 결합체 1st BOOM ASS'Y	1		11	2615617	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB6×75
2	A02-3643	2단 붐 결합체 2nd BOOM ASS'Y	1		12	S01-2308	롱 니플 NIPPLE, LONG	2	Φ16×PF1/2(O)
3	A02-3644	3단 붐 결합체 3rd BOOM ASS'Y	1		13	6010212	오링 O-RING	6	1B P18
4	A02-3646	4단 붐 결합체 4th BOOM ASS'Y	1		14	BOO-2003	축 SHAFT	1	Φ30×200L
5	A02-3647	5단 붐 결합체 5th BOOM ASS'Y	1		15	4525281	멈춤 링 RING, RETAINING	4	RB30
6	A02-3650	6단 붐 결합체 6th BOOM ASS'Y	1		16	BOO-2004	축 SHAFT	1	Φ30×182L
7	H01-4128	신축 실린더 결합체 EXTENSION CYLINDER ASS'Y	1		17	BOO-5003	와이어 로프 ROPE, WIRE	1	Φ10×20430L
8	BOO-5002	축 SHAFT	1	Φ30×240L	18	4510291	멈춤 링 RING, RETAINING	4	RC30
9	2340796	멈춤 나사 SCREW, SET (STICK END)	1	BM10×16	19	BOO-0008	쉬브 결합체 SHEAVE ASS'Y	2	

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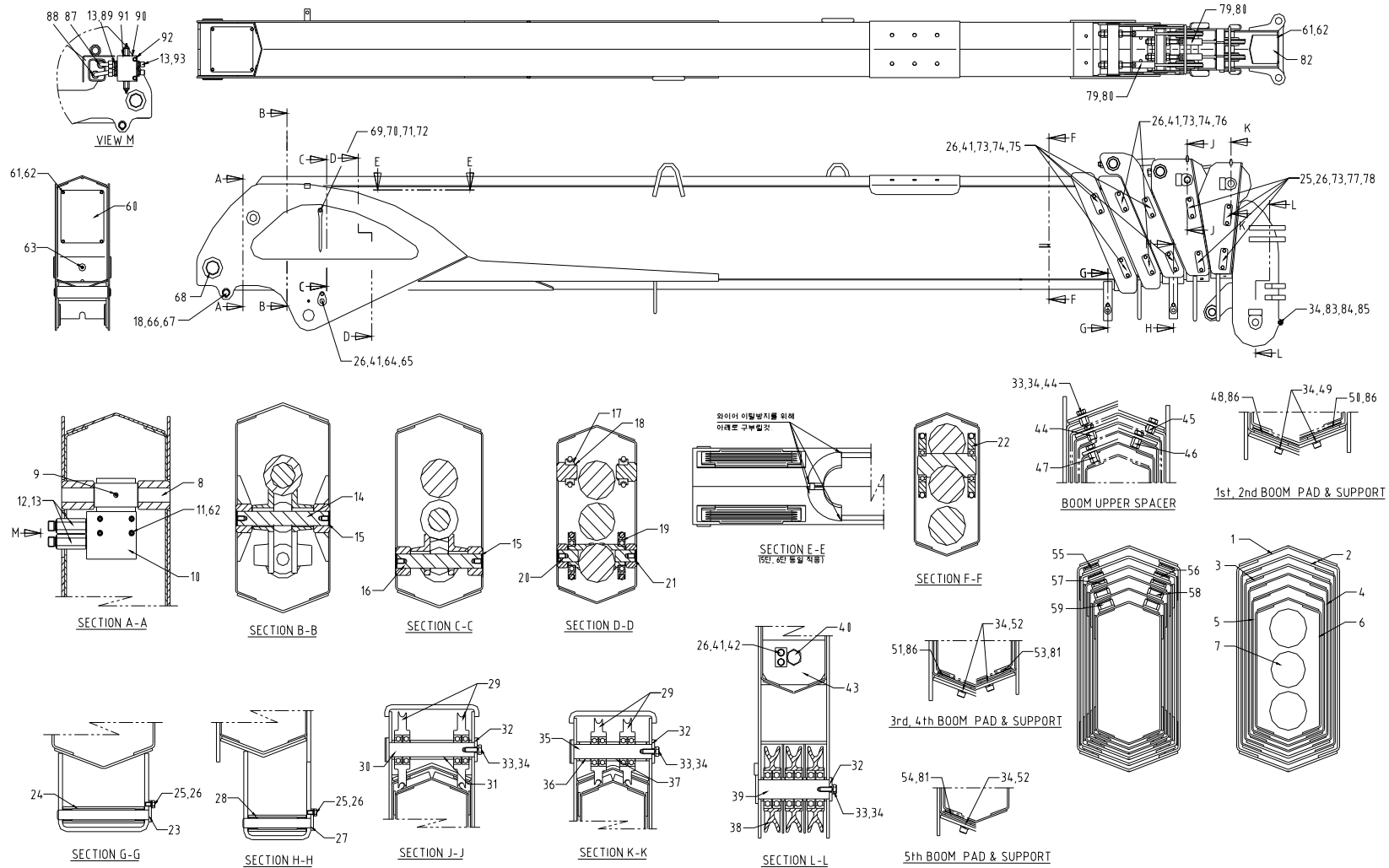
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20	BOO-0007	핀 PIN	2	Φ25×42L	30	BOO-0023	축 SHAFT	1	Φ30×189L
21	4525251	멈춤 링 RING, RETAINING	2	RB25	31	BOO-2014	스페이서 SPACER	1	Φ40×96L
22	BOO-0011	쉬브 결합체 SHEAVE ASS'Y	2		32	N01-0543	플레이트 PLATE	3	t=6
23	BOO-2005	축 SHAFT	1	Φ20×202L	33	2111187	육각 볼트 BOLT, HEX. HEAD	13	BA10×20
24	BOO-2006	롤러 결합체 ROLLER ASS'Y	1	Φ34×180L	34	3612101	스프링 와셔 WASHER, SPRING	25	WS10
25	2110866	육각 볼트 BOLT, HEX. HEAD	18	BA8×16	35	BOO-0027	축 SHAFT	1	Φ30×173L
26	3612081	스프링 와셔 WASHER, SPRING	45	WS8	36	BOO-2015	스페이서 SPACER	2	Φ40×25L
27	BOO-5004	축 SHAFT	1	Φ20×165L	37	BOO-0030	스페이서 SPACER	1	Φ40×29L
28	BOO-5005	롤러 결합체 ROLLER ASS'Y	1	Φ34×142L	38	A05-3387	쉬브 결합체 SHEAVE ASS'Y	3	
29	A05-3386	쉬브 결합체 SHEAVE ASS'Y	4		39	BOO-0035	축 SHAFT	1	Φ40×157L

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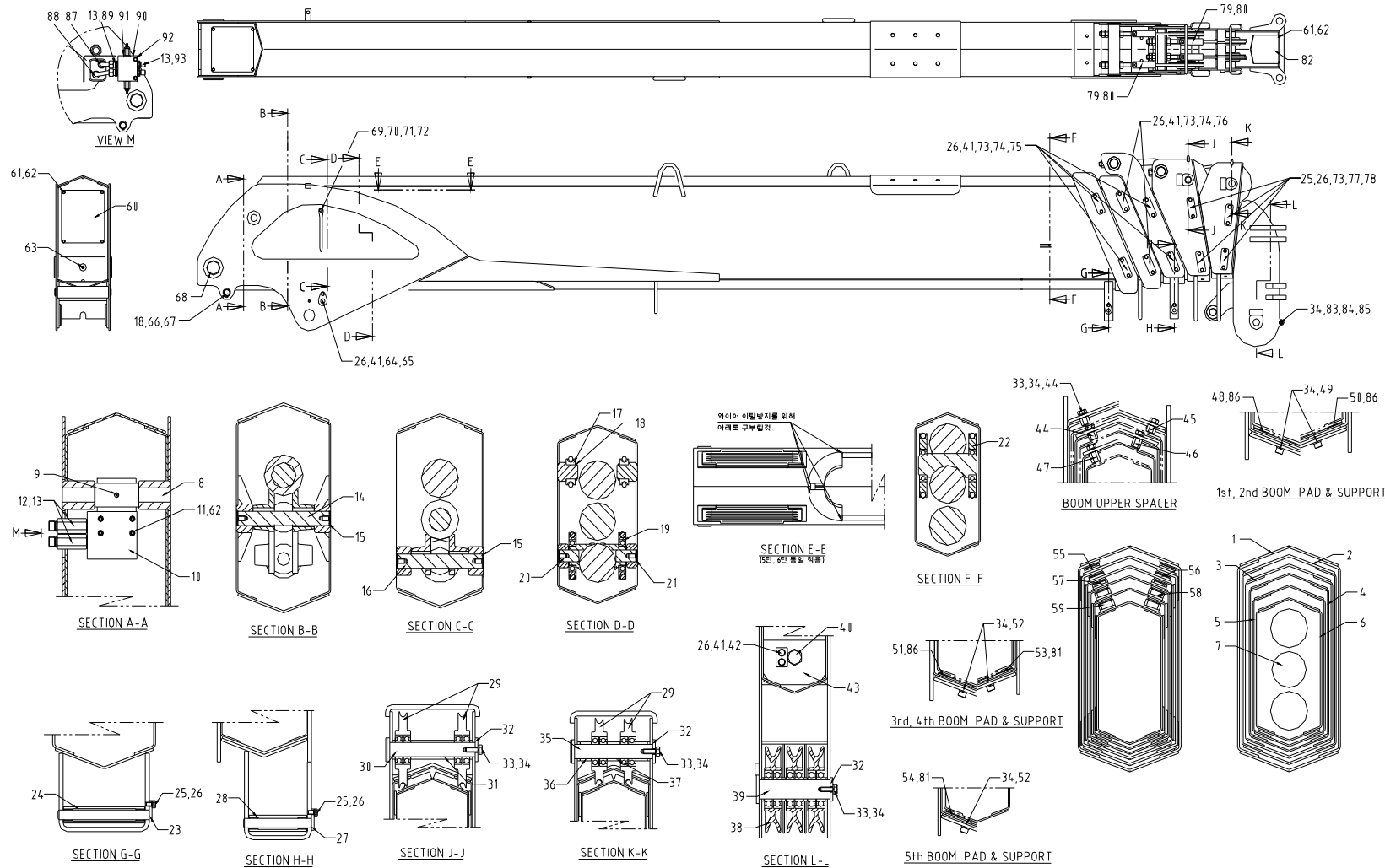
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40	BOO-0073	육각 머리 볼트 BOLT, HEX. HEAD	1	M20×220	50	BOO-5056	패드 가이드 GUIDE, PAD	1	
41	2110886	육각 머리 볼트 BOLT, HEX. HEAD	27	BA8×20	51	BOO-5059	패드 가이드 GUIDE, PAD	1	
42	N01-0535	플레이트 PLATE	1	25×40×6t	52	2611176	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	6	BB10×18
43	BOO-0032	와이어 가이드 GUIDE, WIRE	1		53	BOO-5062	패드 가이드 GUIDE, PAD	1	
44	BOO-5014	육각 너트 NUT, HEX.	4	t=16	54	BOO-5065	패드 가이드 GUIDE, PAD	1	
45	BOO-2018	육각 너트 NUT, HEX.	2	t=15	55	BOO-5037	슬라이드 패드 PAD, SLIDE	2	35×220×9t
46	BOO-5015	육각 너트 NUT, HEX.	2	t=20	56	BOO-5038	슬라이드 패드 PAD, SLIDE	2	35×220×8t
47	BOO-5016	육각 너트 NUT, HEX.	2	t=22	57	BOO-5039	슬라이드 패드 PAD, SLIDE	2	35×220×10.6t
48	BOO-5052	패드 가이드 GUIDE, PAD	1		58	BOO-5040	슬라이드 패드 PAD, SLIDE	2	35×220×16t
49	2611186	육각 구멍볼이 볼트 BOLT, HEX. SOCKET HEAD	4	BB10×20	59	BOO-5041	슬라이드 패드 PAD, SLIDE	2	35×220×18t

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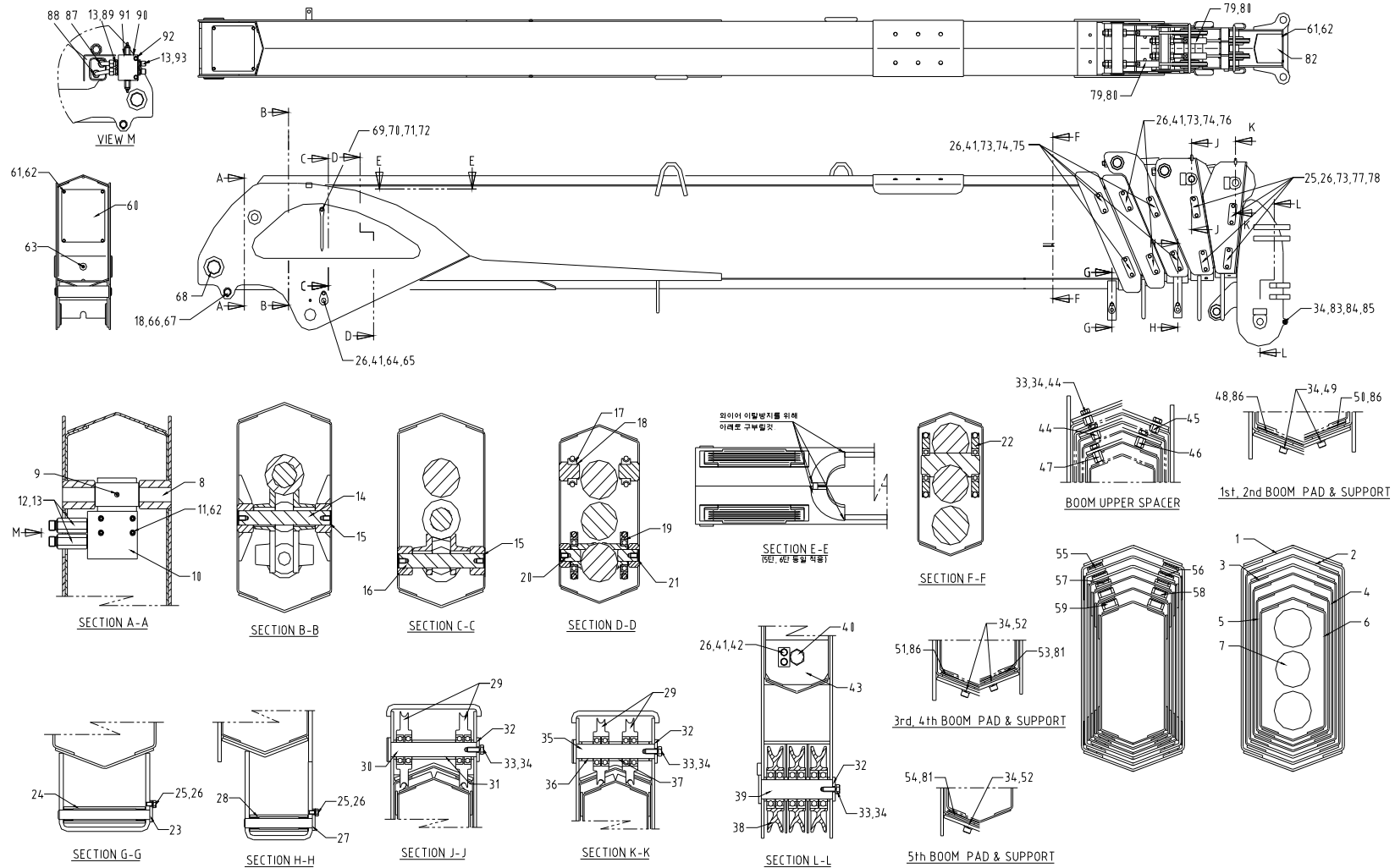
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60	BOO-0062	플레이트 PLATE	1	t=2.3	70	2110906	육각 머리 볼트 BOLT, HEX. HEAD	2	BA8×25
61	2110446	육각 볼트 BOLT, HEX. HEAD	8	BA6×16	71	3112086	육각 너트 NUT, HEX.	2	NA8
62	3612061	스프링 와셔 WASHER, SPRING	12	WS6	72	3511081	평 와셔 WASHER, PLAIN	4	WP8
63	4610702	그리스 니플 NIPPLE, GREASE	1	A-PT1/8	73	N01-3491	플레이트 PLATE	20	32×90×12t
64	TA-0005	축 SHAFT	1	Φ30×243L	74	S01-4209	사이드 패드 PAD, SIDE	12	19×49×18t
65	A05-1813	쉬브 SHEAVE	1		75	BOO-5043	심 SHIM	8	t=3
66	M01-1047	핀 PIN	1	Φ30×2520L	76	BOO-5044	심 SHIM	4	t=1.5
67	A05-1814	롤러 결합체 ROLLER ASS'Y	1	Φ48.6×226L	77	S01-3121	사이드 패드 PAD, SIDE	8	19×49×14t
68	4321251	DU 부싱 BUSHING, DU	2	MB5540DU	78	BOO-5045	심 SHIM	8	t=1.0
69	W01-3761	각도 지시계 INDICATOR, ROD	2	t=4.5	79	S01-4924	와이어 로프 ROPE, WIRE	1	Φ10×7970L

SPARE PARTS LIST



붐 시스템 BOOM SYSTEM

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2015. 04.



SPARE PARTS LIST



붐 시스템
BOOM SYSTEM

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2015. 04.

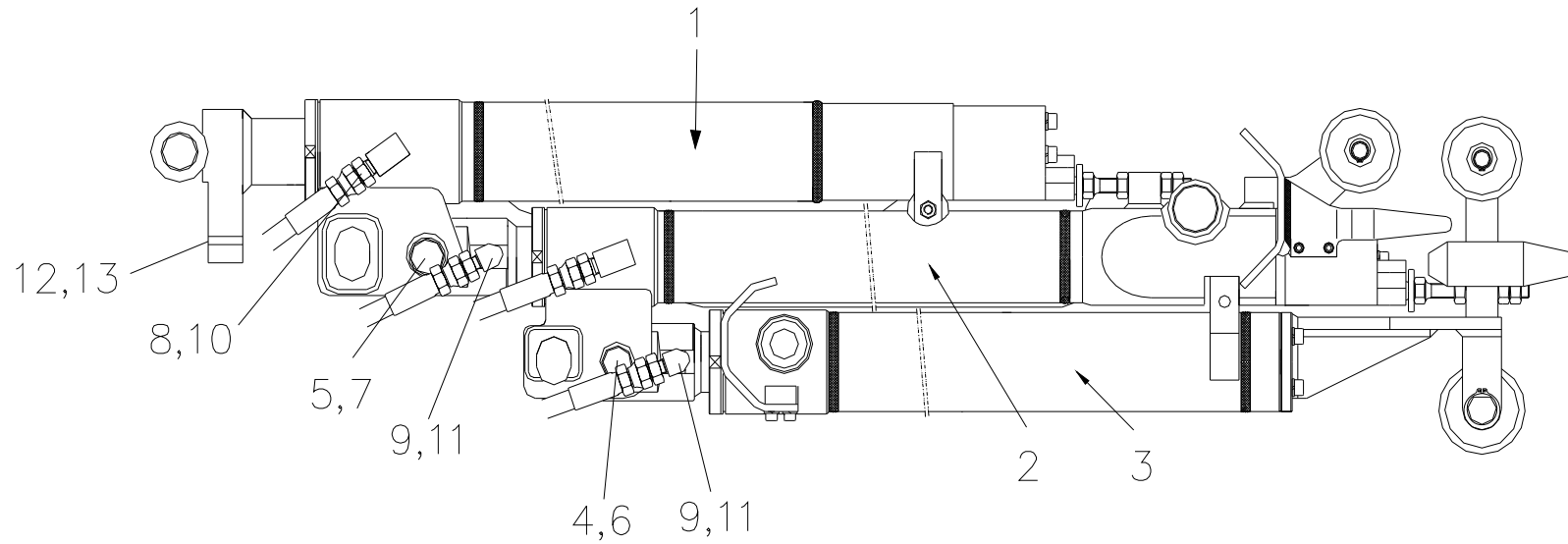
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80	3112181	육각 너트 NUT, HEX.	12	NA18	90	M01-1079	브라켓 BRACKET	1	t4.5
81	S01-3122	슬라이드 패드 PAD, SLIDE	4	40×210×6t	91	H02-1257	카운터 발란스 밸브 VALVE, COUNTER BALANCE	1	
82	BOO-2039	커버 COVER	1	t=2.3	92	2186016	플렌지 볼이 육각 볼트 BOLT, HEX. W/F	2	BWF8×75
83	BOO-5048	볼트 BOLT	1	M10	93	9381062	코니칼 유니온 UNION, CONICAL	2	NFCO1/2×1/2
84	BOO-5049	파이프 PIPE	1	t=2.3					
85	BOO-5050	육각 너트 NUT, HEX.	2	NA10					
86	BOO-5055	슬라이드 패드 PAD, SLIDE	6	40×210×6t					
87	H01-2624	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0					
88	H01-2625	유압 파이프 PIPE, HYDRAULIC	1	Φ16×t2.0					
89	9003401	파이프 니플 NIPPLE, PF PIPE	2	NTPO16-PF1/2					

SPARE PARTS LIST



신축 실린더 결합체
EXTENSION CYLINDER ASS'Y

HIAB160TM-6 7:0
2013. 05.



SPARE PARTS LIST



신축 실린더 결합체
EXTENSION CYLINDER ASS'Y

HIAB160TM-6 7:0
2013. 05.

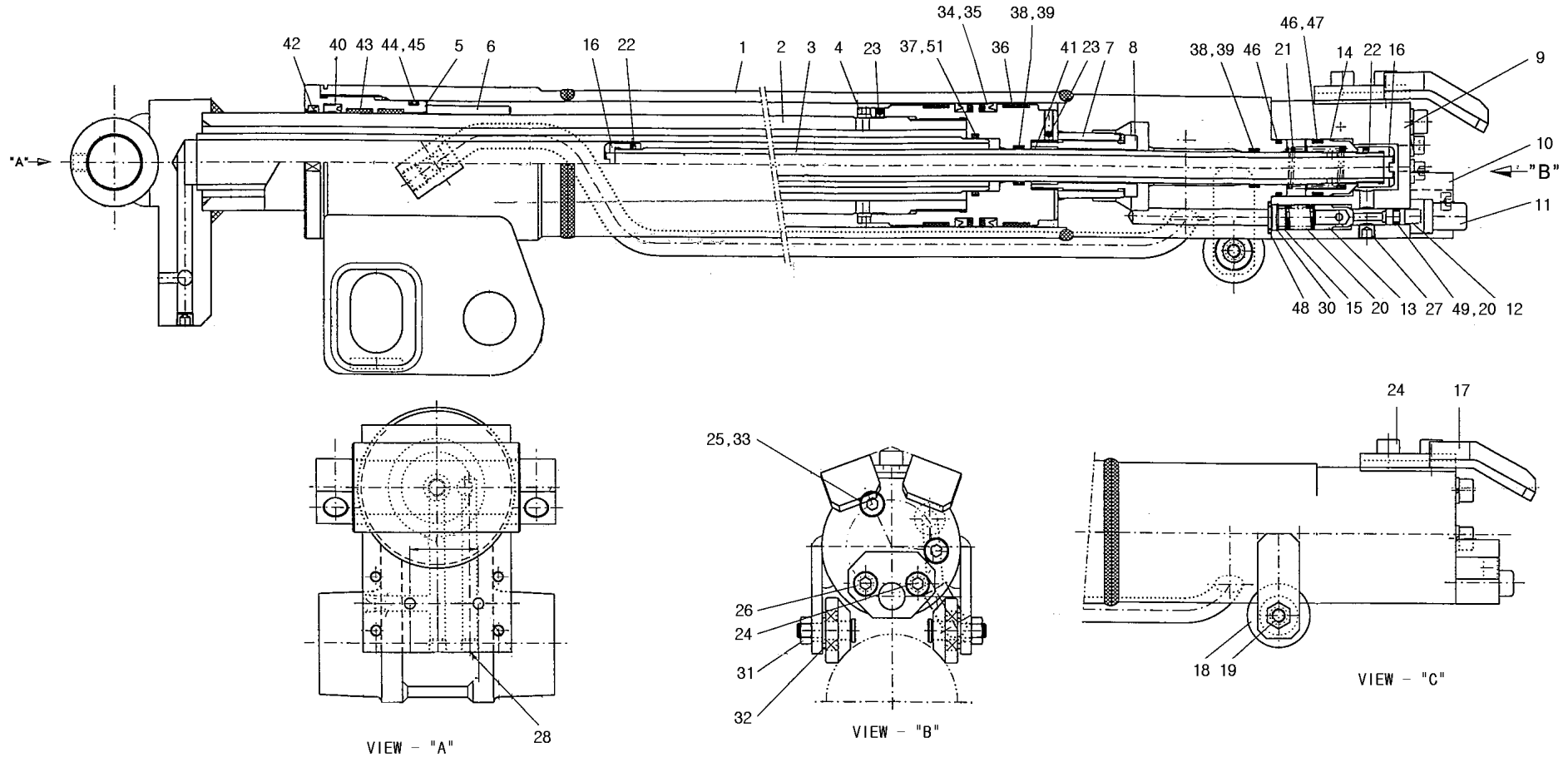
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-	H01-4128 HN21T0A00-02	신축 실린더 EXTENSION CYLINDER	1		10	9211092	아답터 ADAPTER-A	4	ZPC3010-6-6
1	HN21T1A00-01	1단 신축 실린더 1st EXTENSION CYLINDER	1	H01-4129	11	9231092	아답터 ADAPTER-B	4	ZPC3090-6-6
2	HN21T2A00-01	2단 신축 실린더 2nd EXTENSION CYLINDER	1	H01-4130	12		더스트 커버 DUST COVER	1	67×85×3T
3	HN21T3A00-01	3단 신축 실린더 3rd EXTENSION CYLINDER	1	H01-4131	13		소켓 볼트 SOCKET BOLT	2	M6×P1.0×10L
4	SS25T0010	핀 PIN-A	1	Φ25×73L	14		케이블 TI CALBE	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
1st EXTENSION CYLINDER

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SPARE PARTS LIST



1단 신축 실린더
1st EXTENSION CYLINDER

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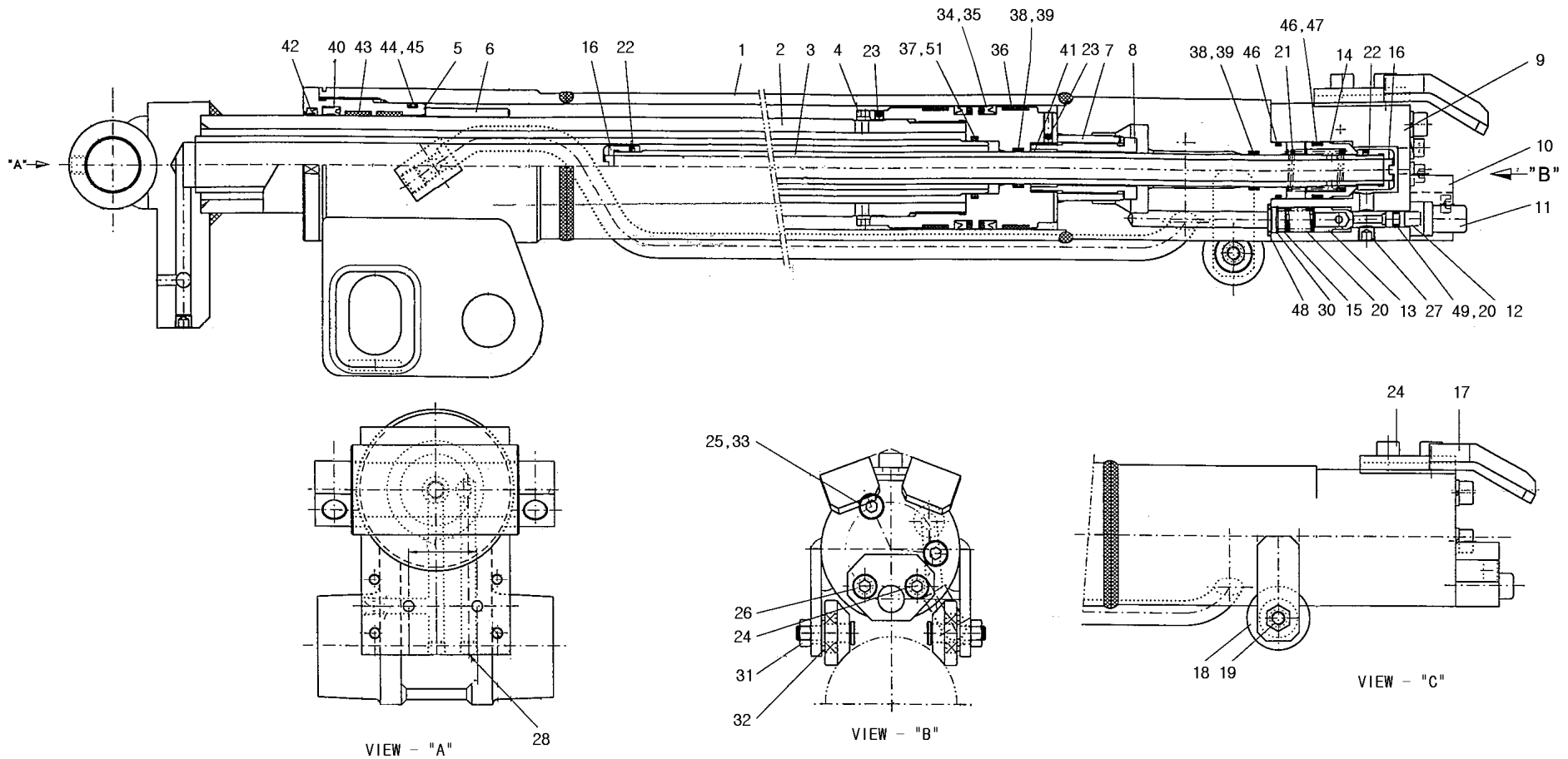
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-	H01-4129 HN21T1A00-01	1단 신축 실린더 1st EXTENSION CYLINDER	1		10	SS33T10A1	브라켓 BRACKET - A	1	
1	KL08T1010-01	튜브 결합체 TUBE ASSY	1		11	SS33T10A2	스풀 가이드 SPOOL GUIDE	1	
2	KL08T1020-01	로드 결합체 ROD ASSY	1		12	SS33T10A3	스풀 SPOOL	1	
3	HN21T1030-01	리트랙터 RETRACTOR	1		13	SS33T10A4	밸브 VALVE - A	1	
4	SH16T1040-01	피스톤 PISTON	1		14	SS33T10A5	밸브 VALVE - B	1	
5	SH46T1040	로드 커버 ROD COVER	1		15	SS33T10A6	와셔 WASHER - A	1	
6	KL08T1040	스페이서 SPACER	1		16	HN01T1060	멈춤 너트 STOP NUT	2	
7	SS33T1070	쿠션 링 CUSHION RING	1		17	HN03T1A40	브라켓 결합체 BRACKET ASS'Y	1	
8	SS33T1080	쿠션 가이드 CUSHION GUIDE	1		18	KL08T10P1	롤러 패드 ROLLER PAD	2	Φ36×14W
9	SH16T1090	밸브 바디 VALVE BODY	1		19	KL08T1070	롤러 샤프트 ROLLER SHAFT	2	Φ13×33.5L

SPARE PARTS LIST



1단 신축 실린더
1st EXTENSION CYLINDER

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2013. 05.



SPARE PARTS LIST



1단 신축 실린더
1st EXTENSION CYLINDER

HIAB160TM-6 8:0
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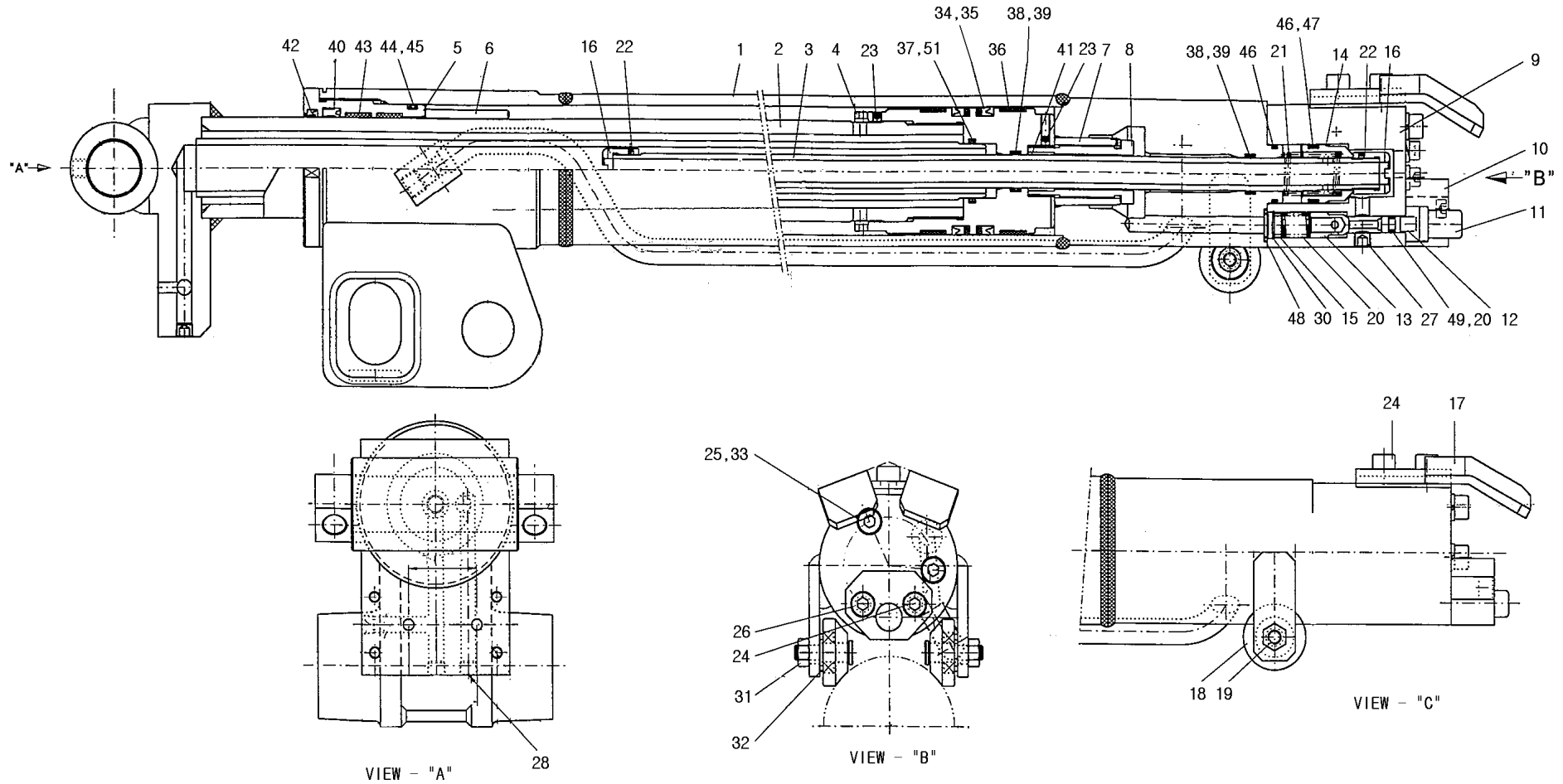
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20	SS33T10S1	스프링 SPRING - A	1		30		스냅 링 SNAP RING	1	D14 (구멍용) *
21	SS33T10S2	스프링 SPRING - B	1		31		나일론 너트 LYLON NUT	2	M8×P1.25 *
22		멈춤 나사 SCREW, SET	2	M3×P0.5×3L *	32		평 와셔 WASHER, PLAIN	2	Φ10×2T *
23		멈춤 나사 SCREW, SET	2	M6×P1.0×6L *	33		스프링 와셔 WASHER, SPRING	2	M8 용 *
24		소켓 볼트 SOCKET BOLT	2	M8×P1.25×35L *	34		피스톤 패킹 PACKING, PISTON	2	OSI 70 FU 0846 LO *
25		소켓 볼트 SOCKET BOLT	2	M8×P1.25×100L *	35		백업 링 RING, BACK-UP	2	Φ60×Φ70×t3.0 *
26		소켓 볼트 SOCKET BOLT	1	M8×P1.25×110L *	36		웨어 링 RING, WEAR	2	Φ65×Φ70×15w *
27		플러그 PLUG	2	PT1/8×7L *	37		O-링 O-RING	1	1B G30 *
28		플러그 PLUG	2	PT1/4×10L *	38		O-링 O-RING	2	1B P18 *
29		베어링 BEARING	2	# 6900ZZ *	39		백업 링 RING, BACK-UP	4	(T-2) P18 *

SPARE PARTS LIST



1단 신축 실린더
1st EXTENSION CYLINDER

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2013. 05.



SPARE PARTS LIST



1단 신축 실린더
1st EXTENSION CYLINDER

HIAB160TM-6 8:0
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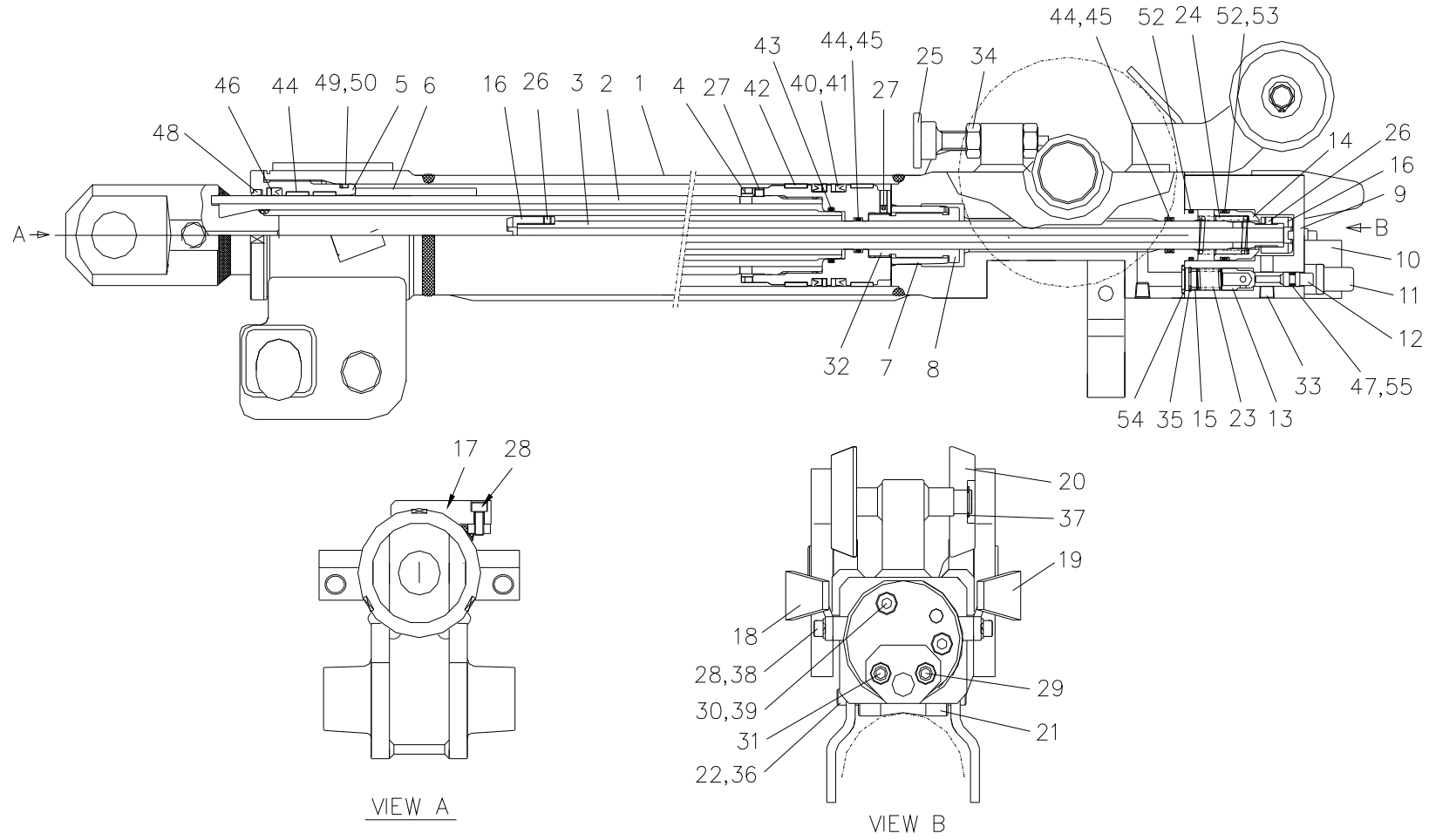
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40		로드 패킹 PACKING, ROD	1	NI-300 * (Φ55×Φ65×10W)	50		백업 링 RING, BACK-UP	1	(T-3) P6 *
41		부쉬 DU BUSH	1	MB 1815 DU *	51		백업 링 RING, BACK-UP	1	(T-3) G30 *
42		더스트 시일 SEAL, DUST	1	KDD 55 *					
43		웨어 링 RING, WEAR	2	Φ55×Φ60×15W *					
44		O-링 O-RING	1	1B G65 *	-	S01-2127	시일 키트 SEAL KIT	1	PARTS MARKED *
45		백업 링 RING, BACK-UP	1	(T-3) G65 *					
46		O-링 O-RING	2	Φ28×Φ33 *					
47		백업 링 RING, BACK-UP	2	Φ28×Φ33 *					
48		O-링 O-RING	2	1B P14 *					
49		O-링 O-RING	1	1A P6 *					

SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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2013. 05.



SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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2013. 05.

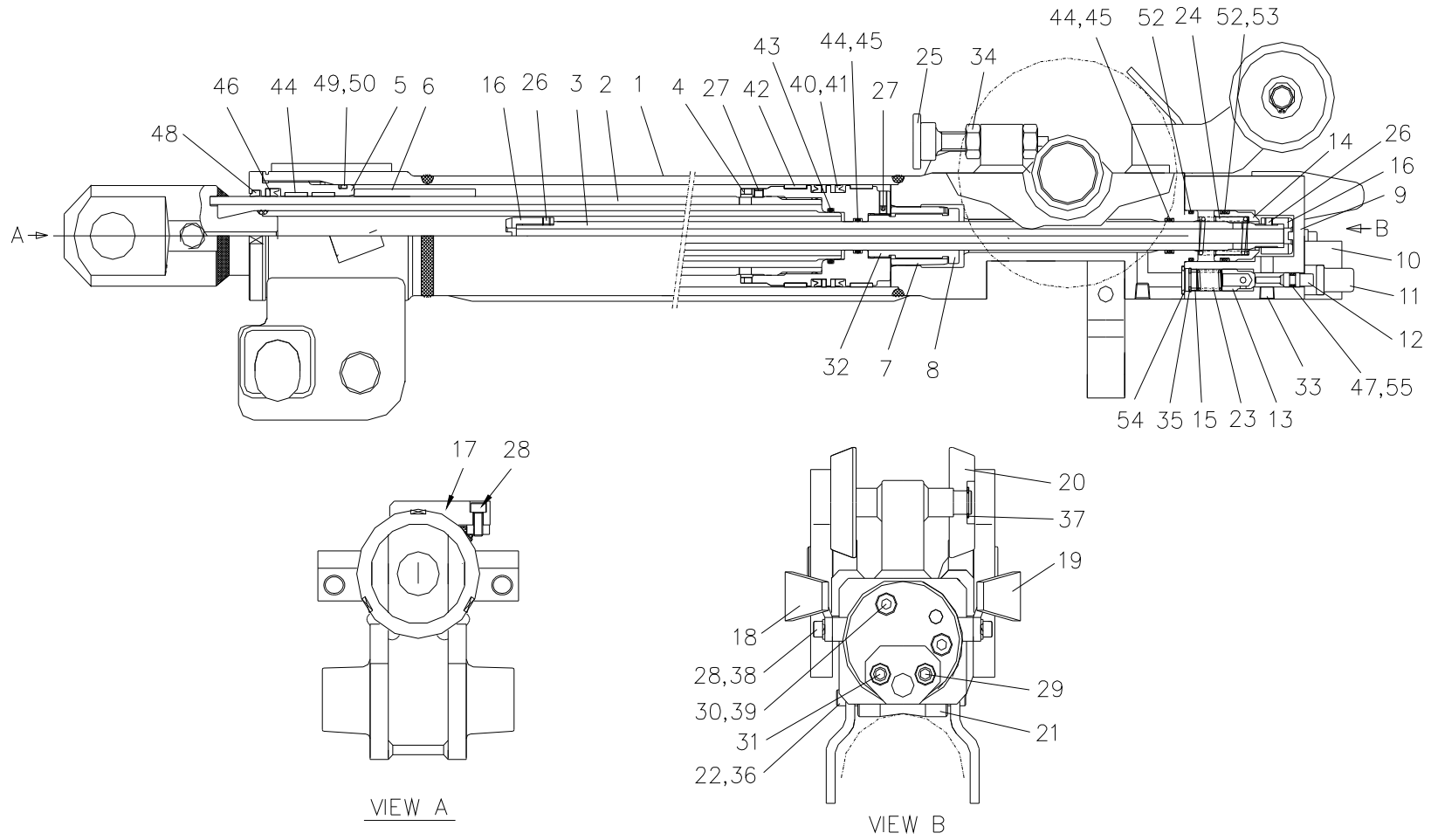
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-	H01-4130 HN21T2A00-01	2단 신축 실린더 2nd EXTENSION CYLINDER	1		10	SS33T10A1	브라켓 BRACKET - A	1	
1	HN21T2A10	튜브 결합체 TUBE ASSY	1		11	SS33T10A2	스풀 가이드 SPOOL GUIDE	1	
2	KL08T2020-02	로드 결합체 ROD ASSY	1		12	SS33T10A3	스풀 SPOOL	1	
3	HN21T2030-01	리트랙터 RETRACTOR	1		13	SS33T10A4	밸브 VALVE - A	1	
4	SH16T0040-01	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	KL08T2A40-02	브라켓 결합체 - R BRACKET ASS'Y - R	1	
9	SS33T1090	밸브 바디 VALVE BODY	1		19	KL08T2A50-02	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

HIAB160TM-6 9:0
2013. 05.

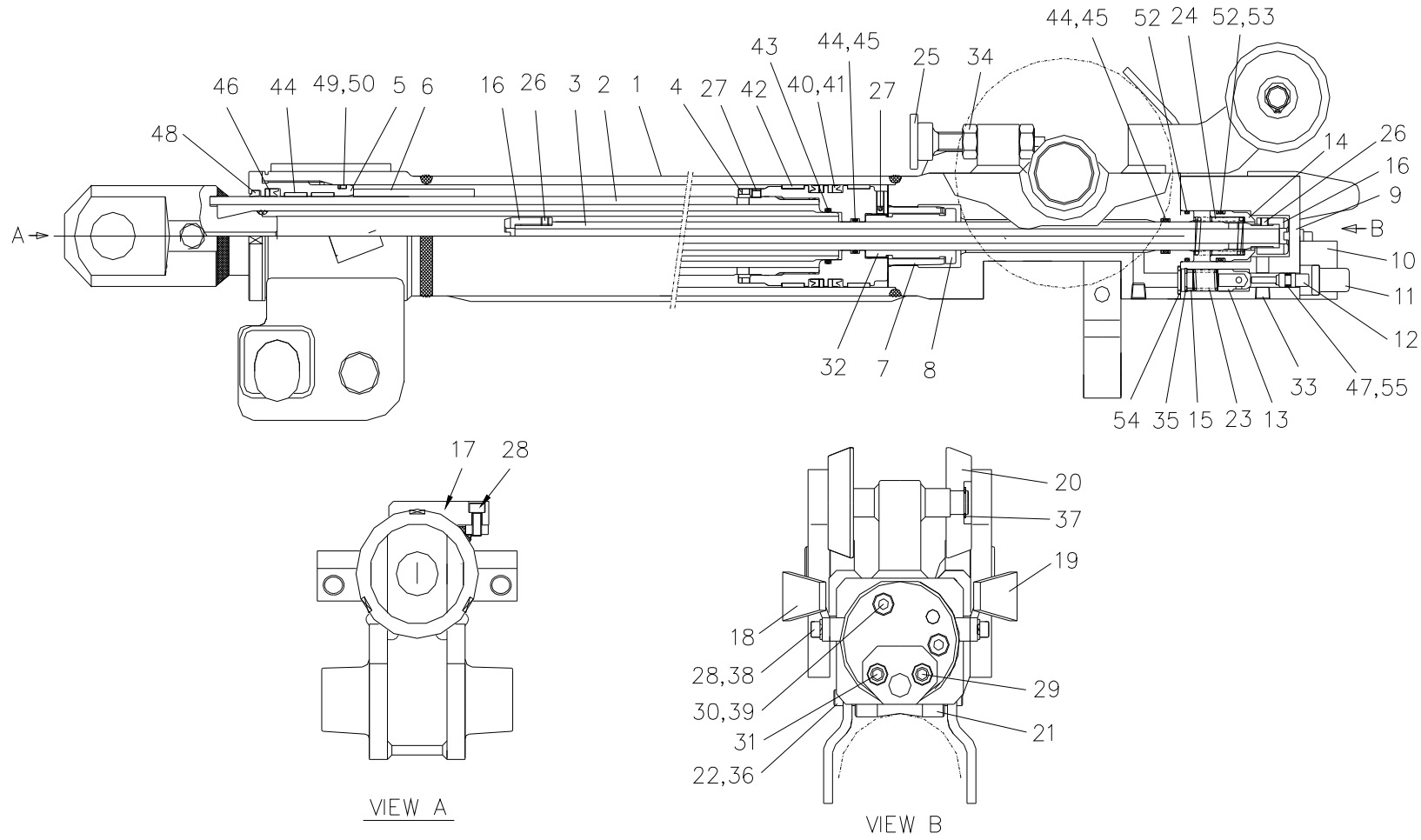
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20	SH17T2040	가이드 롤러 GUIDE ROLLER	2		30		소켓 볼트 SOCKET BOLT	2	M8×P1.25×100L *
21	KL08T20P2	롤러 패드 ROLLER PAD	1		31		소켓 볼트 SOCKET BOLT	1	M8×P1.25×110L *
22	KL05ET190	롤러 샤프트 ROLLER SHAFT	1		32		부쉬 DU BUSH	1	MB 1815 DU
23	SS33T10S1	스프링 SPRING - A	1		33		플러그 PLUG	2	PT1/8×7L *
24	SS33T10S2	스프링 SPRING - B	1		34		너트 NUT	3	M12×P1.75×10H *
25	SS33T20B1-01	체크 볼트 CHECK BOLT	1	M12×P1.75×85L	35		스냅 링 SNAP RING	1	Φ14 (구멍용) *
26		멈춤 나사 SCREW, SET	2	M3×P0.5×3L *	36		분할 핀 PIN, SPLIT	1	Φ3.2×25L *
27		멈춤 나사 SCREW, SET	2	M6×P1.0×6L *	37		스냅 링 SNAP RING	2	Φ15 (축용) *
28		소켓 볼트 SOCKET BOLT	6	M6×P1.0×15L *	38		스프링 와셔 WASHER, SPRING	4	M6 *
29		소켓 볼트 SOCKET BOLT	1	M8×P1.25×35L *	39		스프링 와셔 WASHER, SPRING	2	M8 *

SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

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SPARE PARTS LIST



2단 신축 실린더
2nd EXTENSION CYLINDER

HIAB160TM-6 9:0
2013. 05.

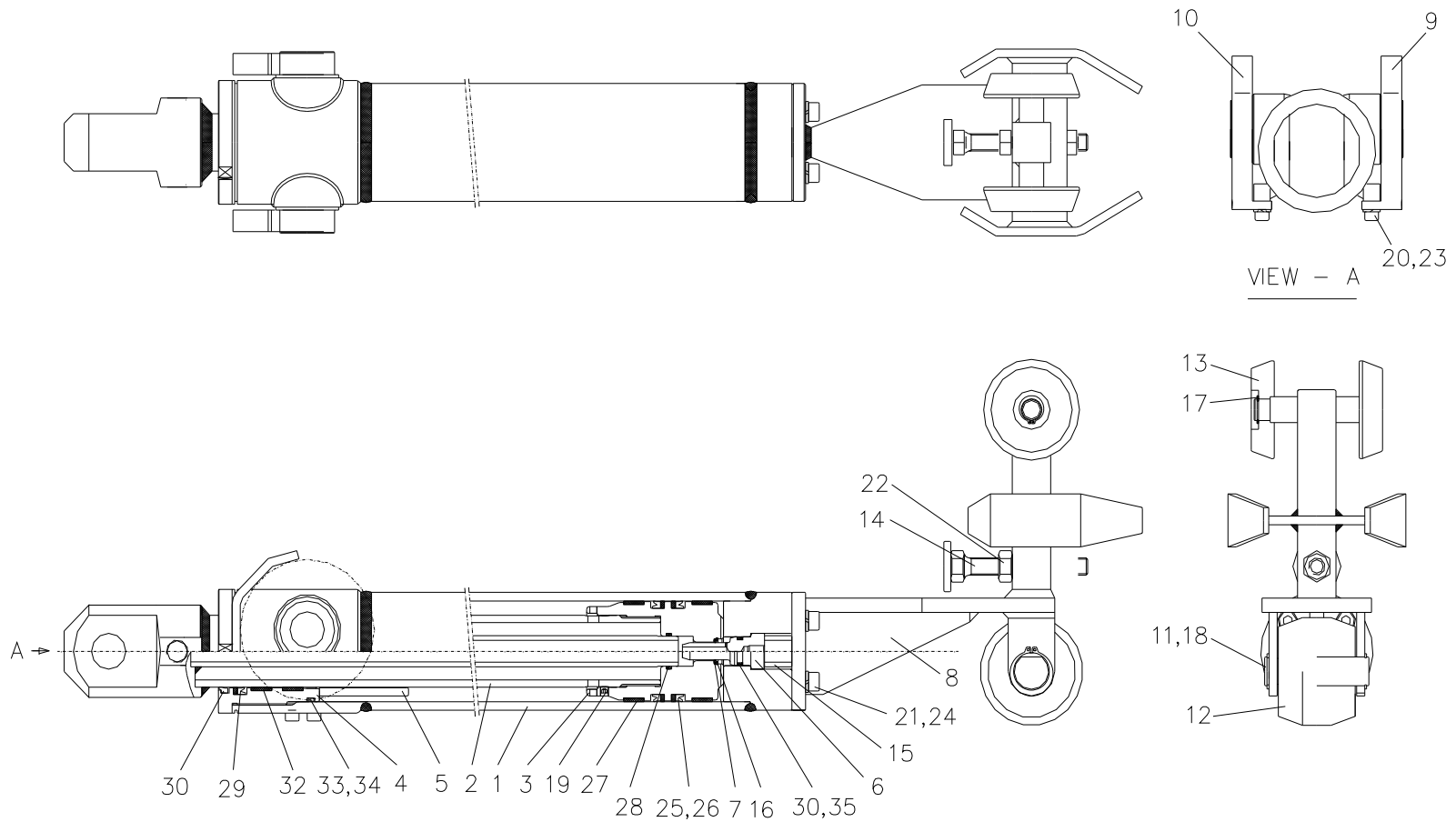
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40		피스톤 패킹 PACKING, PISTON	2	OSI 65 FU 0807 L0 *	50		O-링 O-RING	1	1BG 60 *
41		백업 링 RING, BACK-UP	2	Φ65×Φ55×t3.0 *	51		백업 링 RING, BACK-UP	1	(T-3) G60 *
42		웨어 링 RING, WEAR	2	Φ65×Φ60×15w *	52		O-링 O-RING	2	Φ28×Φ33 *
43		O-링 O-RING	1	1B G30 *	53		백업 링 RING, BACK-UP	2	Φ28×Φ33 *
44		O-링 O-RING	2	1B P18 *	54		O-링 O-RING	2	1B P14 *
45		백업 링 RING, BACK-UP	4	(T-3) P18 *	55		O-링 O-RING	1	1AP 6 *
46		로드 패킹 PACKING, ROD	1	NI-300 Φ50×Φ60×10W *					
47		백업 링 RING, BACK-UP	1	(T-3) P6 *					
48		더스트 시일 SEAL, DUST	1	KDD 50 *	-	S01-2128	시일 세트 SEAL SET	1	PARTS MARKED *
49		웨어 링 RING, WEAR	2	Φ50×Φ55×15w *					

SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

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2013. 05.



SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

HIAB160TM-6 10:0
2013. 05.

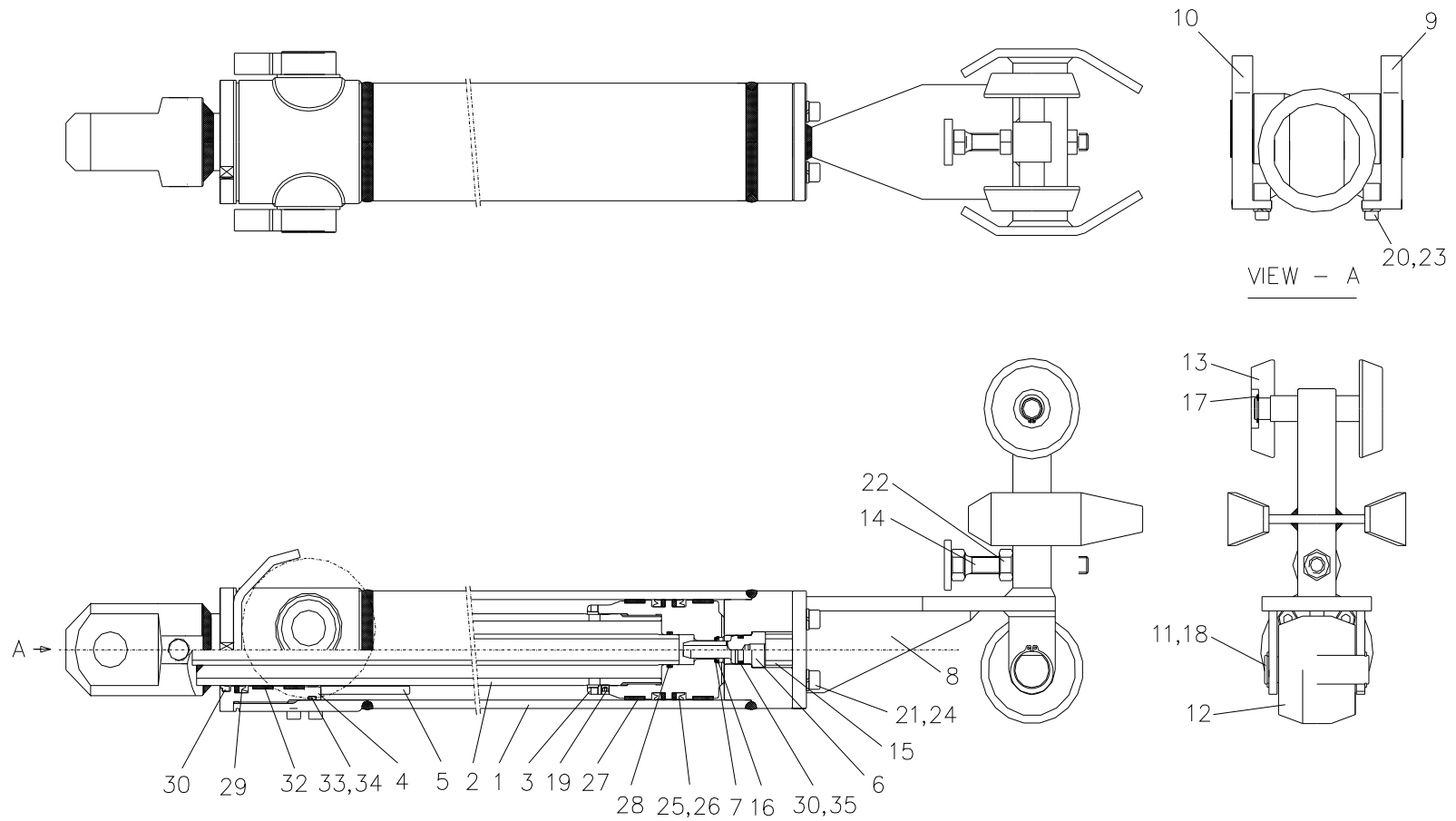
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-	H01-4131 HN21T3A00-01	3단 신축 실린더 3rd EXTENSION CYLINDER	1		10	KL25T3040	브라켓 - L BRACKET - L	1	
1	HN08T3010-06	튜브 결합체 TUBE ASSY	1		11	SH39T2060	롤러 샤프트 SHAFT, ROLLER	1	Φ20×79L
2	HN08T3020-02	로드 결합체 ROD ASSY	1		12	SH09T2040	가이드 롤러 ROLLER, GUIDE	1	Φ75×56L
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 (축용) *
8	HN03T3A10	브라켓 BRACKET ASS'Y	1		18		스냅 링 SNAP RING	2	Φ20 (축용) *
9	KL25T3030	브라켓 -R BRACKET - R	1		19		멈춤 나사 SCREW, SET	1	M6×P1.0×6L *

SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

HIAB160TM-6 10:0
2013. 05.



SPARE PARTS LIST



3단 신축 실린더
3rd EXTENSION CYLINDER

HIAB160TM-6 10:0
2013. 05.

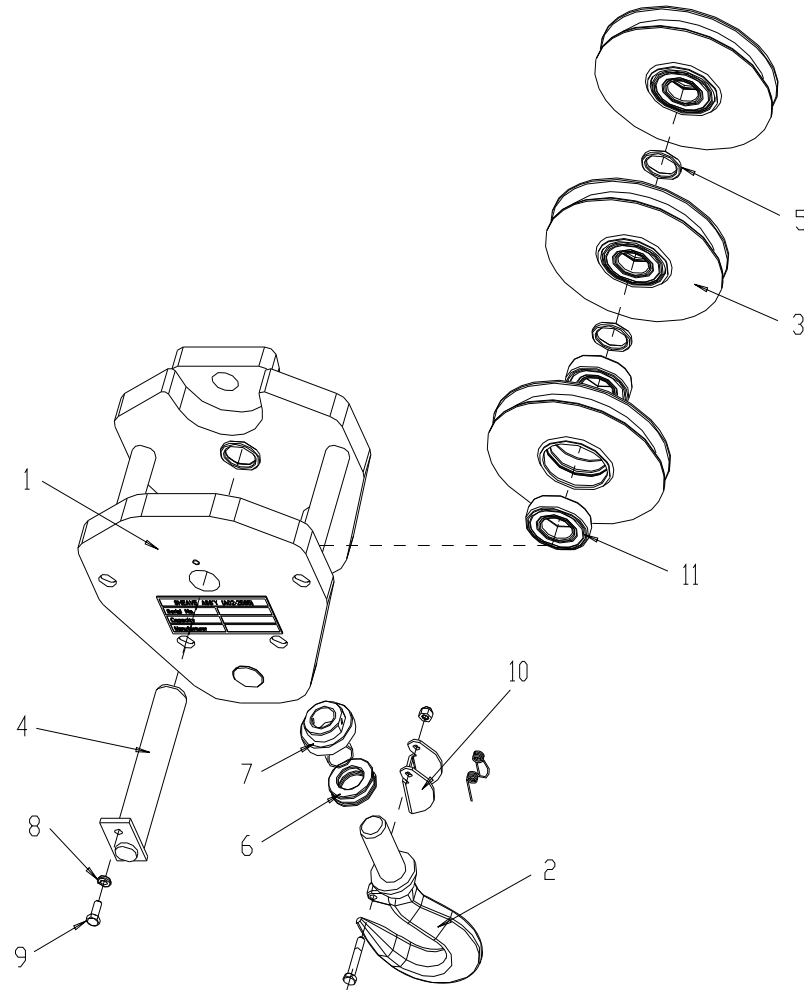
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20		소켓 볼트 SOCKET BOLT	4	M6×P1.0×15L *	30		백업 링 RING, BACK-UP	1	(T-2) P18 *
21		소켓 볼트 SOCKET BOLT	4	M8×P1.25×30L *	31		더스트 시일 SEAL, DUST	1	KDD 50 *
22		너트 NUT	3	M12×P1.75×10H *	32		웨어 링 RING, WEAR	2	Φ50×Φ55×15w *
23		스프링 와셔 WASHER, SPRING	4	M6 *	33		오링 O-RING	1	1B G65 *
24		스프링 와셔 WASHER, SPRING	4	M8 *	34		백업 링 RING, BACK-UP	1	(T-3) G65 *
25		피스톤 패킹 PACKING, PISTON	2	OSI 70 FU 0846 L0 *	35		오링 O-RING	1	1B 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	PARTS MARKED *
29		로드 패킹 PACKING, ROD	1	NI-300 Φ50×Φ60×10W *					

SPARE PARTS LIST



쉬브 결합체
SHEAVE ASS'Y

HIAB160TM-6 11:0
2013. 05.



SPARE PARTS LIST



쉬브 결합체
SHEAVE ASS'Y

HIAB160TM-6 11:0
2013. 05.

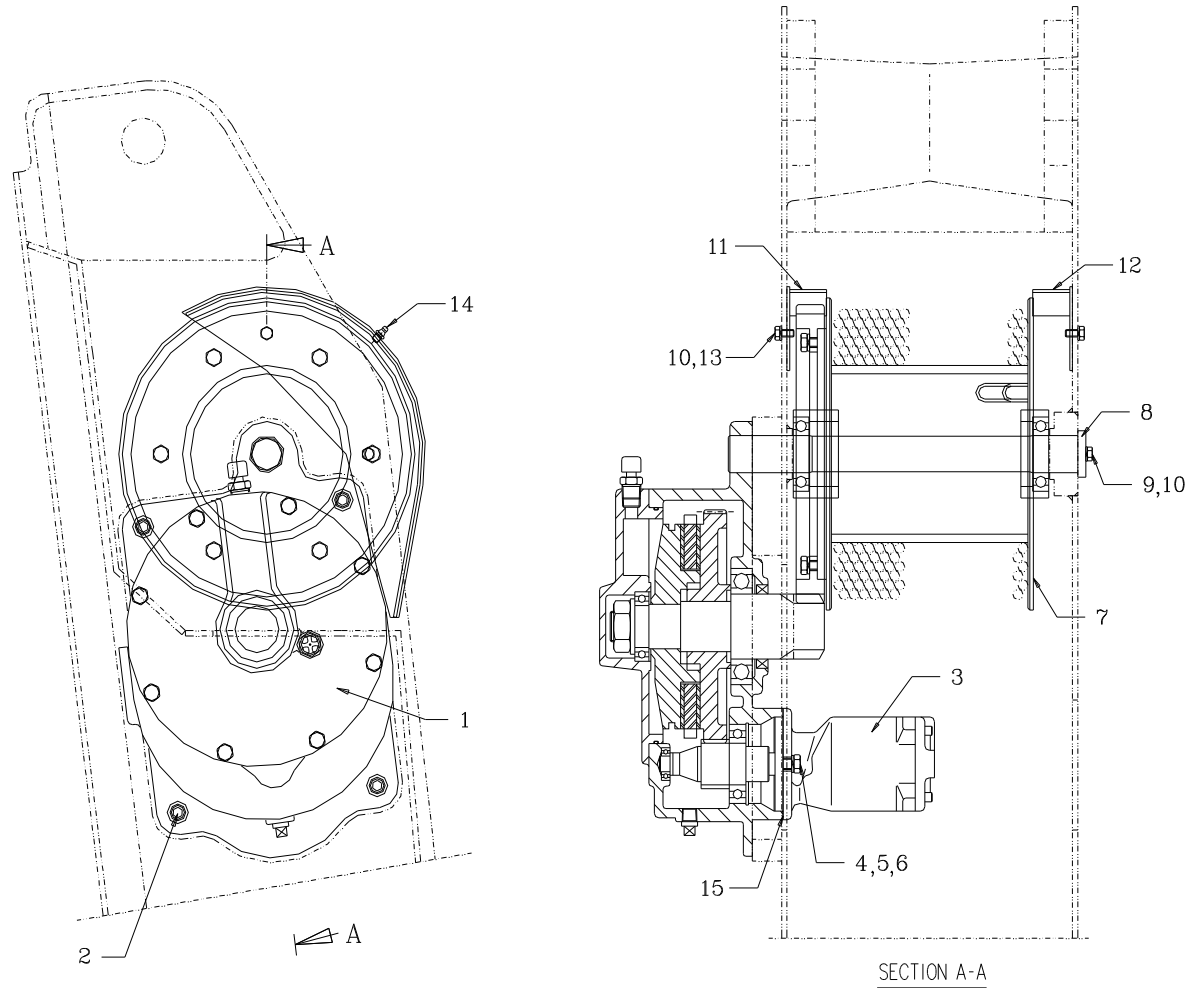
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-	A02-2565	쉬브 결합체 SHEAVE ASS'Y	1		10	S01-1596	아전 클립 결합체 CLIP ASS'Y, SAFETY	1	
1	HK-1002	바디 BODY	1		11	4112074	베어링 RADIAL BALL BEARING	2	B 6207ZZ
2	M01-1780	후크 HOOK	1						
3	HK-0006	쉬브 SHEAVE	3						
4	HK-0008	축 SHAFT	1						
5	HK-0010	스페이서 SPACER	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




원치 장치
WINCH SYSTEM

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2015. 04.



SPARE PARTS LIST

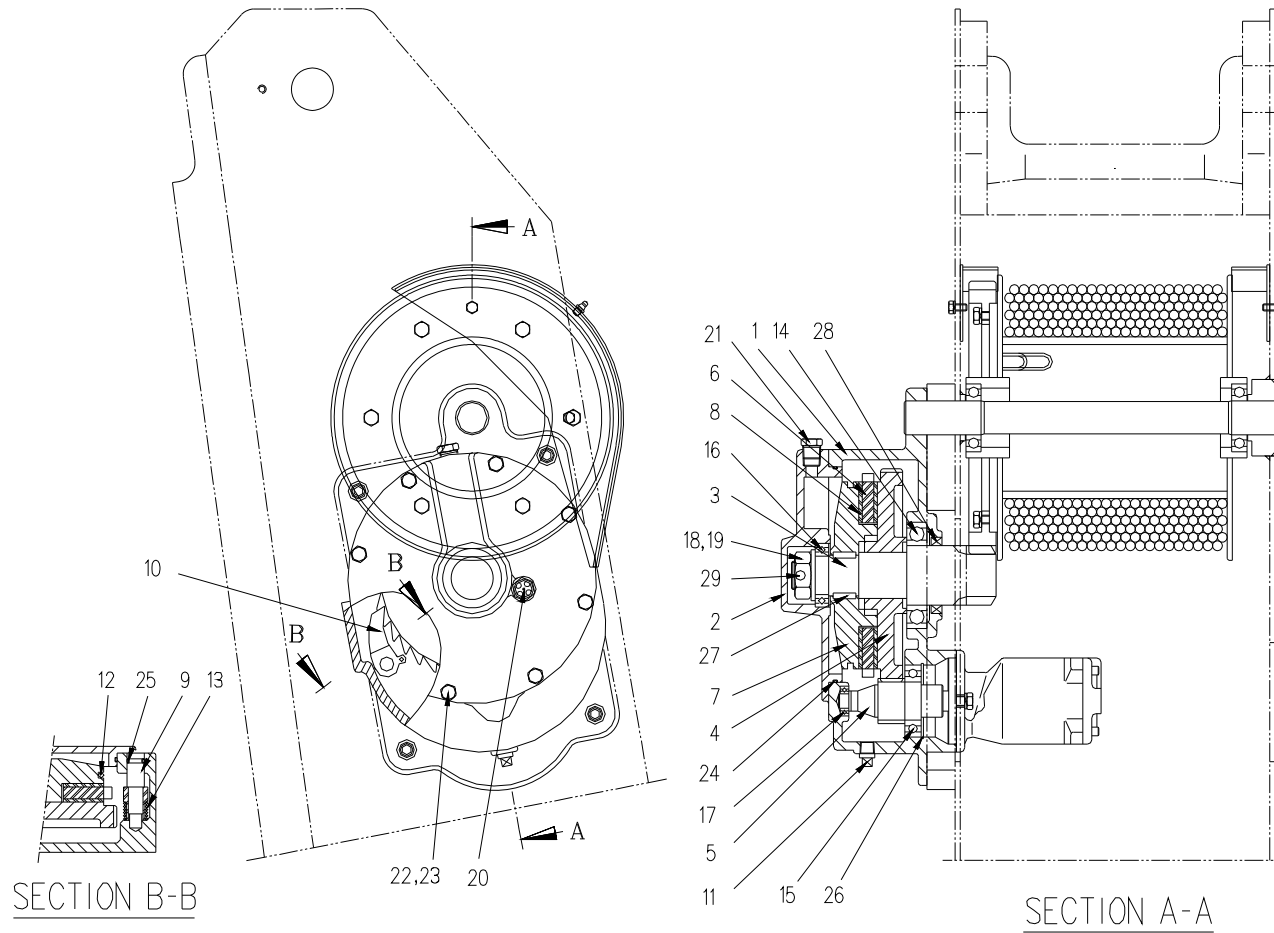
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-	WC-2001	원치 장치 WINCH SYSTEM	1		9	2110926	육각 볼트 BOLT, HEX. HEAD	2	BA8×30
1	H02-0296	감속기 결합체 REDUCER ASS'Y	1		10	3612081	스프링 와셔 WASHER, SPRING	6	WS8
2	2611547	구멍 붙이 육각 볼트 BOLT, HEX. SOCKET HEAD	4	BB12×40	11	WC-2006	커버 COVER, LH	1	
3	WC-0003	원치 모터 MOTOR, WINCH	1	JMF-36-01	12	WC-2008	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-MT6×1
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-2002	드럼 DRUM ASSY	1						
8	WC-2005	축 SHAFT	1						

SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

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2015. 04.



SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

HIAB160TM-6 13:0
2015. 04.

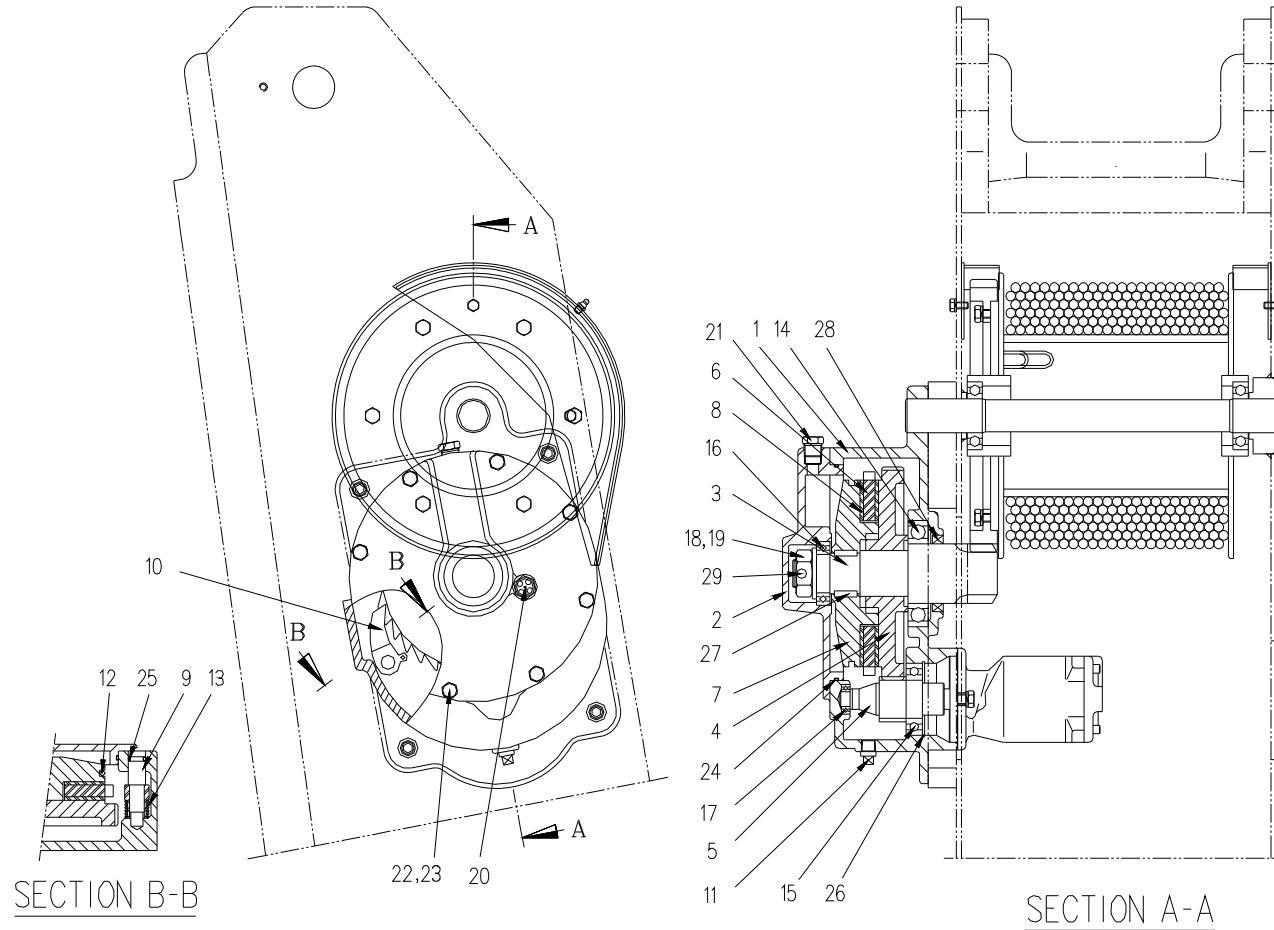
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-	H02-0296	원치 감속기 결합체 WINCH REDUCER ASS'Y	1		10	DM-06-11-1010	후크 HOOK	1	
1	DM-06-11-1001-02	케이스 CASE	1		11	DM-06-11-1011	캡 CAP	1	PT3/8
2	DM-06-11-1002	케이스 커버 COVER, CASE	1		12	DM-06-11-1012	스프링 SPRING	1	
3	DM-06-11-1003	출력 기어 GEAR, OUTPUT	1		13	DM-06-11-1013	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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2015. 04.



SPARE PARTS LIST



원치 감속기 결합체
WINCH REDUCER ASS'Y

HIAB160TM-6 13:0
2015. 04.

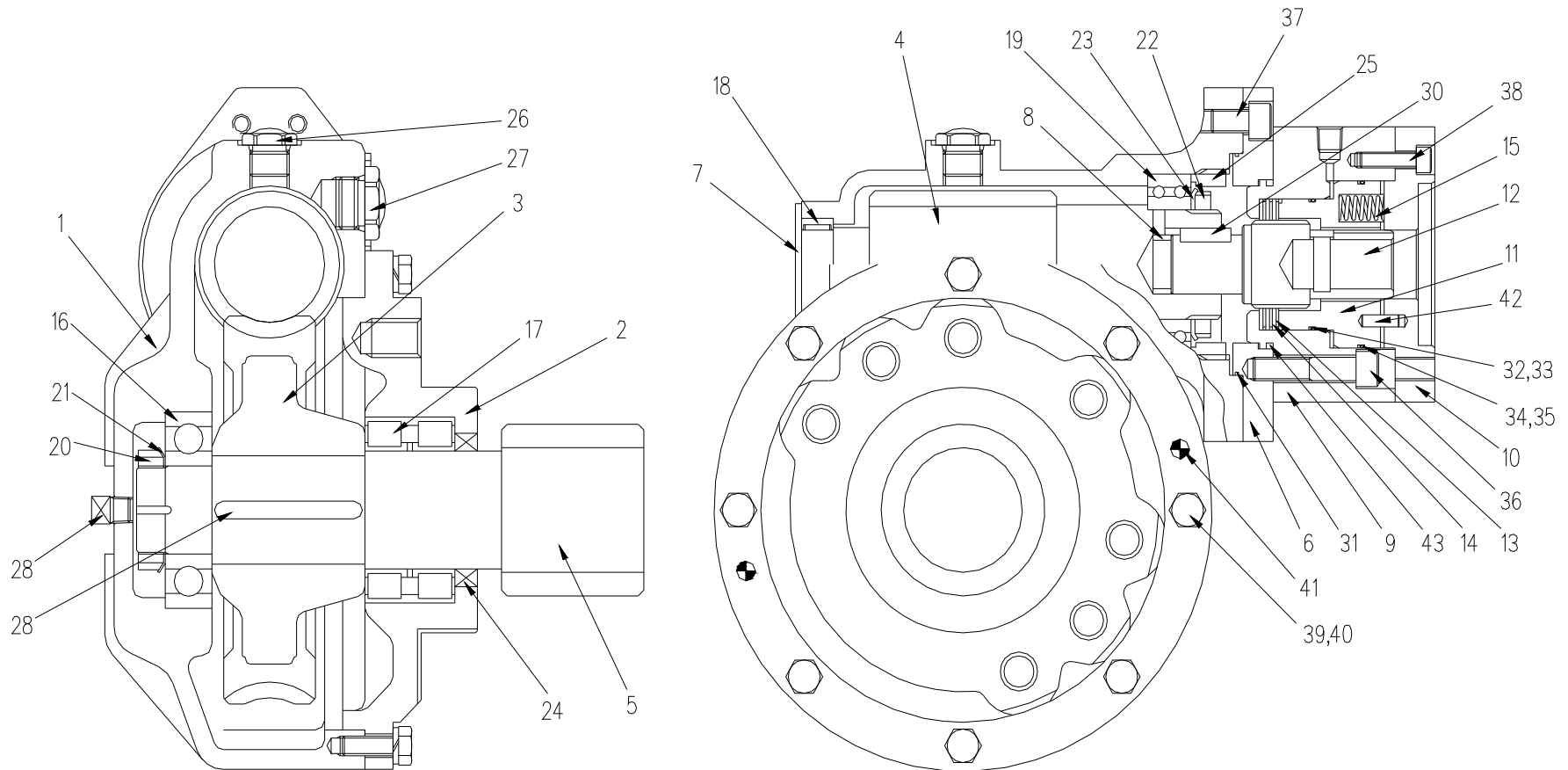
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20	DM-06-11-1016	오일 게이지 GAUGE, OIL	1	PF1/2					
21	DM-06-11-1017	에어 브리더 BRETHER, AIR	1						
22	2111206	육각 볼트 BOLT, HEX. HEAD	8	BA10×25					
23	3612101	스프링 와셔 WASHER, SPRING	8	WS10					
24	DM-06-11-1018	O-링 O-RING	1	273					
25	6010192	O-링 O-RING	1	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

HIAB160TM-6 14 : 0
2013. 05.



SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

HIAB160TM-6 14:0
2013. 05.

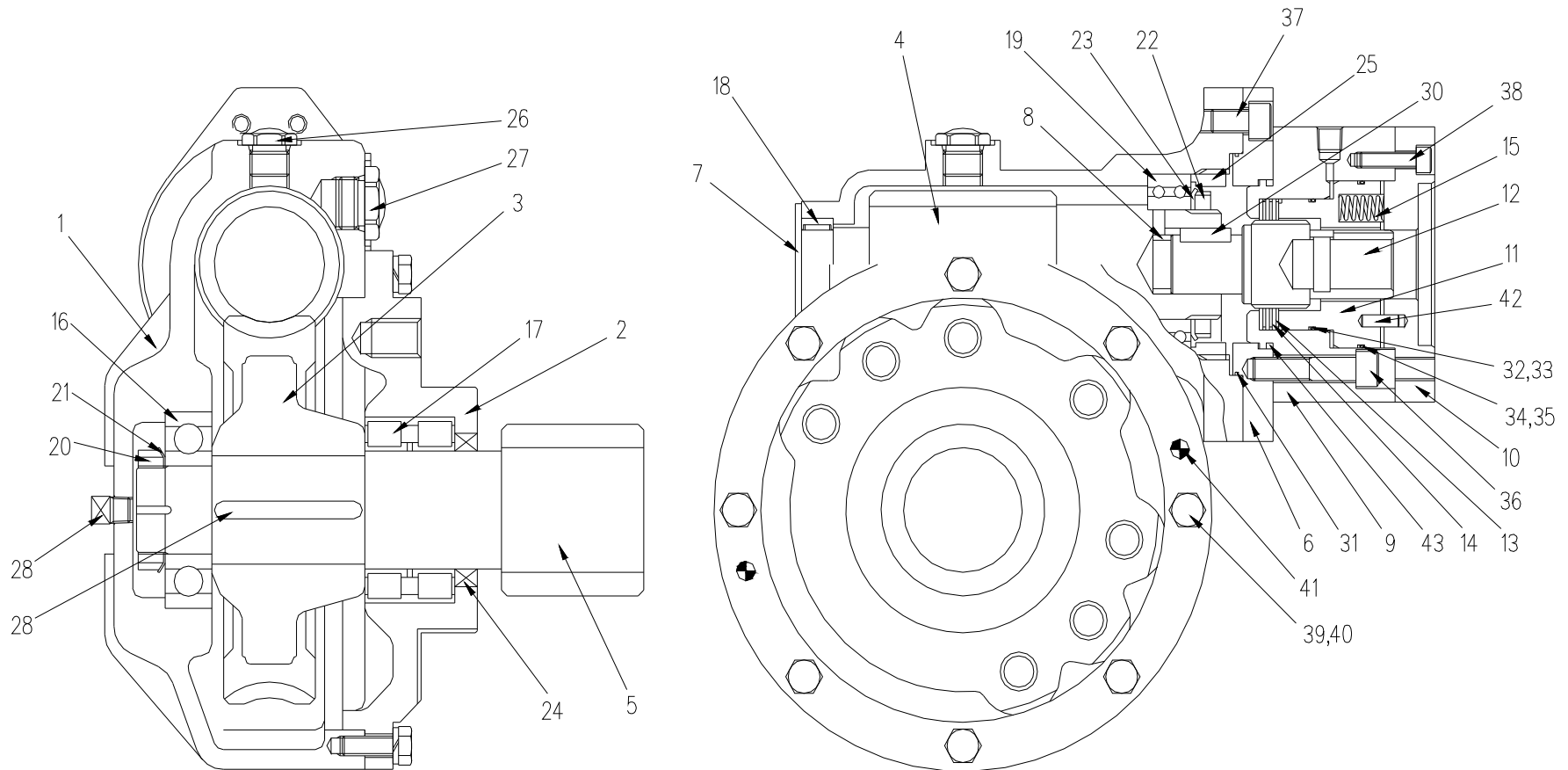
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-	BC1-0003	선회 감속기 SLEWING REDUCER	1		10	07-04-2007	모터 아답터 ADAPTOR, MOTOR	1	
1	07-07-1001	케이스 CASE	1		11	07-04-2037	브레이크 피스톤 PISTON, BRAKE	1	
2	07-07-1002	커버 COVER	1		12	07-04-2909	브레이크 축 SHAFT, BRAKE	1	
3	07-07-1003	웜 기어 GEAR, WORM	1		13	07-04-2033	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	스페이스 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

HIAB160TM-6 14 : 0
2013. 05.



SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

HIAB160TM-6 14 : 0
2013. 05.

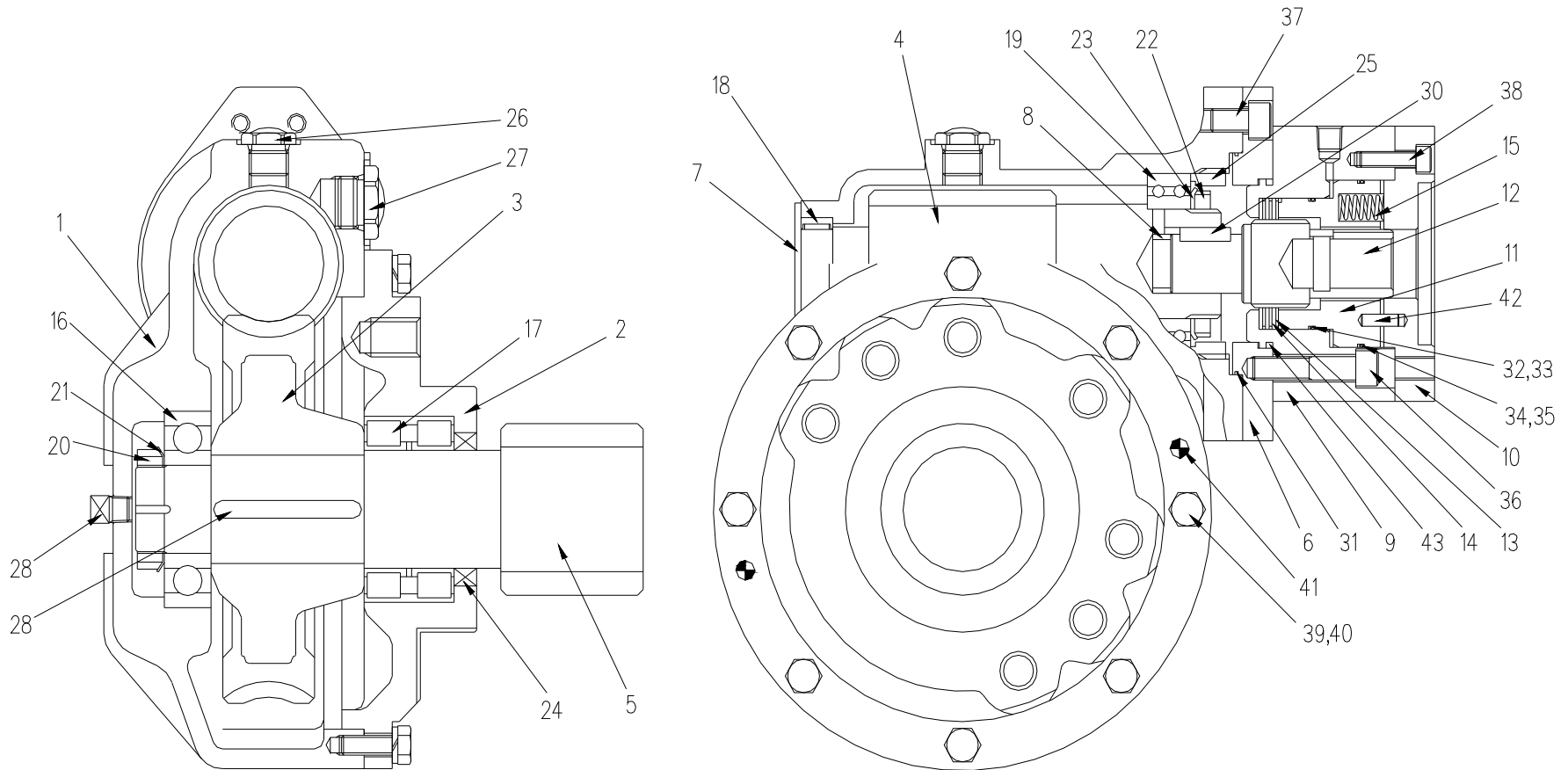
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20	BC1-0003-4	베어링 너트 NUT, BEARING	1	AN09	30	BC1-0003-13	키 KEY	1	
21	BC1-0003-5	베어링 와셔 WASHER, BEARING	1	AW09	31	6012392	O-링 O-RING	1	1B G95
22	BC1-0003-6	베어링 너트 NUT, BEARING	1	AN10	32	6012332	O-링 O-RING	1	1B G65
23	BC1-0003-7	베어링 와셔 WASHER, BEARING	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

HIAB160TM-6 14 : 0
2013. 05.



SPARE PARTS LIST



선회 감속기
SLEWING REDUCER

HIAB160TM-6 14:0
2013. 05.

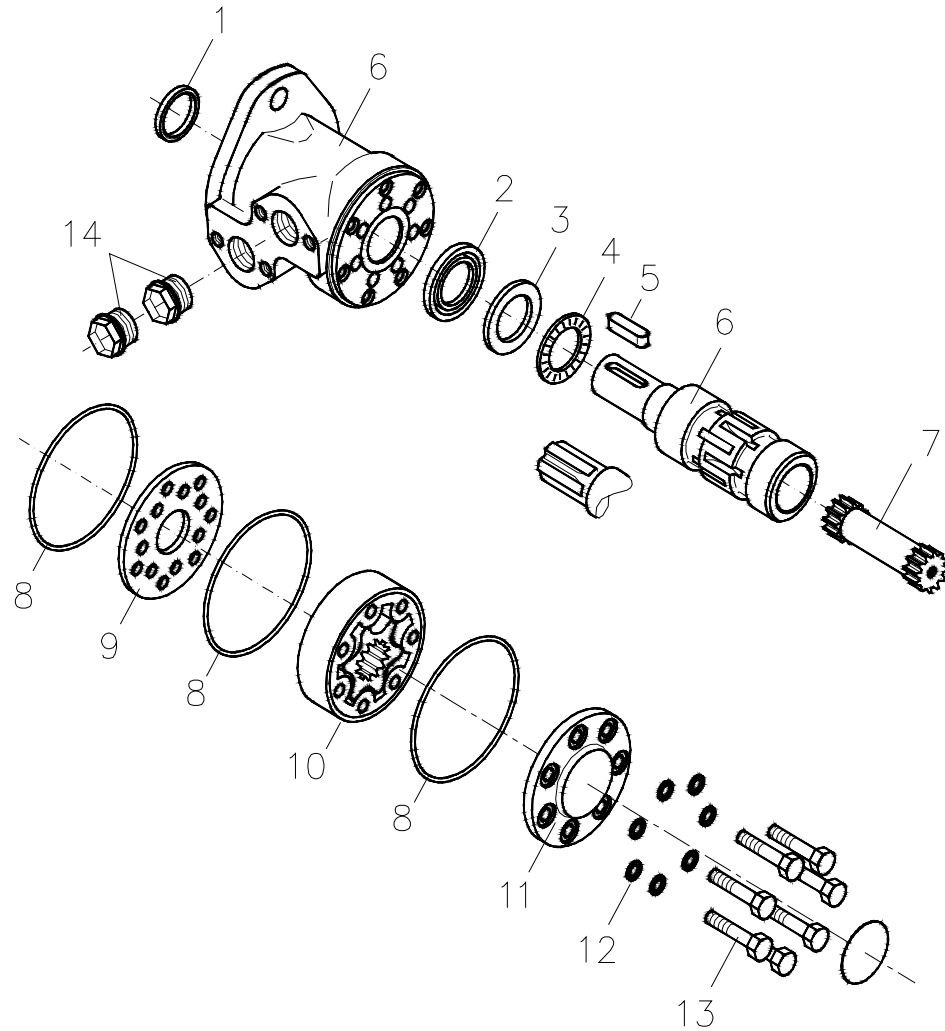
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40	3612101	스프링 와셔 WASHER, SPRING	1	WS10					
41	BC1-0003-14	핀 PIN	1						
42	BC1-0003-15	핀 PIN	1						
43	6012362	O-링 O-RING	1	1B G80					

SPARE PARTS LIST



선회 모터
SLEWING MOTOR

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2013. 05.



SPARE PARTS LIST



선회 모터
SLEWING MOTOR

HIAB160TM-6 15:0
2013. 05.

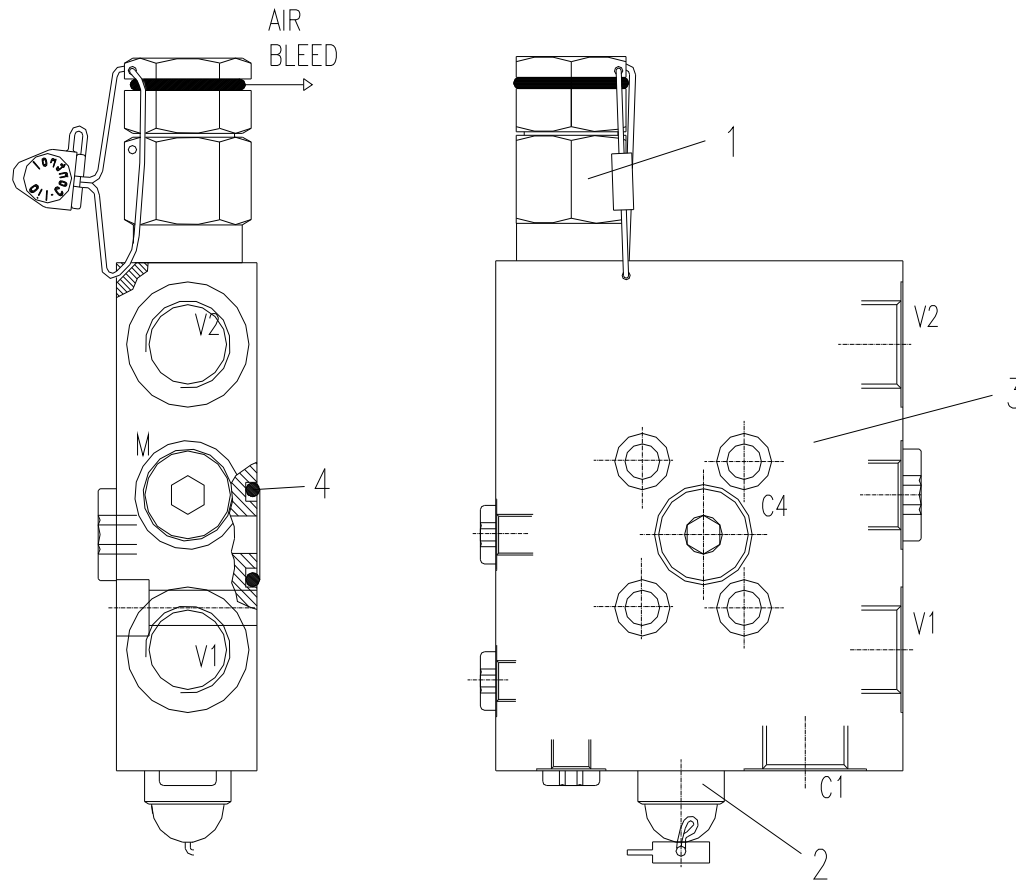
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-	H02-0200	선회 모터 SLEWING MOTOR	1	OMP100C	10	151-1128	기어 휠일 세트 GEAR WHEEL SET	1	W=13.0mm
1	633B0010	더스트 시일 링 DUST SEAL RING	1	35.0×28.5×4.0mm	11	151-1459	커버 END COVER	1	
2	633B0361	축 시일 SHAFT SEAL	1	39.0×28.6×4.9mm, HSN	12	684X0115	와셔 WASHER	7	15.2×8.2×1.0mm
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)

HIAB160TM-6 16:0
2013. 05.



SPARE PARTS LIST



카운터 밸런스 밸브
COUNTER BALANCE VALVE (D)

HIAB160TM-6 16:0
2013. 05.

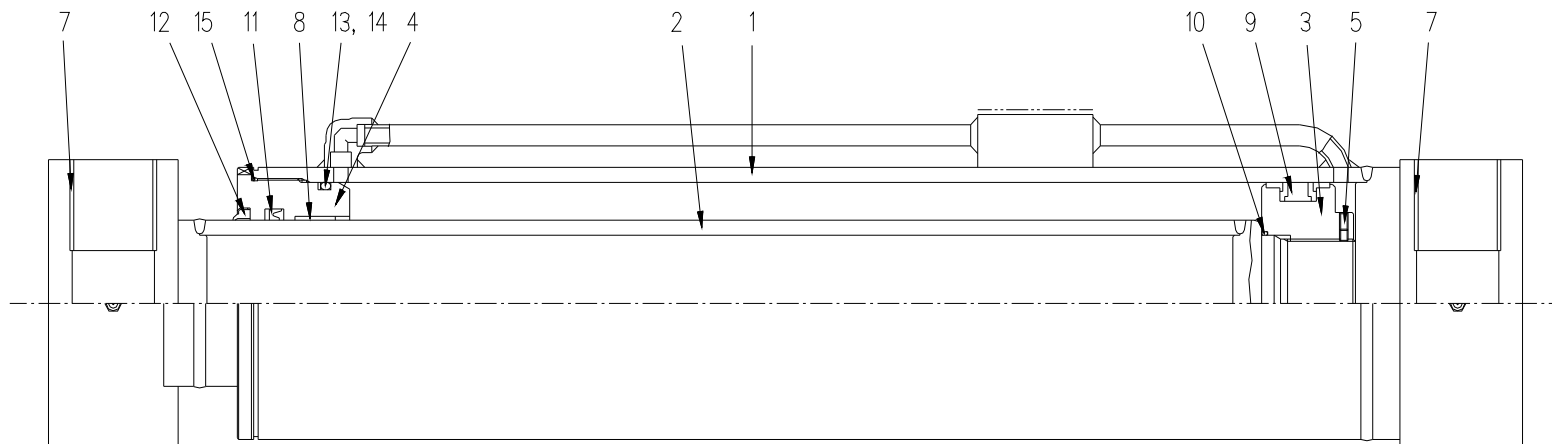
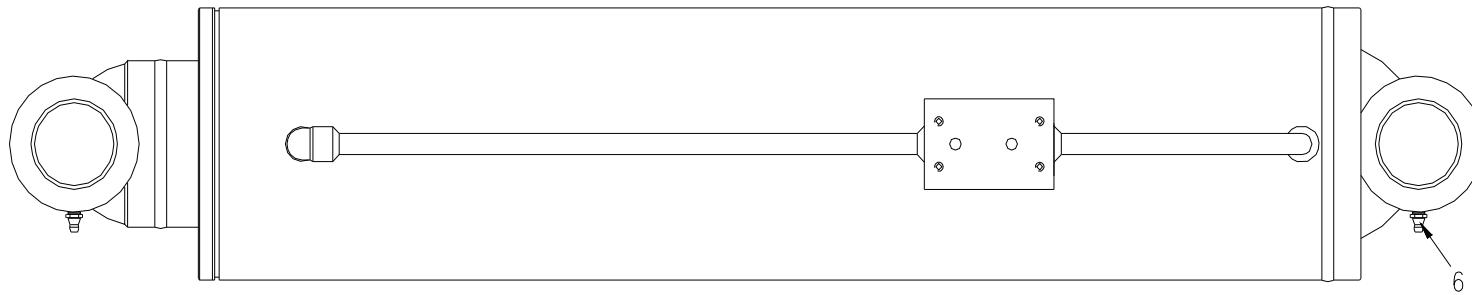
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-	985 2352	카운터 밸런스 밸브 COUNTER BALANCE VALVE (E)	1						
1	()	밸브 VALVE	1	VBSO-SE90 390BAR					
2	()	밸브 VALVE	1	VS5 310 BAR					
3	()	바디 BODY	1						
4	984 4899	오링 O-RING	1						

SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB160TM-6 17:0
2013. 05.



SPARE PARTS LIST



데릭 실린더
DERRICK CYLINDER

HIAB160TM-6 17:0
2013. 05.

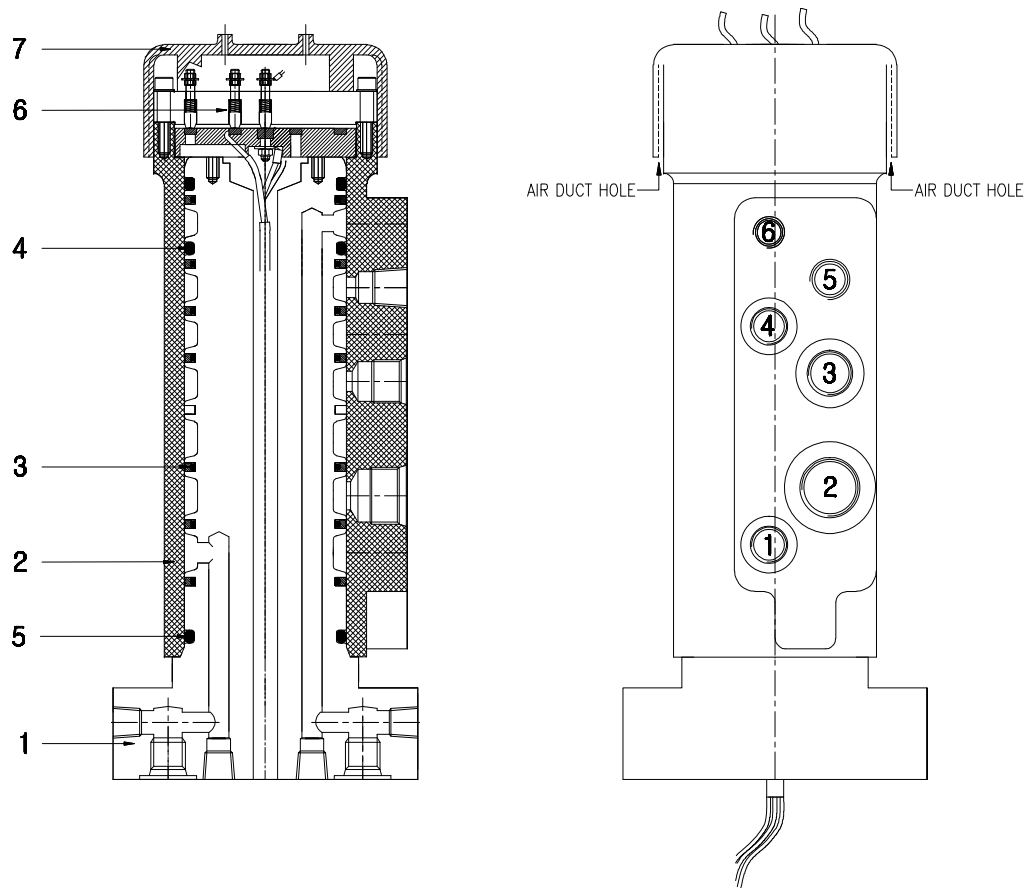
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-	H01-2170	데릭 실린더 DERRICK CYLINDER	1	HN52D0000	10	6012412	오링 O - RING	1	1B G105
1	HN52D0010	튜브 결합체 TUBE ASS'Y	1		11	S01-2189	로드 패킹 ROD PACKING	1	NI-300 (D105×F120×12W)
2	HN52D0020	로드 결합체 ROD ASS'Y	1		12	6111341	더스트 와이퍼 WIPER, DUST	1	KWU 105
3	HN52D0030	피스톤 PISTON	1		13	6012502	오링 O - RING	1	1B G150
4	SH15DA040-01	로드 커버 ROD COVER	1		14	6035911	백업 링 RING, BACK UP	1	T3 G150
5	2350466	멈춤 나사 SCREW, SET	1	BV6×10L	15	6012492	오링 O - RING	1	1B G145
6	4610702	그리스 니플 NIPPLE, GREASE	2	A-PT1/8					
7	4325451	DX 부싱 BUSHING, DX	4	PM5560DX					
8	S01-0867	DU 부싱 BUSHING, DU	1	NB10530DU	-	S01-2126	시일 키트 KIT, SEAL	1	
9	-	피스톤 패킹 PISTON PACKING	1	PCB 1A1600-NCRO					

SPARE PARTS LIST



로타리 조인트 결합체
ROTARY JOINT ASS'Y

HIAB160TM-6 18 : 1
2015. 04.



SPARE PARTS LIST



로타리 조인트 결합체
ROTARY JOINT ASS'Y

HIAB160TM-6 18:1
2015. 04.

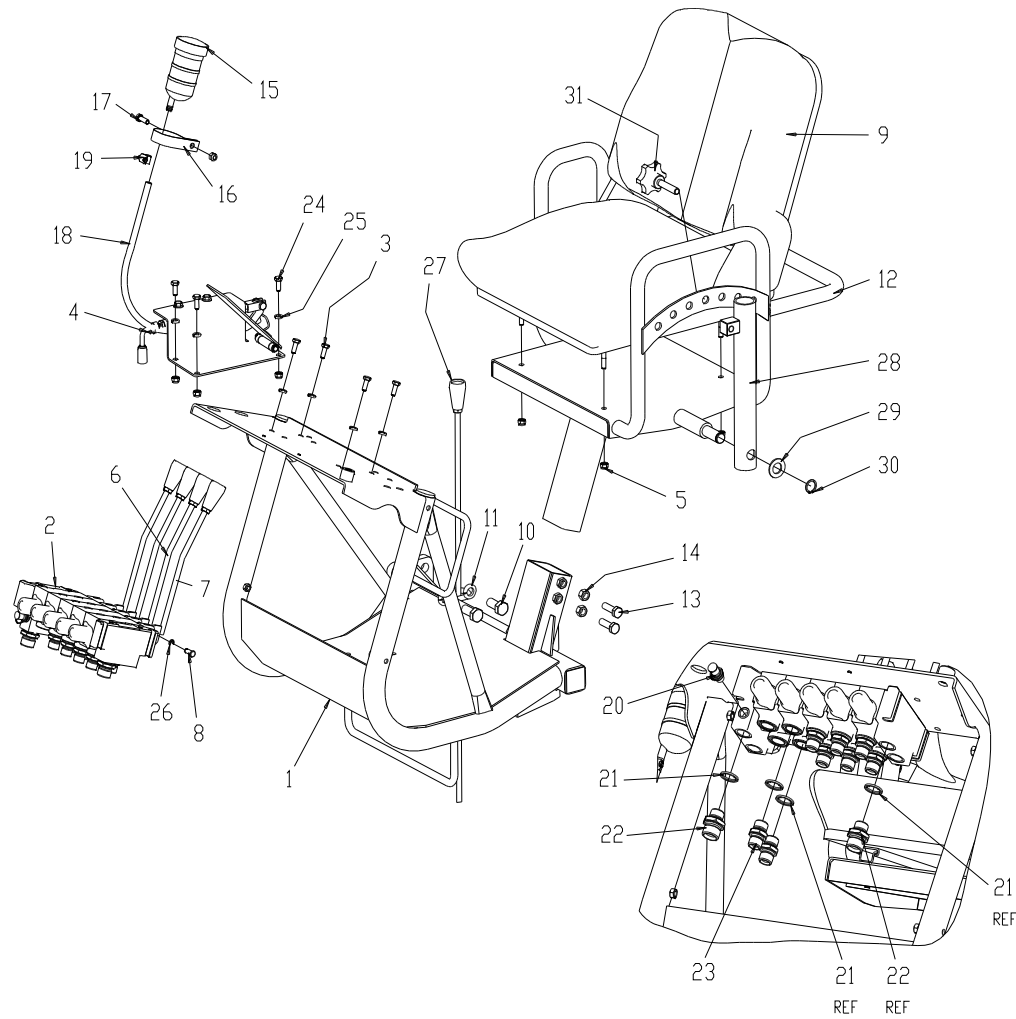
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-	A02-1740	로타리 조인트 결합체 ROTARY JOINT ASS'Y	1						
1	-	이너 조인트 INNER JOINT	1						
2	-	아웃 조인트 OUTER JOINT	1						
3	-	시일 SEAL	7						
4	-	오링 O-RING	2						
5	-	오링 O-RING	1						
6	-	슬립 링 결합체 SLIP RING ASS'Y	1						
7	-	고무 캡 RUBBER CAP	1						

SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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SPARE PARTS LIST



운전석 결합체
TOP SEAT ASS'Y

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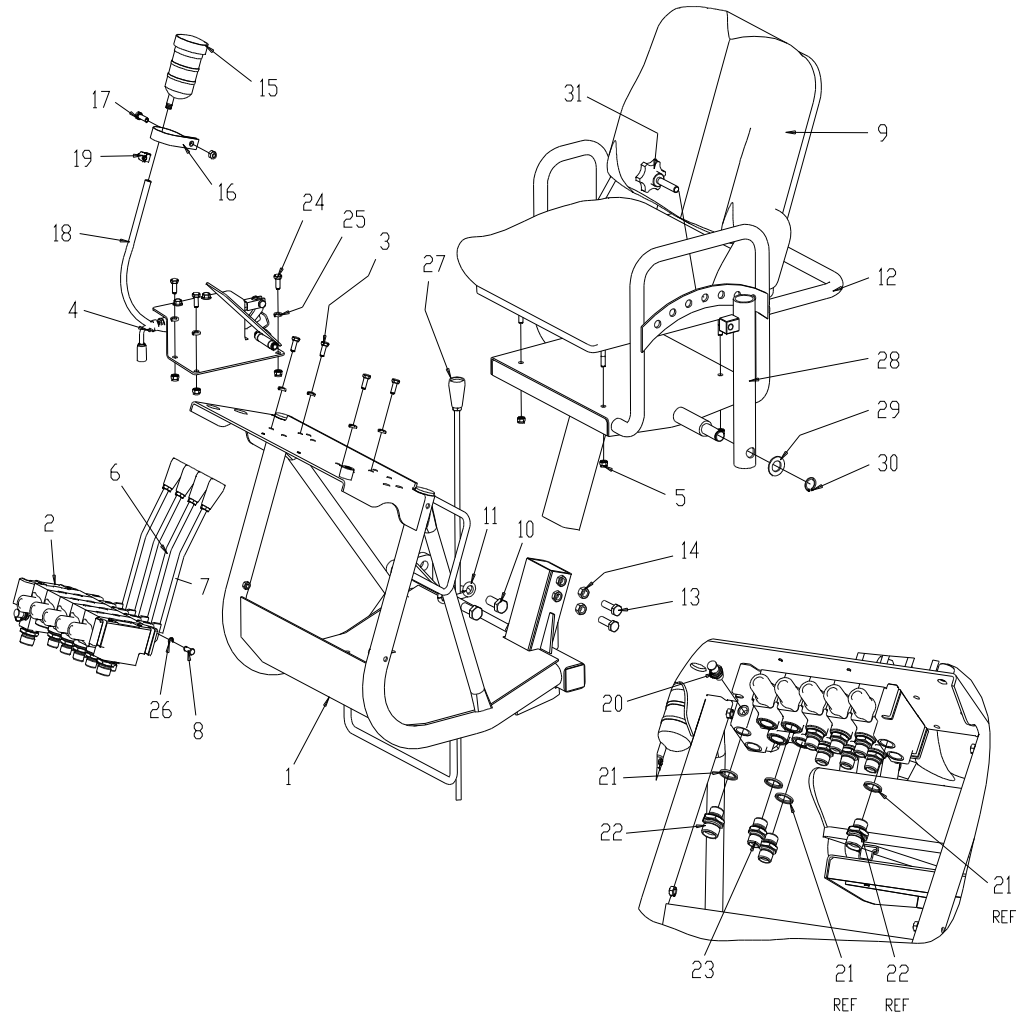
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-	A01-0538	운전석 결합체 TOP SEAT ASSY	1		10	2112137	육각 볼트 BOLT, HEX. HEAD	4	BA16×35
1	A02-4047	운전석 구조물 STRUCTURE, TOP SEAT	1		11	3612161	스프링 와셔 WASHER, SPRING	4	WS16
2	H02-0290	주 제어 밸브 VALVE, MAIN CONTROL	1	RS215	12	A02-2398	의자 브라켓 BRACKET, SEAT	1	
3	2110886	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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운전석 결합체
TOP SEAT ASS'Y

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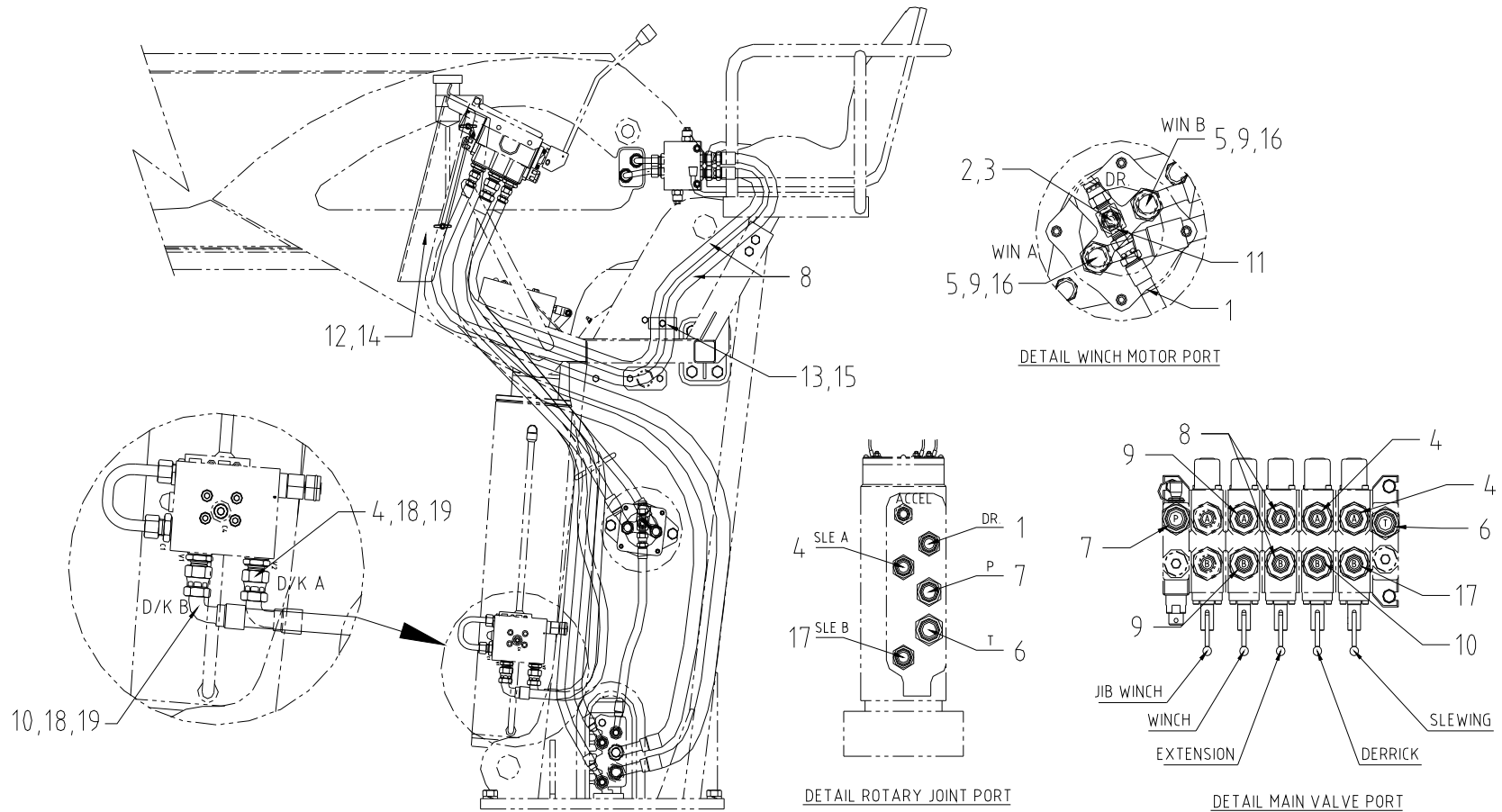
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20	998 9676	니플 MEASUREMENT NIPPLE 1/4"	1		30	4510211	멈춤 링 RING, RETAINING	1	RS20
21	6800081	와셔 GS-WASHER	10	NF1/2	31	S01-2891	손잡이 KNOB	1	M12×50
22	9270432	호스 유니언 UNION, CONICAL	2	3/4×1/2					
23	9270072	호스 유니언 UNION, CONICAL	8	1/2×1/2					
24	2110887	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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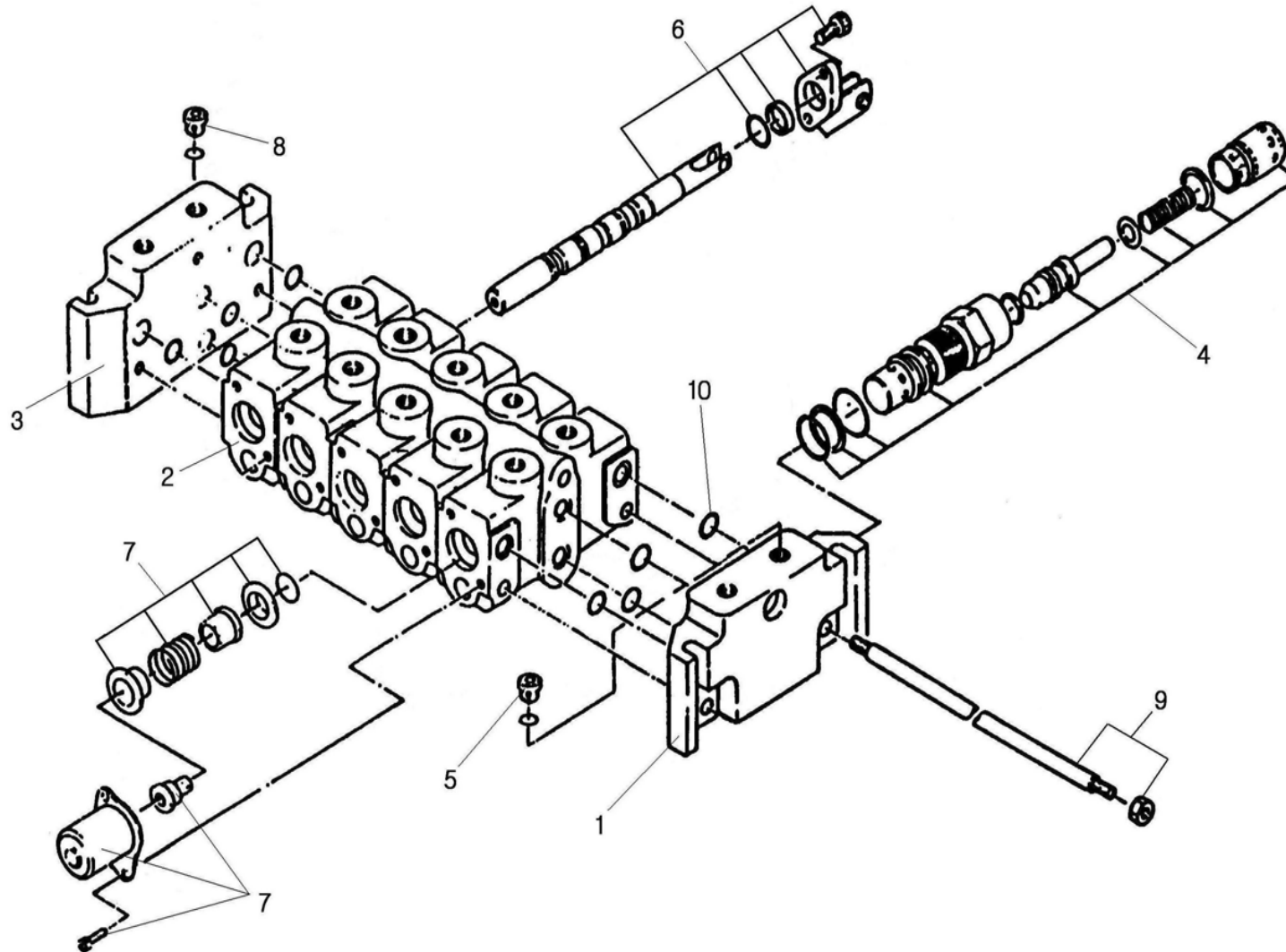
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-	A01-0794	운전석 배관도 TOP SEAT HOSES	1		11	H01-0901	호스 스위블 티 TEE, HOSE SWIVEL	1	3-PF3/8
1	7170612	고압 호스 HOSE, H.P (HECF)	1	3/8×520-PF3/8	12	M01-4521	커버 COVER	1	t1.6
2	N01-3217	롱 니플 NIPPLE, LONG	1	PF3/8(C)(O)-260	13	TS-0038	호스 클램프 CLAMP, HOSE	2	
3	6010172	오 링 O-RING	1	1B P14	14	2185966	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	4	BWF8×50
4	7172623	고압 호스 HOSE, H.P (HECF)	2	3/8×1800-PF1/2	15	2180936	플렌지 볼이 육각 볼트 BOLT, HEX. HEAD W/F	1	BWF8×35
5	6010212	오 링 O-RING	2	1B P18	16	N01-3218	롱 니플 NIPPLE, LONG	2	PF1/2(C)(O)-215
6	7178663	고압 호스 HOSE, H.P (HECF)	1	3/4×1900-PF3/4	17	7172663	고압 호스 HOSE, H.P (HECF)	1	3/8×1900-PF1/2
7	7178563	고압 호스 HOSE, H.P (HECF)	1	3/4×1650-PF3/4	18	9270072	코니칼 유니온 UNION, CONICAL	2	UC1/2×1/2
8	7118663	고압 호스 HOSE, H.P (HUCF)	2	3/8×1900-PF1/2	19	6800081	실링 와셔 WASHER, SEALING	2	NF1/2
9	7173903	고압 호스 HOSE, H.P (HECF)	2	1/2×1250-PF1/2					
10	7172643	고압 호스 HOSE, H.P (HECF)	1	3/8×1850-PF1/2					

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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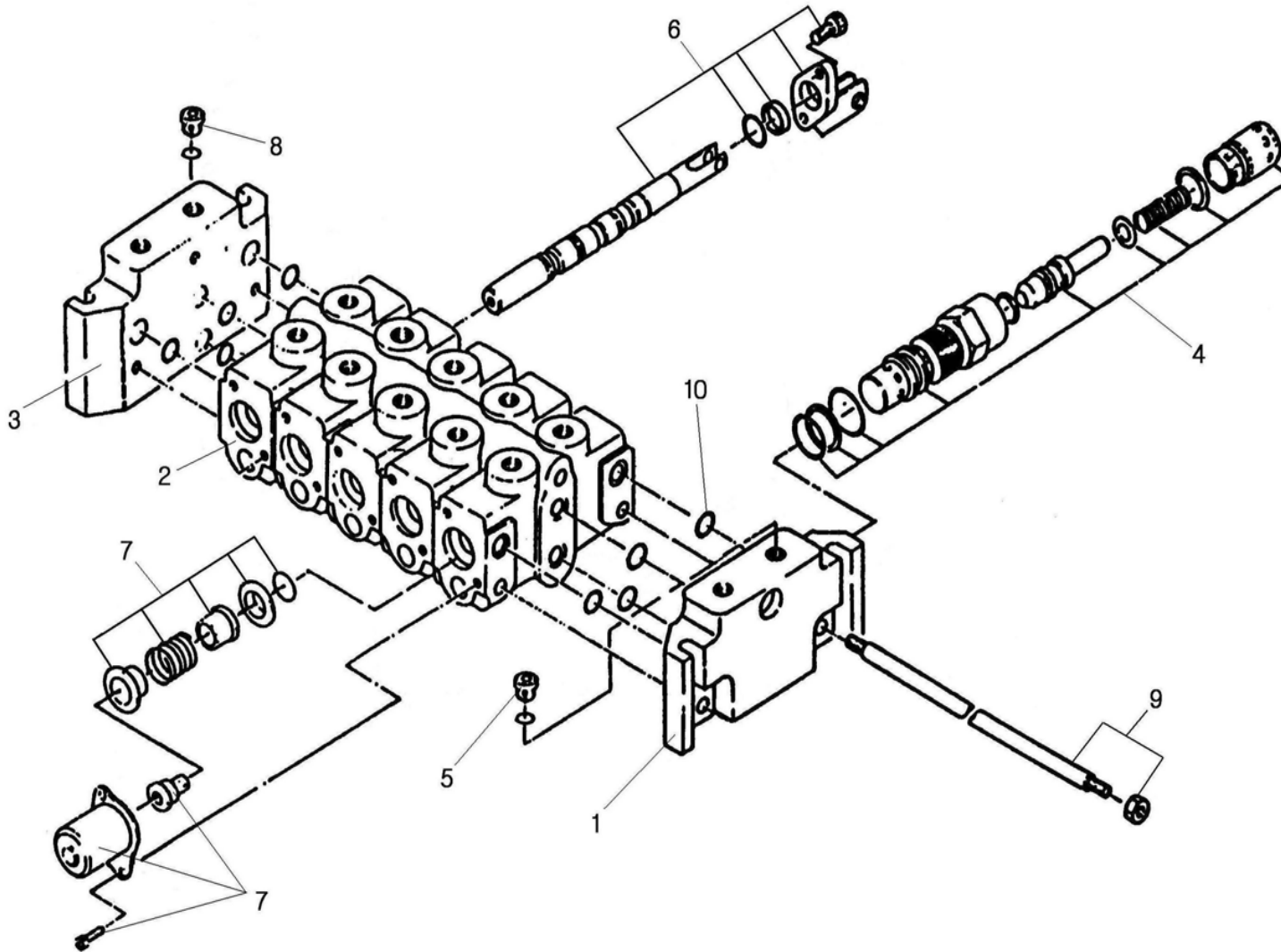
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-	H02-0290	주 제어 밸브 MAIN CONTROL VALVE			-		스페이서 SPACER	1	
1	2330-26982	PT 블록 PT BLOCK	1		-		포핏 POPPET	1	
2	2330-263162	워크 블록 WORK BLOCK	5	RS210	-	※	백업 링 RING, BACK-UP	1	
3	2330-260984	엔드 블록 END BLOCK	1		-	※	O-링 O-RING	1	12.3×2.4
4	2330-210203	메인 릴리프 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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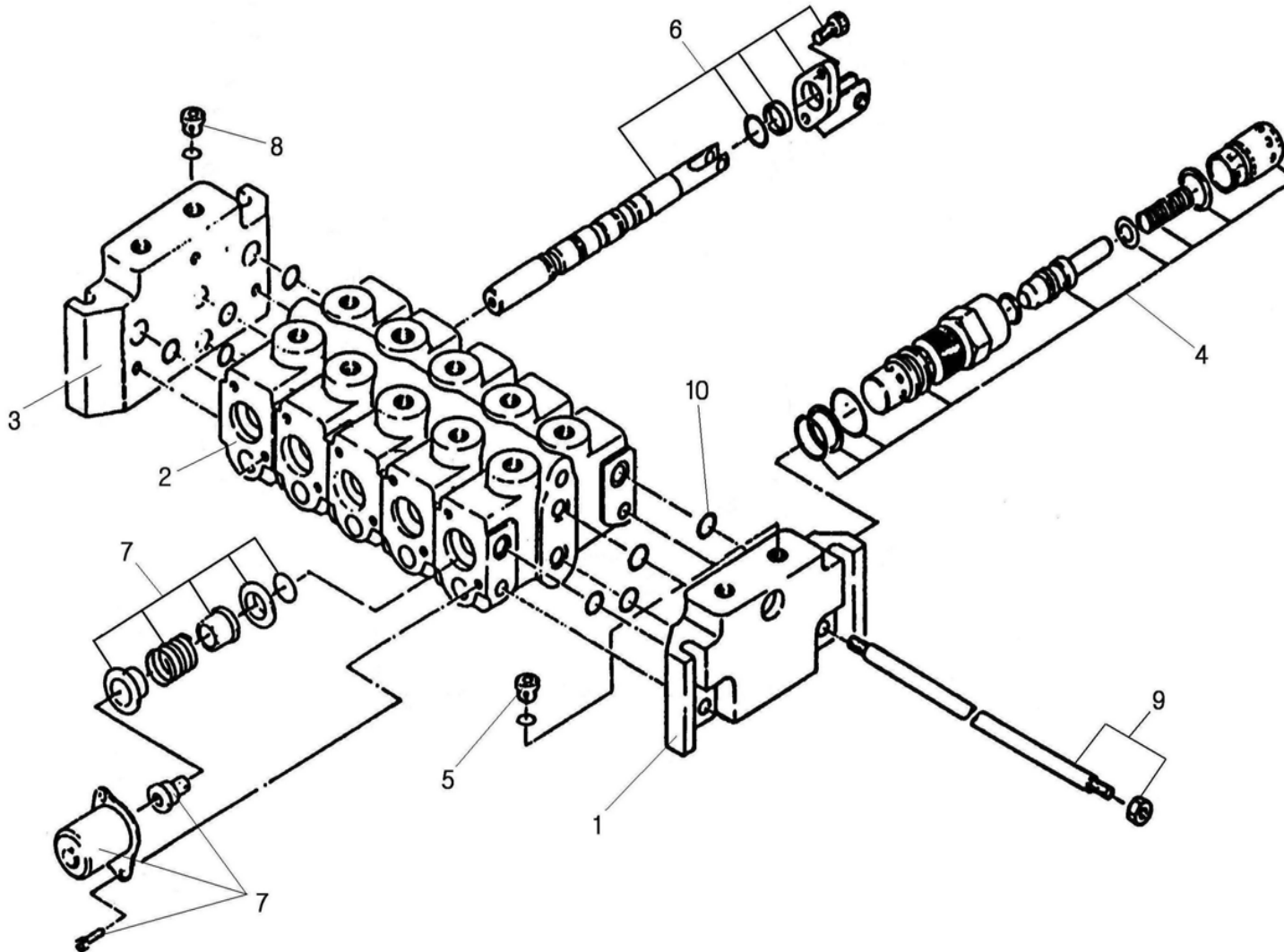
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-	★	스풀 시일 결합체 SPOOL SEAL ASS'Y	1		-		스프링 SPRING	1	
-		스크류 SCREW	2		8	2330-450073	캐리 오버 플러그 결합체 CARRY OVER PLUG ASS'Y	1	
7	2330-260944	스풀 컨트롤 결합체 SPOOL CONTROL ASS'Y	5		-		플러그 PLUG	1	
-	★	스풀 시일 SEAL, SPOOL	1		-		O-링 O-RING	1	13.1×2.62
-		와셔 WASHER	1		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	
-		스펙싱 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

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SPARE PARTS LIST



주 제어 밸브
MAIN CONTROL VALVE

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2013. 05.

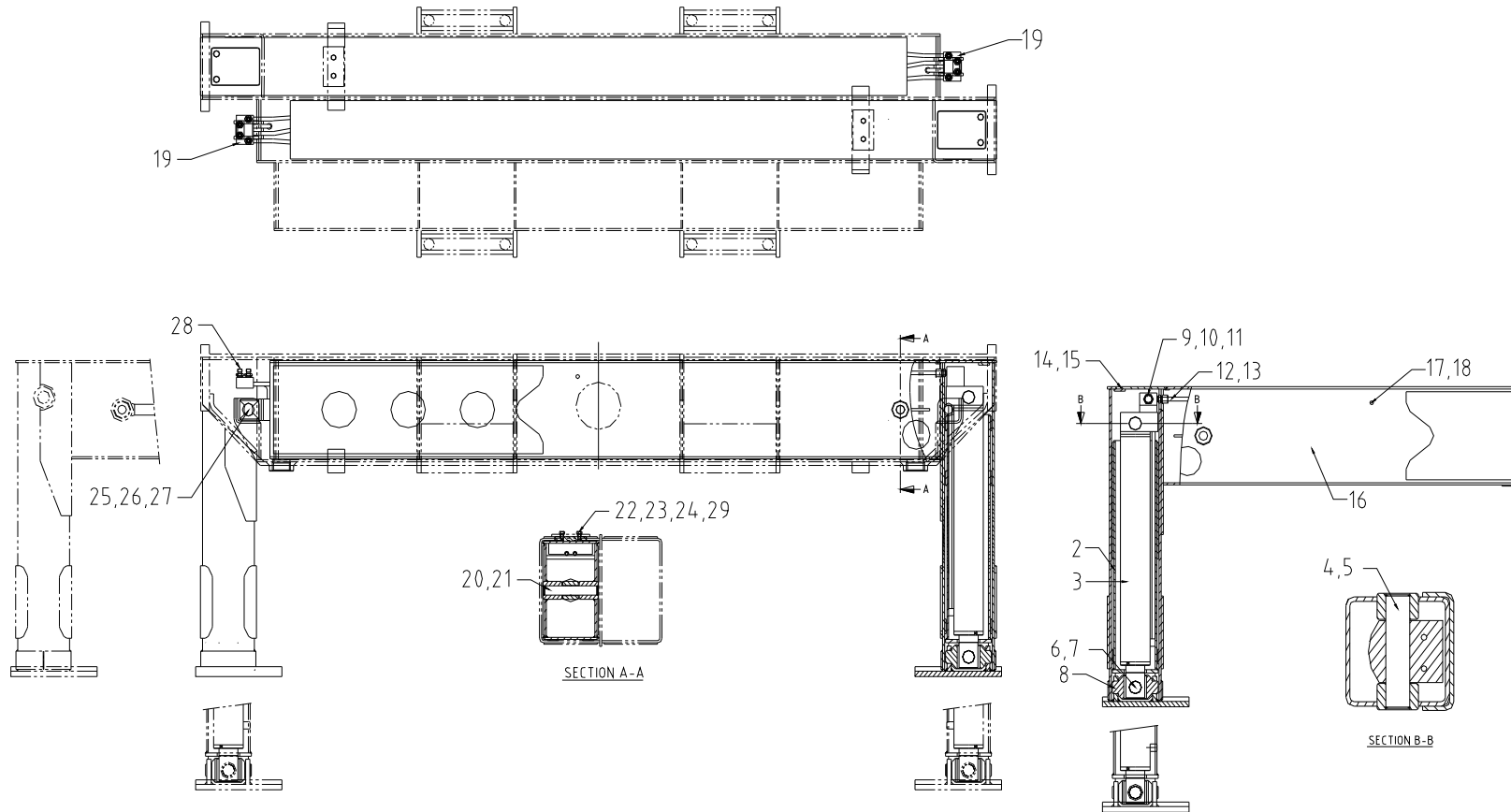
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-	2330-260588	메인 시일 키트 MAIN SEAL KIT		PART MARKED ※					
-	2330-260552	스풀 시일 키트 SPOOL SEAL KIT		PART MARKED ★					

SPARE PARTS LIST



아우트리거 결합체
OUTRIGGER ASS'Y

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SPARE PARTS LIST



아우트리거 결합체
OUTRIGGER ASS'Y

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2015. 04.

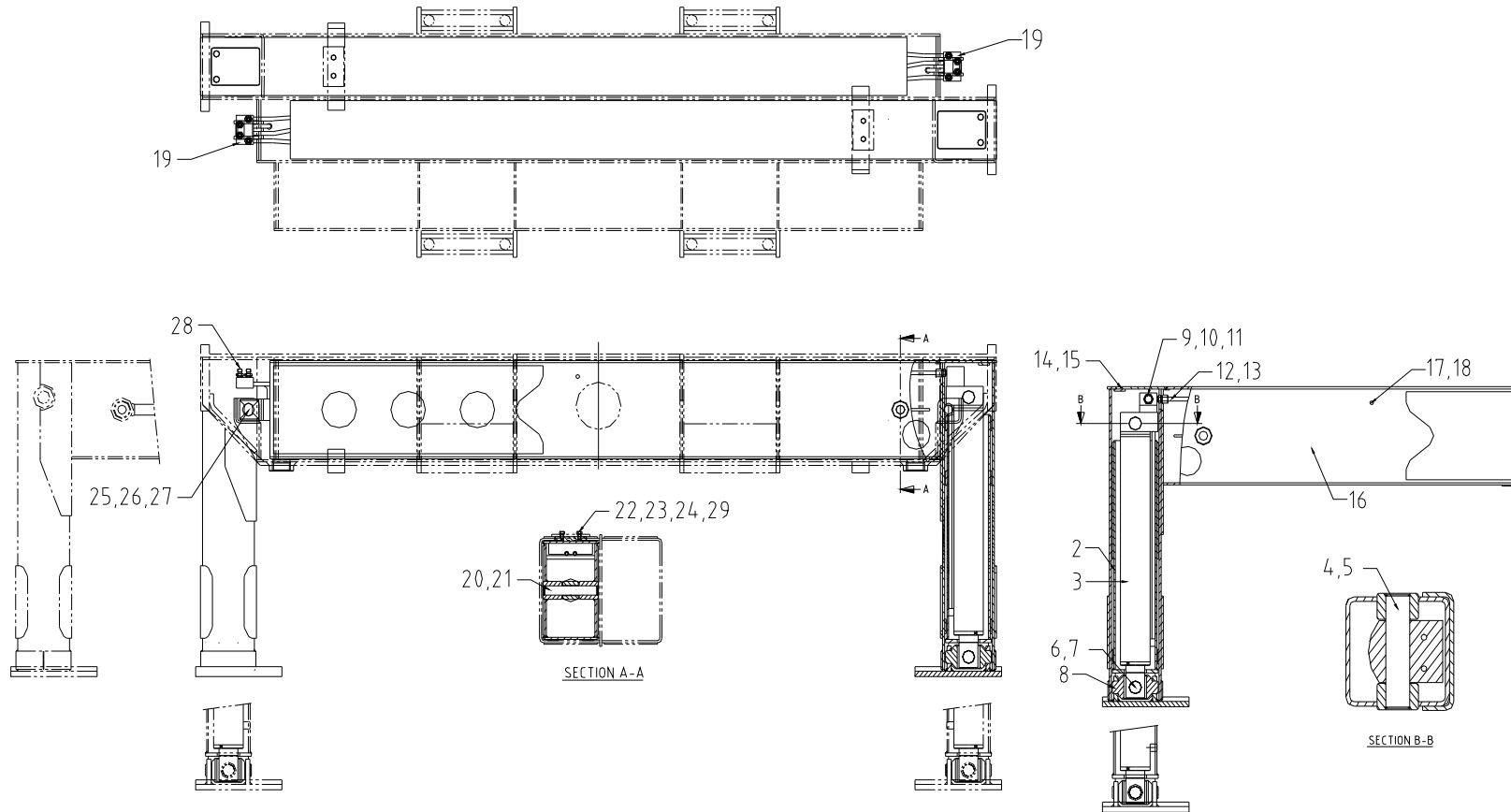
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-	OR1-3001	아우트리거 장치 OUTRIGGER SYSTEM	1	5ton 용	10	6010141	O-링 O-RING	4	1B P12
1	OR1-3003	아우트리거 빔 BEAM, OUTRIGGER	2		11	2615586	구멍 붙이 육각 볼트 BOLT, HEX. SOCKET HEAD	8	BB6×60
2	OR1-2007	내부 튜브 TUBE, INNER	2		12	9002512	파이프 니플 NIPPLE, PT PIPE	4	NTP10-PT1/4
3	H01-2061	아우트리거 실린더 OUTRIGGER CYLINDER	2		13	H01-1355	유압 파이프 PIPE, HYDRAULIC	4	Φ10×t1.5
4	S01-5478	핀 PIN	2		14	A05-0755	커버 COVER	2	
5	4525311	멈춤 링 RING, RETAINING	4	RB35	15	2241606	작은 나사 SCREW, MACHINE	4	BC6×8
6	OR-0034	축 SHAFT	4		16	7113892	고압 호스 HOSE, H.P (HUCF)	4	1/4×1220-PF1/4
7	4510311	멈춤 링 RING, RETAINING	2	RS34	17	M01-0745	핀 PIN	2	
8	OR2-1010	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



아우트리거 결합체
OUTRIGGER ASS'Y

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SPARE PARTS LIST



아우트리거 결합체
OUTRIGGER ASS'Y

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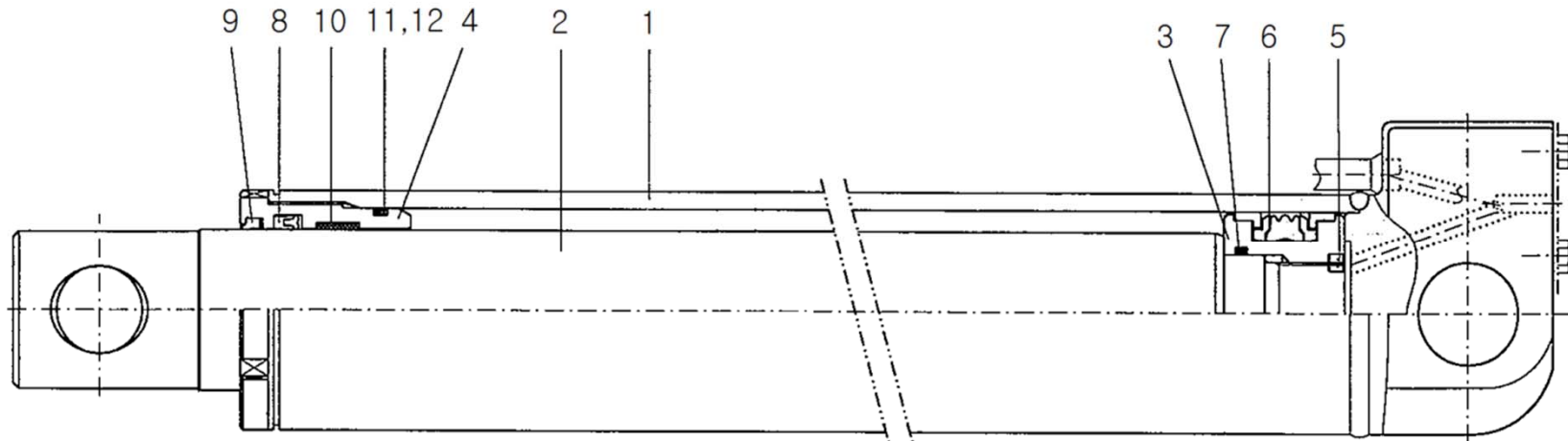
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20	N01-0932	핀 PIN	2	Φ25					
21	4525251	멈춤 링 RING, RETAINING	4	RB25					
22	OR1-0009	슬라이드 패드 PAD, SLIDE	2						
23	3612081	스프링 와셔 WASHER, SPRING	4	WS8					
24	2110866	육각 머리 볼트 BOLT, HEX. HEAD	4	BA8×16					
25	OR1-3004	축 SHAFT	2	Φ25					
26	3511241	평 와셔 WASHER, PLAIN	2	WP24					
27	1311321	분할 핀 PIN, SPLIT	2	PW Φ5.9×40					
28	9211062	호스 니플 NIPPLE, PT HOSE	8	NTC6					
29	4610702	니플 그리스 GREASE, NIPPLE	1	A-PT1/8					

SPARE PARTS LIST



아우트리거 실린더
OUTRIGGER CYLINDER

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SPARE PARTS LIST



아우트리거 실린더
OUTRIGGER CYLINDER

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2015. 04.

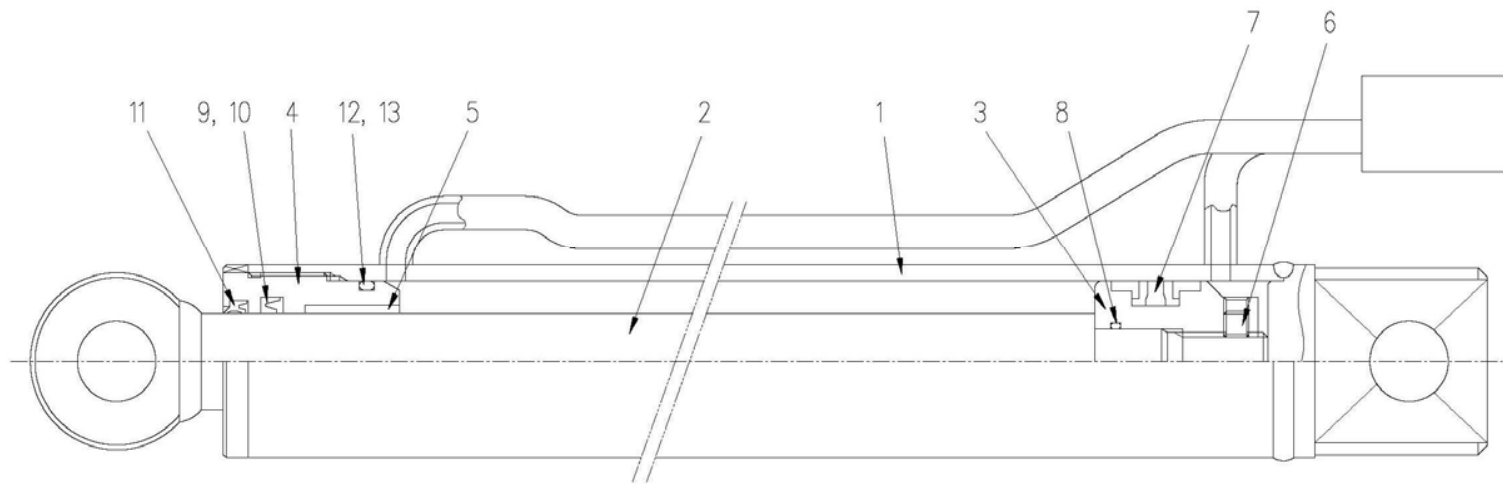
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-	H01-2061	아우트리거 실린더 OUTRIGGER CYLINDER	2	HN03FJ000-03	10	-	웨어 링 RING, WEAR	1	Φ55×Φ60×15W *
1	HN03FJ010-02	튜브 결합체 TUBE ASS'Y	1		11	-	O-링 O-RING	1	1B G65 *
2	HN03FJ020-01	로드 ROD	1		12	-	백업 링 RING, BACK-UP	1	T3 G65 *
3	HN03FJ030	피스톤 PISTON	1	M35×P1.5					
4	KL08FJ040	로드 커버 COVER, ROD	1	M74×P1.5					
5	2350456	멈춤 나사 SCREW, SET	1	M6×P1.0×8L	-	S01-2122	시일 키트 KIT, SEAL	1	PART MARKED *
6	-	피스톤 시일 PISTON SEAL	1	PCB 0A0700-NCRO *					
7	-	O-링 O-RING	1	1B G40 *					
8	-	로드 시일 ROD SEAL	1	NI-300 *					
9	-	더스트 와이퍼 WIPER, DUST	1	KDD 55 *					

SPARE PARTS LIST



사이드 쉬프트 실린더
SIDE SHIFT CYLINDER

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SPARE PARTS LIST



사이드 쉬프트 실린더
SIDE SHIFT CYLINDER

HIAB160TM-6 24 : 0
2013. 05.

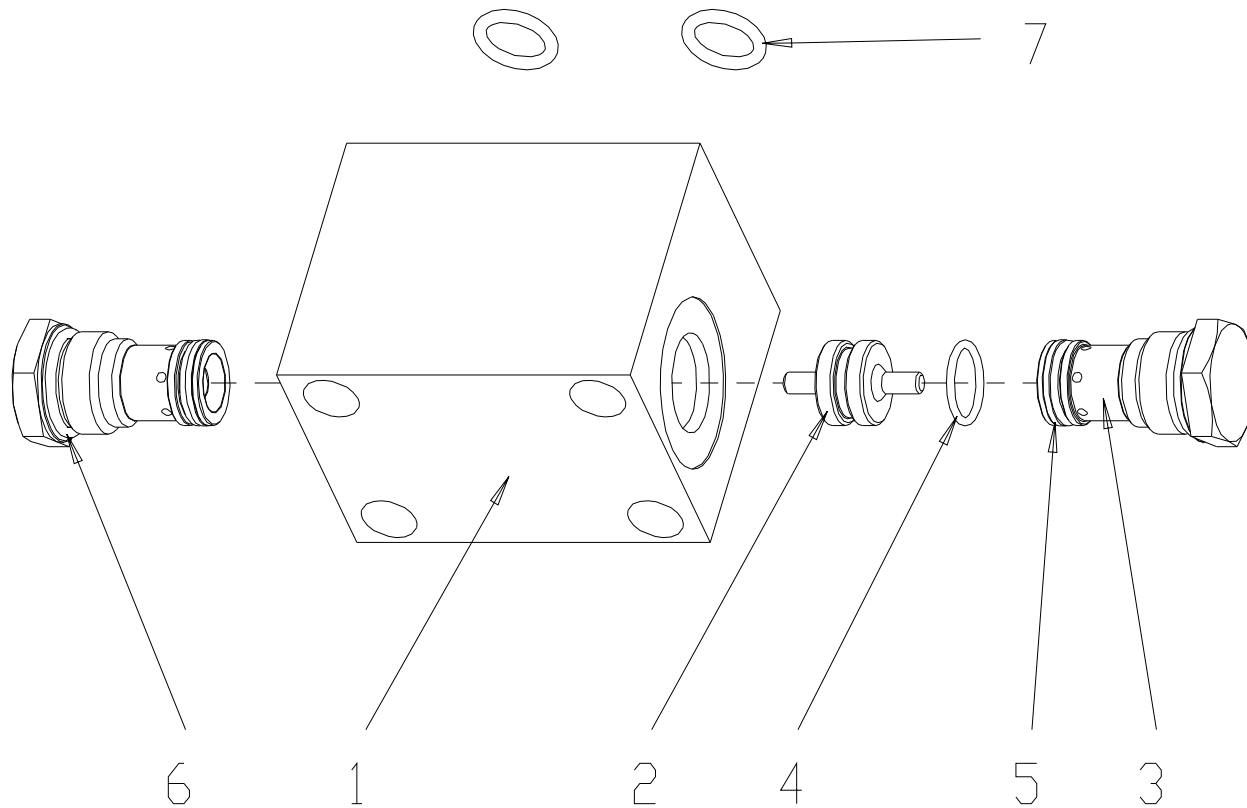
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-	H01-1431	사이드 쉬프트 실린더 SIDE SHIFT CYLINDER	2	HN21SS000-01	10	6036751	백업 링 RING, BACK-UP	1	BRT2 30
1	HN21SS010-01	튜브 결합체 TUBE ASS'Y	1		11	6115571	더스트 시일 SEAL, DUST	1	DSI 30
2	HN03SS020	로드 결합체 ROD ASS'Y	1		12	6012292	O-링 O-RING	1	1B G45
3	SS56C0030	피스톤 PISTON	1		13	6035701	백업 링 RING, BACK-UP	1	T3 G45
4	SH17FE040	로드 커버 COVER, ROD	1						
5	4320921	DU 부싱 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



파일럿 체크 밸브 (D)
PILOT CHECK VALVE (D)

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2013. 05.



SPARE PARTS LIST



파일로트 체크 밸브 (D)
PILOT CHECK VALVE (D)

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2013. 05.

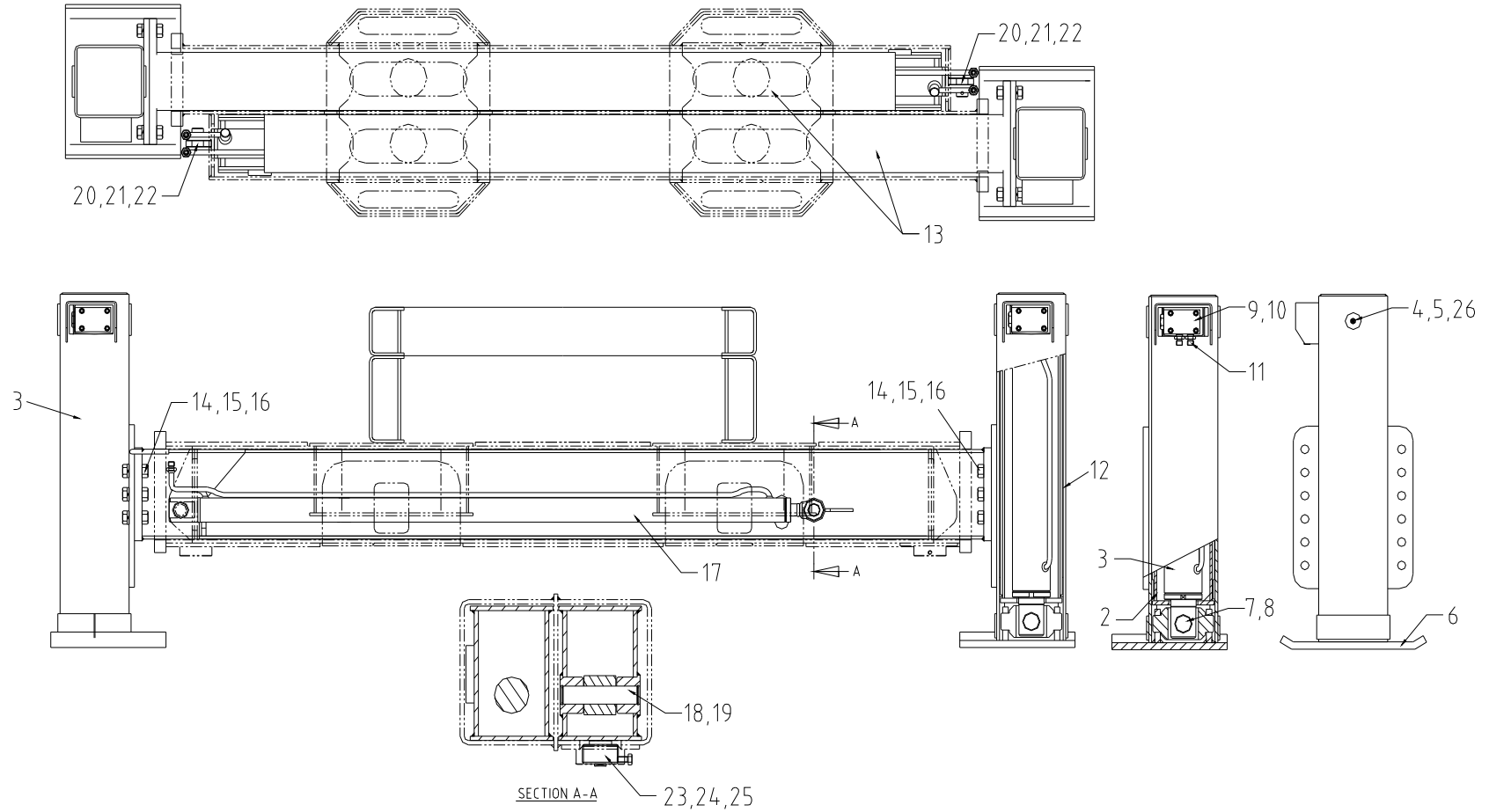
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-	H02-1058	파일로트 체크 밸브 VALVE, PILOT CHECK (D)	2						
1	D25-0005-1	블록 BODY, VALVE	1	50×55×73					
2	D25-0005-2	스풀 SPOOL	1						
3	D25-0005-3	체크 밸브 VALVE, CHECK	2						
4	D25-0005-4	오 링 O-RING	3	Φ13×t1.5					
5	D25-0005-5	백업 링 RING, BACK-UP	2	Φ13×t1.2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

SPARE PARTS LIST



후방 아웃리거 시스템 (옵션)
REAR OUTRIGGER SYSTEM (OPTION)

HIAB160TM-6 26 : 1
2015. 04.



SPARE PARTS LIST



후방 아우트리거 시스템 (옵션)
 REAR OUTRIGGER SYSTEM (OPTION)

HIAB160TM-6 26 : 1
 2015. 04.

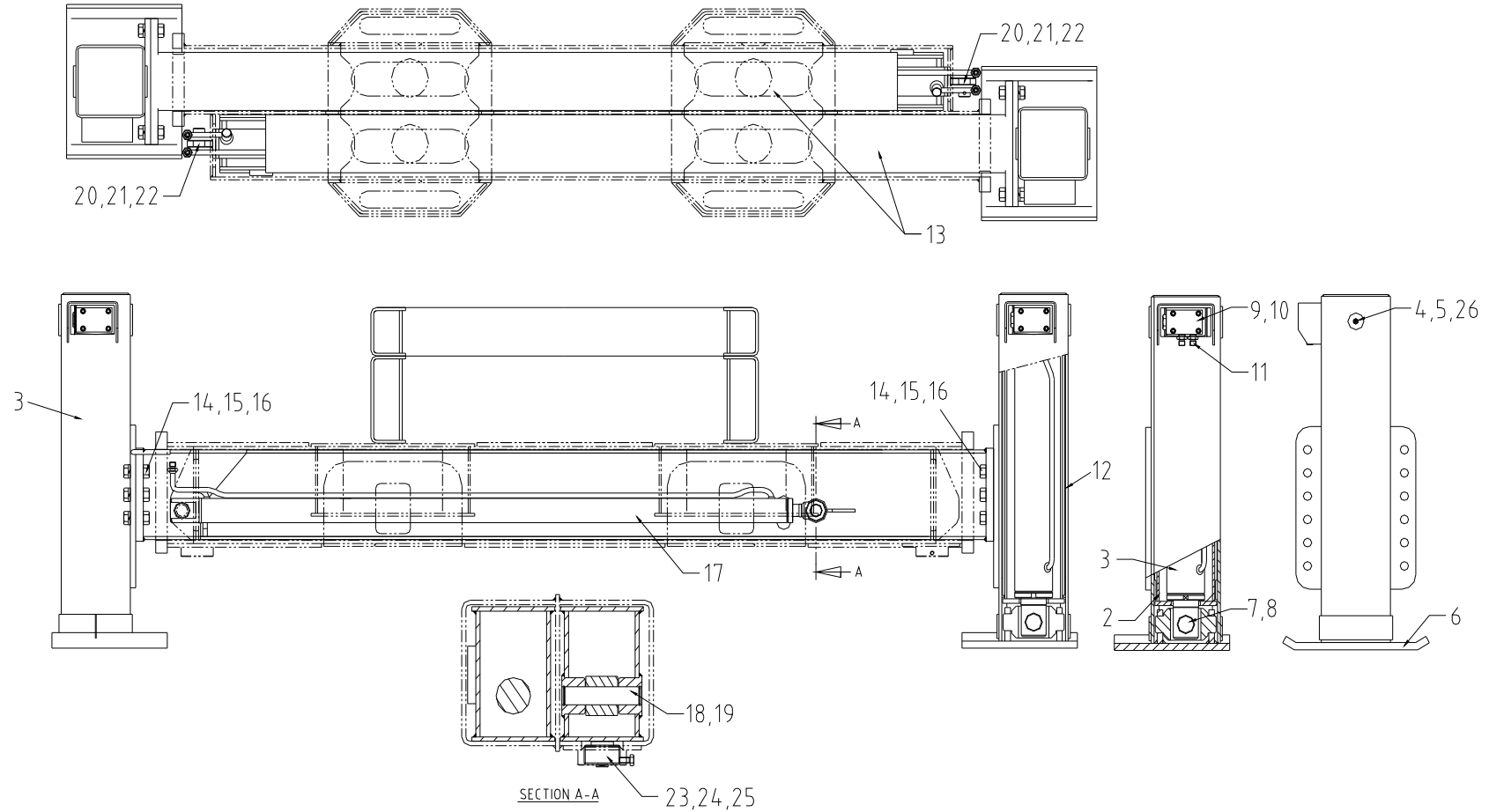
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-	A01-1149	후방 아우트리거 결합체 REAR OUTRIGGER ASS'Y	1		10	2615977	구멍 붙이 육각 볼트 BOLT, HEX. SOCKET HEAD	8	BB6×55
1	A05-2645	외부 튜브 TUBE, OUTER	1	(R.H)	11	9211062	호스 니플 NIPPLE, PT HOSE	4	NTC6
2	A05-0745	내부 튜브 TUBE, INNER	2		12	A05-2644	외부 튜브 TUBE, OUTER	1	(L,H)
3	H01-2062	후방 아우트리거 실린더 결합체 REAR OUTRIGGER CYL'D ASS'Y	2		13	A05-2646	빔 결합체 BEAM ASS'Y	2	
4	S01-5478	축 SHAFT	2	Φ35×150	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	H01-2064	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	H02-1058	파일럿 체크 밸브 VALVE, PILOT CHECK (D)	2		19	4525251	멈춤 링 RING, RETAINING	4	RB25

SPARE PARTS LIST



후방 아웃리거 시스템 (옵션)
REAR OUTRIGGER SYSTEM (OPTION)

HIAB160TM-6 26 : 1
2015. 04.



SPARE PARTS LIST



후방 아우트리거 시스템 (옵션)
 REAR OUTRIGGER SYSTEM (OPTION)

HIAB160TM-6 26 : 1
 2015. 04.

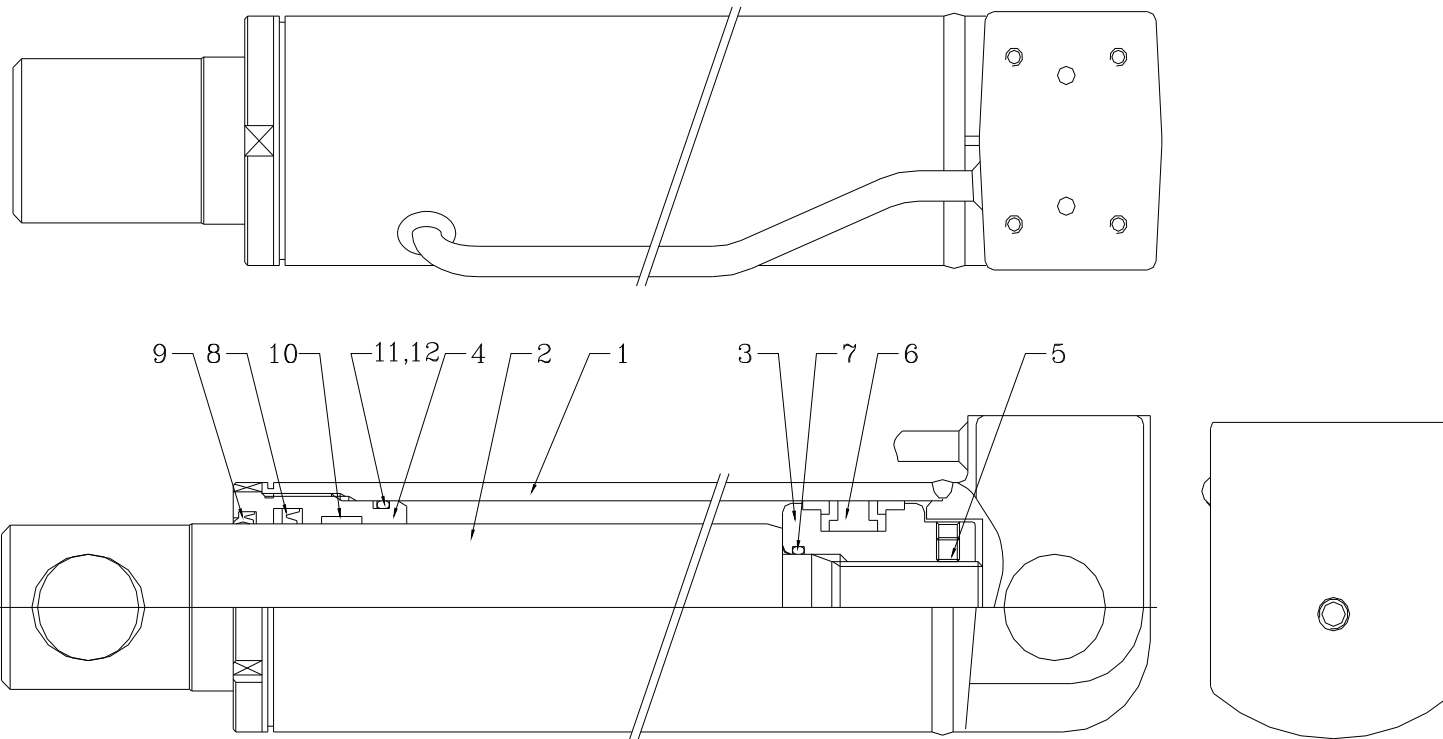
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20	S01-0875	축 SHAFT	2	Φ25					
21	3511241	평 와셔 WASHER, PLAIN	2	WP24					
22	1311321	분할 핀 PIN, SPLIT	2	PW5.9×40					
23	OR-0062	조절 볼트 BOLT, ADJUST	2	M52×45L					
24	OR-0063	조절 패드 PAD, ADJUST	2	Φ48×22					
25	2110906	육각머리 볼트 BOLT, HEX. HEAD	2	BA8×25					
26	4610702	니플 그리스 GREASE, NIPPLE	2	A-PT1/8					

SPARE PARTS LIST



후방 아웃리거 실린더 (옵션)
REAR OUTRIGGER CYLINDER (OPTION)

HIAB160TM-6 27 : 0
2013. 05.



SPARE PARTS LIST



후방 아우트리거 실린더 (옵션)
 REAR OUTRIGGER CYLINDER (OPTION)

HIAB160TM-6 27:0
 2013. 05.

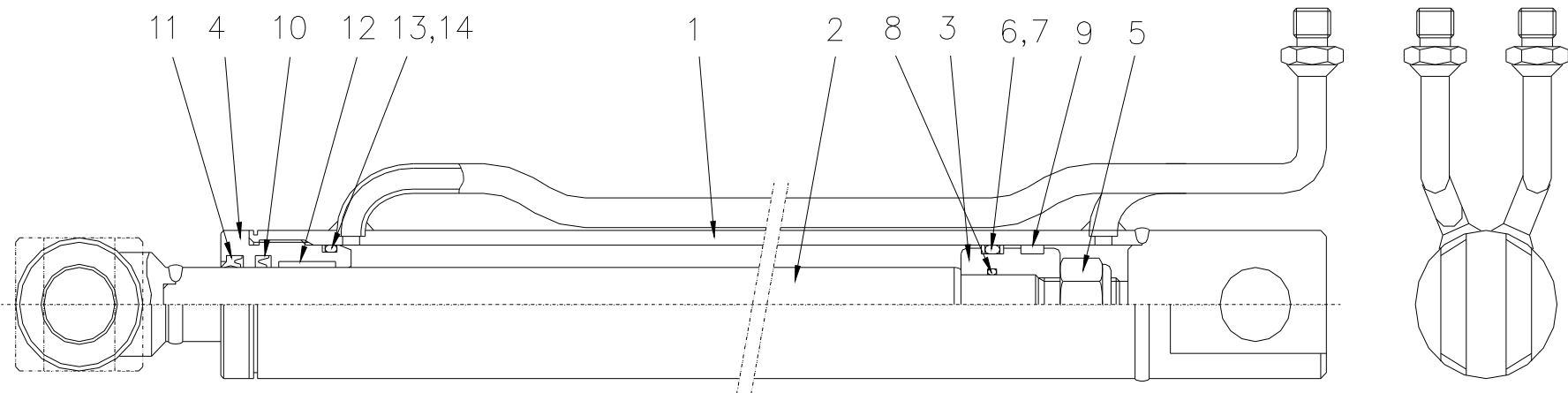
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-	H01-2062	후방 아우트리거 실린더 REAR OUTRIGGER CYLINDER	2		10	S01-0872	웨어 링 RING, WEAR	1	Φ55×Φ60×15
1	HN03RJ010-01	튜브 결합체 TUBE ASS'Y	1		11	6012332	O-링 O-RING	1	1B G65
2	HN03RJ020-01	로드 ROD	1		12	6035741	백업 링 RING, BACK-UP	1	T3 G65
3	KL08FJ030	피스톤 PISTON	1	M35×P1.5					
4	KL08FJ040	로드 커버 COVER, ROD	1	M74×P1.5					
5	2350496	멈춤 나사 SCREW, SET	1	BV6×16	-	S01-2122	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	NI-300					
9	6115651	더스트 시일 SEAL, DUST	1	KDD 55					

SPARE PARTS LIST



후방 사이드 쉬프트 실린더 (옵션)
REAR SIDE SHIFT CYLINDER (OPTION)

HIAB160TM-6 28:0
2013. 05.



SPARE PARTS LIST



후방 사이드 쉬프트 실린더 (옵션)
REAR SIDE SHIFT CYLINDER (OPTION)

HIAB160TM-6 28:0
2013. 05.

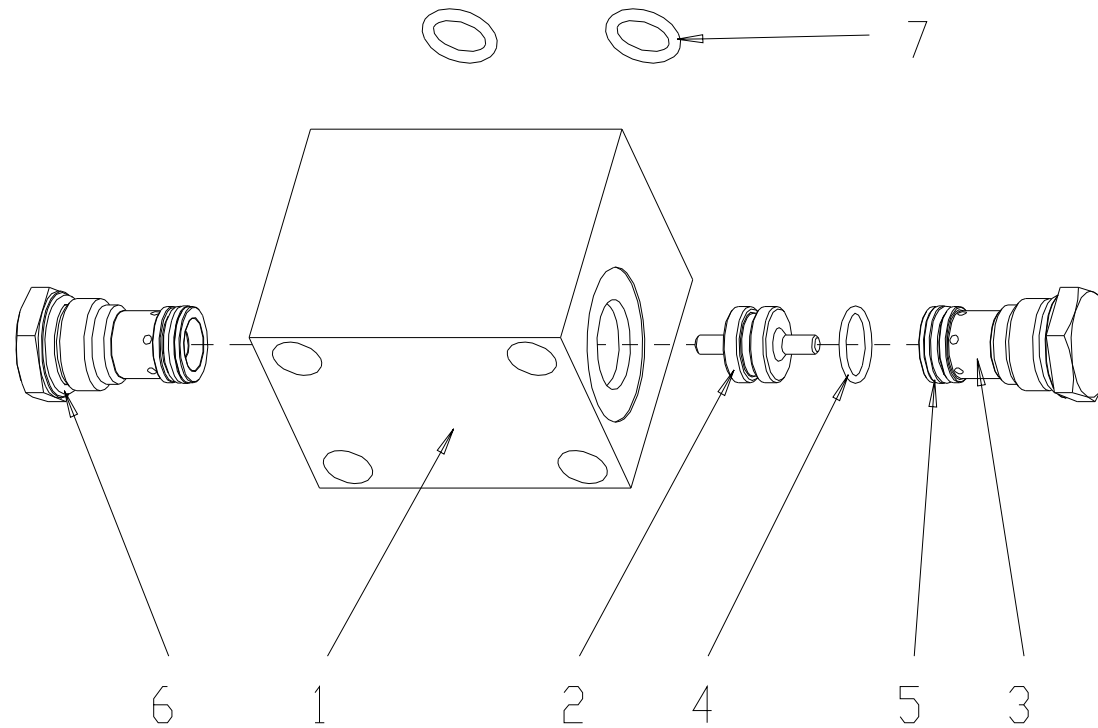
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-	H01-2064	후방 사이드 쉬프트 실린더 REAR SIDE SHIFT CYLINDER	2	HN03RS000-02	10		로드 시일 ROD SEAL	1	NI-300
1	HN03RS010	튜브 결합체 TUBE ASS'Y	1		11	6115551	더스트 시일 SEAL, DUST	1	KDD 25
2	HN03RS020-01	로드 결합체 ROD ASS'Y	1		12	S01-0910	웨어 링 RING, WEAR	1	Φ25×Φ29×20W
3	KL08LS030	피스톤 PISTON	1		13	6010402	O-링 O-RING	1	1B G35
4	SS35AE040-01	로드 커버 COVER, ROD	1		14	6035681	백업 링 RING, BACK UP	1	T3 G35
5	-	라일론 너트 NUT, NYLON	1	M18×P2.5					
6	6010392	O-링 O - RING	1	1B P34					
7	6032361	백업 링 RING, BACK UP	2	T2 P34	-	S01-2124	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 (옵션)
PILOT CHECK VALVE (D) (OPTION)

HIAB160TM-6 29 : 1
2015. 04.



SPARE PARTS LIST



파일럿 체크 밸브 (옵션)
PILOT CHECK VALVE (D) (OPTION)

HIAB160TM-6 29:1
2015. 04.

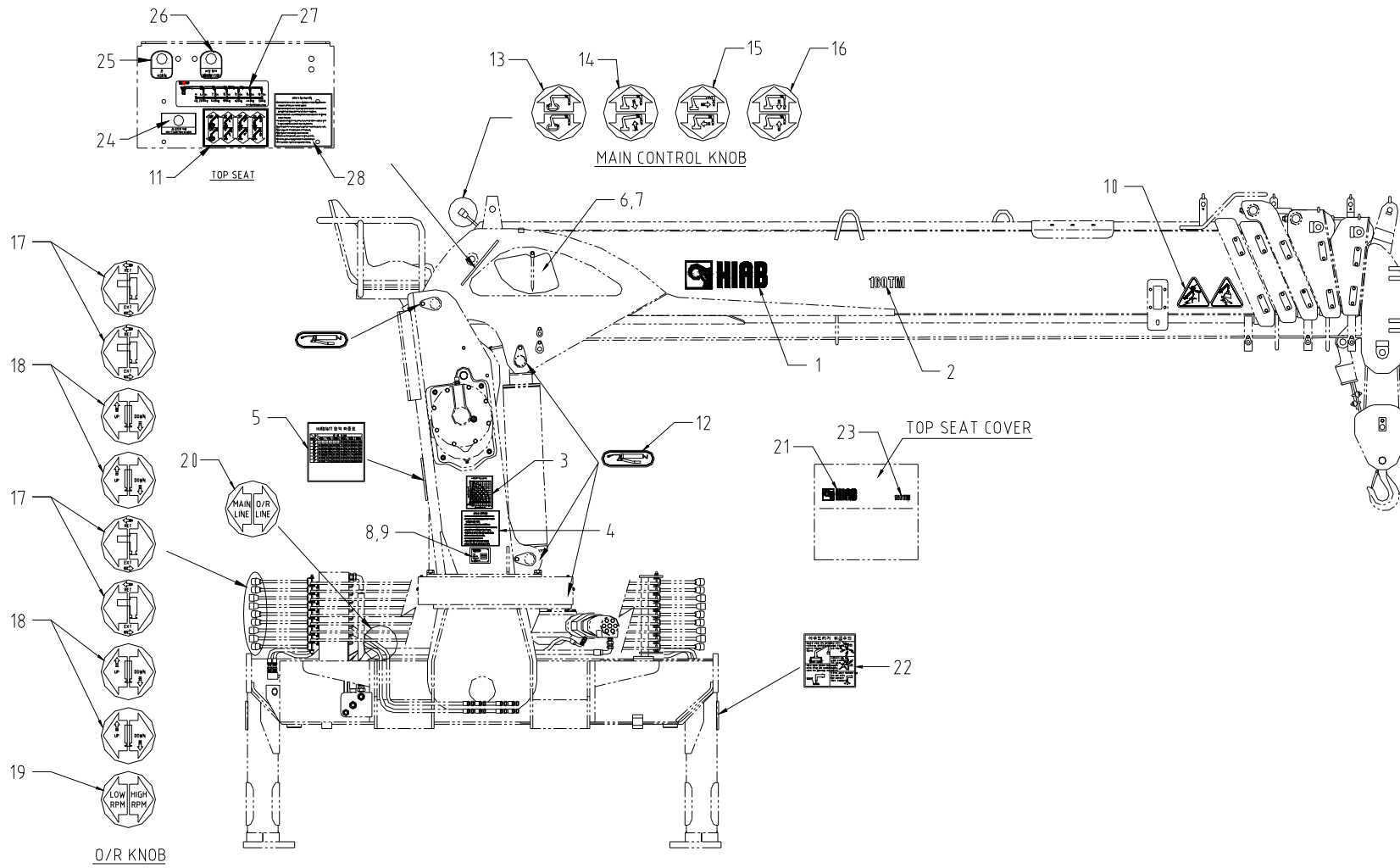
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-	H02-1058	파일럿 체크 밸브 VALVE, PILOT CHECK (D)	2						
1	D25-0005-1	블록 BODY, VALVE	1	50×55×73					
2	D25-0005-2	스풀 SPOOL	1						
3	D25-0005-3	체크 밸브 VALVE, CHECK	2						
4	D25-0005-4	오 링 O-RING	3	Φ13×t1.5					
5	D25-0005-5	백업 링 RING, BACK-UP	2	Φ13×t1.2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

SPARE PARTS LIST



스티커 배열
STICKER ARRANGEMENT

HIAB160TM-6 30 : 0
2013. 05.



SPARE PARTS LIST



스티커 배열
STICKER ARRANGEMENT

HIAB160TM-6 30:0
2013. 05.

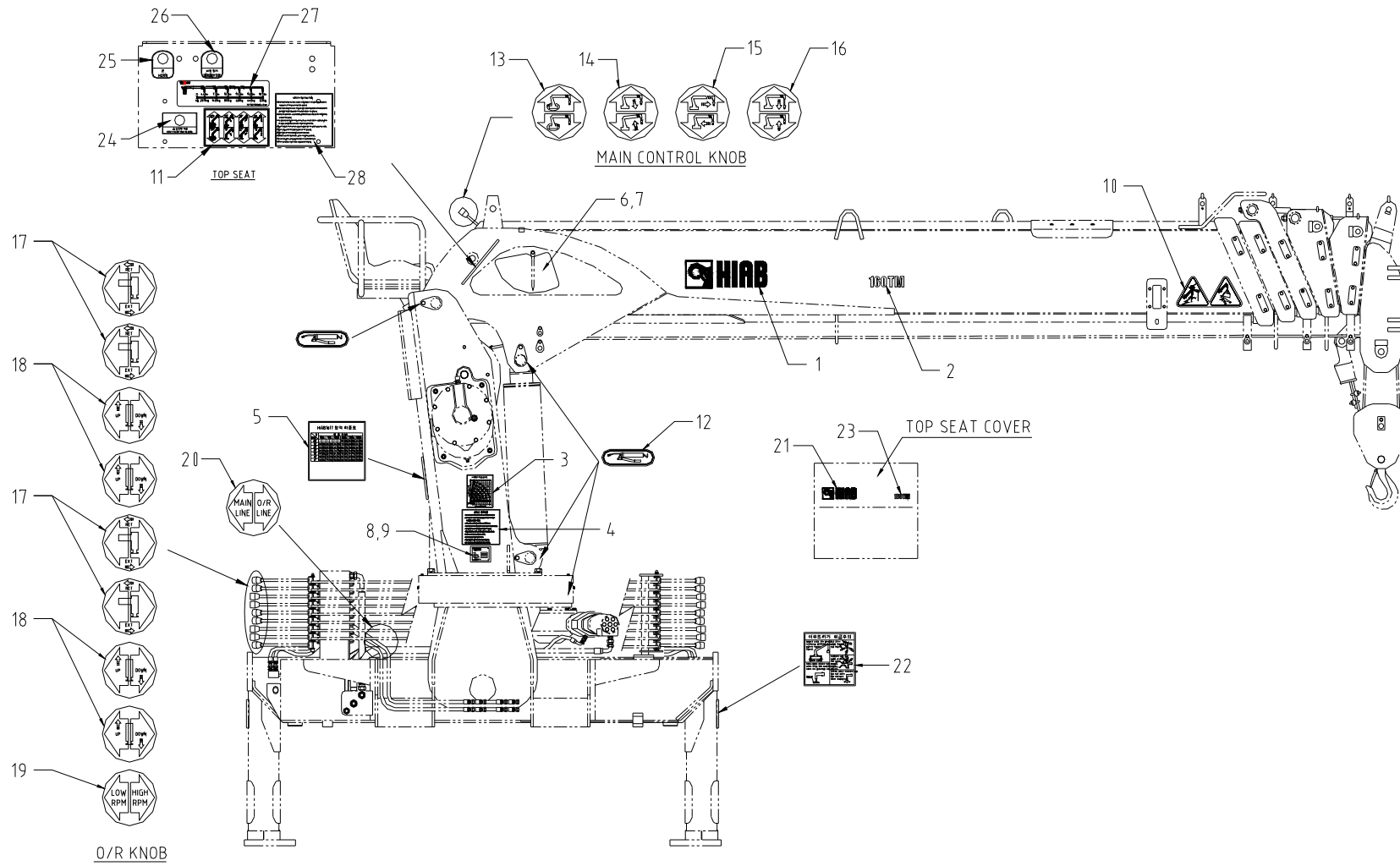
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-	A01-0516	스티커 배열 ARRANGENT, STICKER	1		10	P01-0124	위험 플레이트 PLATE, WARNING	1	
1	387 0370	로고 라벨 LABEL, LOGO (HIAB)	2		11	P01-0115	컨트롤 플레이트 PLATE, CONTROL	1	
2	161 8334	모델 네임 라벨 LABEL, MODEL NAME	2		12	P01-0159	그리스 스티커 STICKER, GREASE	7	
3	P01-0416	작업 반경도 WORKING RADIUS	1		13	P01-0258	선회 스티커 STICKER, SLEWING	1	
4	P01-0146	주의사항 라벨 LABEL, WARNING	1		14	P01-0259	기복 스티커 STICKER, DERRICK	1	
5	P01-0417	적재 능력 LOAD CHART	1		15	P01-0260	신축 스티커 STICKER, EXTENSION	1	
6	P01-0418	붐 각도 플레이트(오른쪽) PLATE, BOOM ANGLE(RIGHT)	1		16	P01-0261	윈치 스티커 STICKER, WINCH	1	
7	P01-0419	붐 각도 플레이트(왼쪽) PLATE, BOOM ANGLE(LEFT)	1		17	P01-0264	사이드 쉬프트 스티커 STICKET, SIDE SHIFT	8	
8	SK-5007	명칭 플레이트 PLATE, NAME	1		18	P01-0265	아우트리거 스티커 STICKER, JACK	8	
9	S01-0182	블라인드 리벳 RIVET, BLIND	1		19	P01-0267	RPM 스티커 STICKET, RPM	2	

SPARE PARTS LIST



스티커 배열 STICKER ARRANGEMENT

HIAB160TM-6 30:0
2013. 05.



SPARE PARTS LIST



스티커 배열
STICKER ARRANGEMENT

HIAB160TM-6 30 : 0
2013. 05.

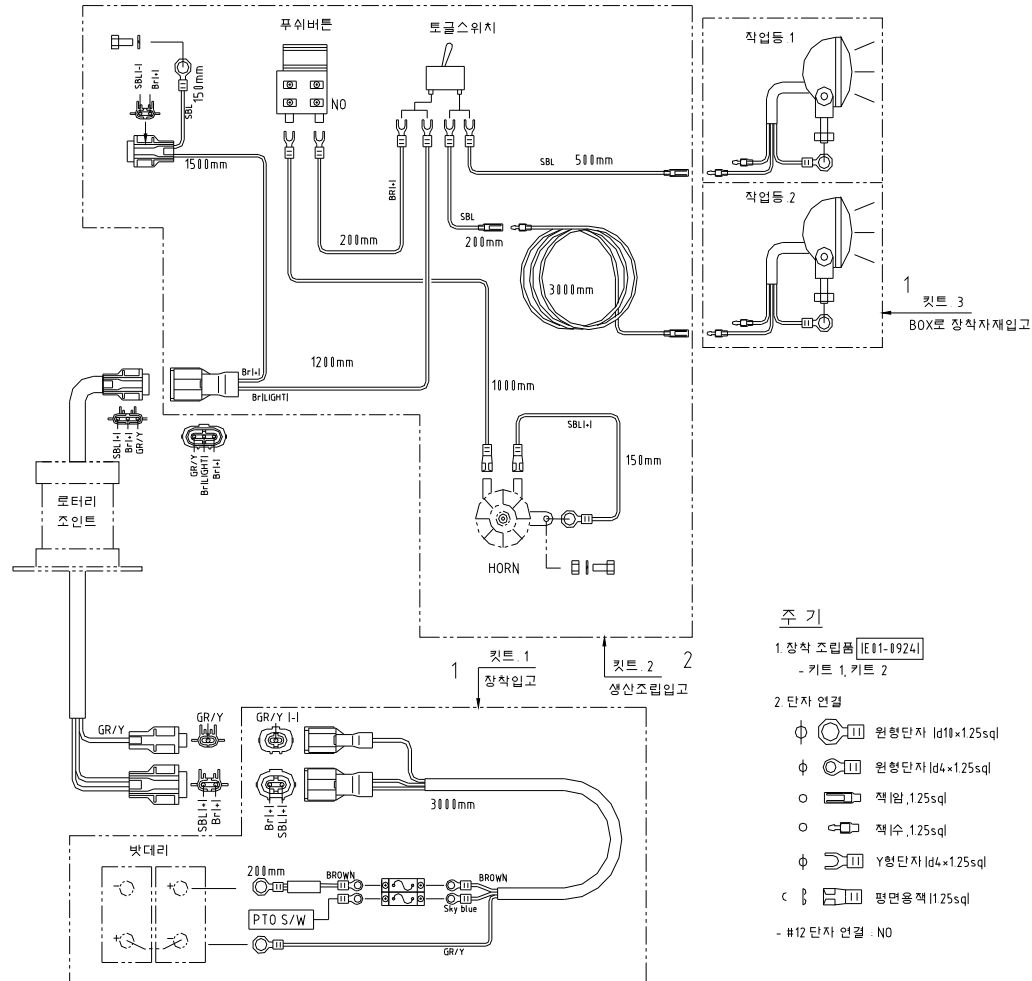
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20	P01-0266	라인 컨트롤 스티커 STICKER, LINE CONTROL	2						
21	112768401	로고 라벨 LABEL, LOGO	1						
22	P01-0357	아우트리거 위험 스티커 STICKER, O/R WARNING	2						
23	161 8831	모델 네임 라벨 LABEL, MODEL NAME	1						
24	P01-2044	안전모 스티커 STICKER, SAFETY HELMET	1						
25	P01-2132	경적 스티커 STICKER, HORN	1						
26	P01-2133	비상정지 스티커 STICKER, EMERGENCY STOP	1						
27	P01-2509	하중능력 스티커 STICKER, CAPACITY	1						
28	P01-2130	위험 라벨 LABEL, WARNING	1						

SPARE PARTS LIST



전기 배선도 ELECTRIC WIRING DIAGRAM

HIAB160TM-6 31-1 : 1
2015. 04.



SPARE PARTS LIST



전기 배선도
ELECTRIC WIRING DIAGRAM

HIAB160TM-6 31-1 : 1
2015. 04.

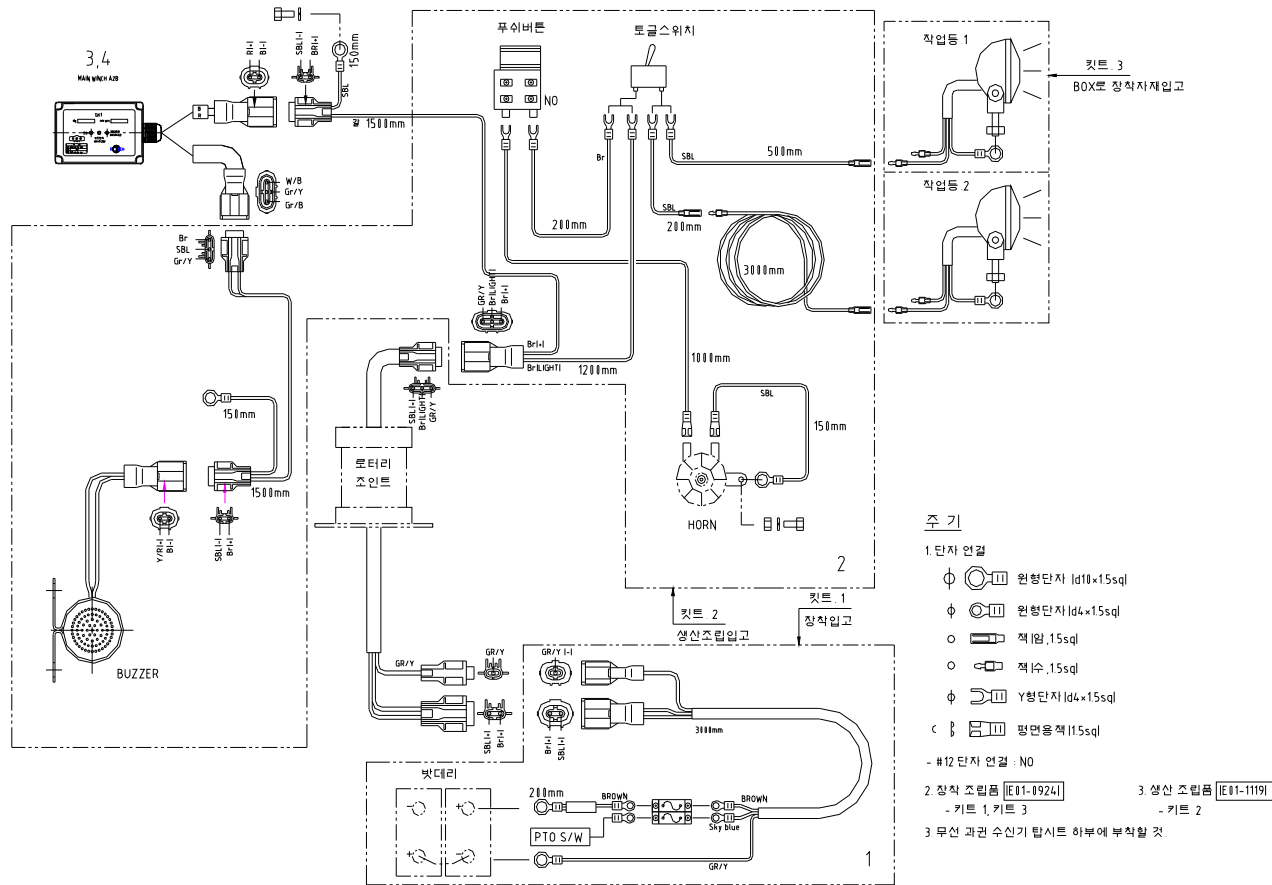
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-	E00-0116	전기배선도 ELECTRIC WIRING DIAGRAM	1						
1	E01-0924	전기 와이어 결함체 ELEC. WIRE ASS'Y	1	MOUNTING PART					
2	E01-1181	전기 결함체 ELEC. ASS'Y	1	PRODUCTION PART					

SPARE PARTS LIST



전기 배선도 - 무선과권 ELECTRIC WIRING DIAGRAM - TRANSMITTER

HIAB160TM-6 31-2 : 1
2015. 04.



SPARE PARTS LIST



전기 배선도 - 무선과권
ELECTRIC WIRING DIAGRAM - TRANSMITTER

HIAB160TM-6 31-2 : 1
2015. 04.

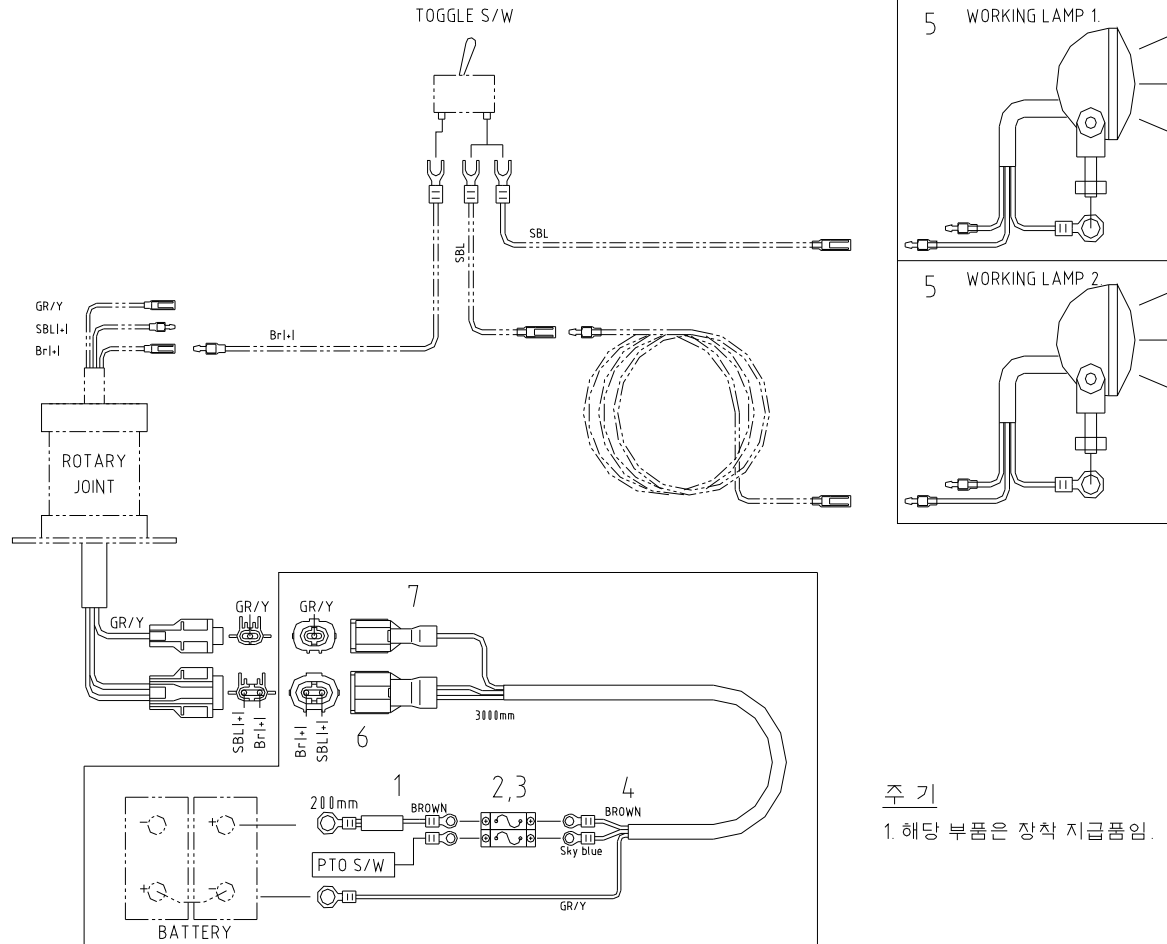
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-	E00-0120	전기배선도 ELECTRIC WIRING DIAGRAM	1	무선과권 TRANSMITTER					
1	E01-0924	전기 결합체 ELEC. ASS'Y	1	MOUNTING PART					
2	E01-1119	전기 결합체 ELEC. ASS'Y		PRODUCTION PART					
3	E01-1502	리시버 RECEIVER							
4	E01-1025	전송기 TRANSMITTER							

SPARE PARTS LIST



전기 와이어 결합체 ELECTRIC WIRE ASS'Y

HIAB160TM-6 32 : 1
2015. 04.



주 기
1. 해당 부품은 장착 지급품임.

SPARE PARTS LIST



전기 와이어 결합체
ELECTRIC WIRE ASS'Y

HIAB160TM-6 32 : 1
2015. 04.

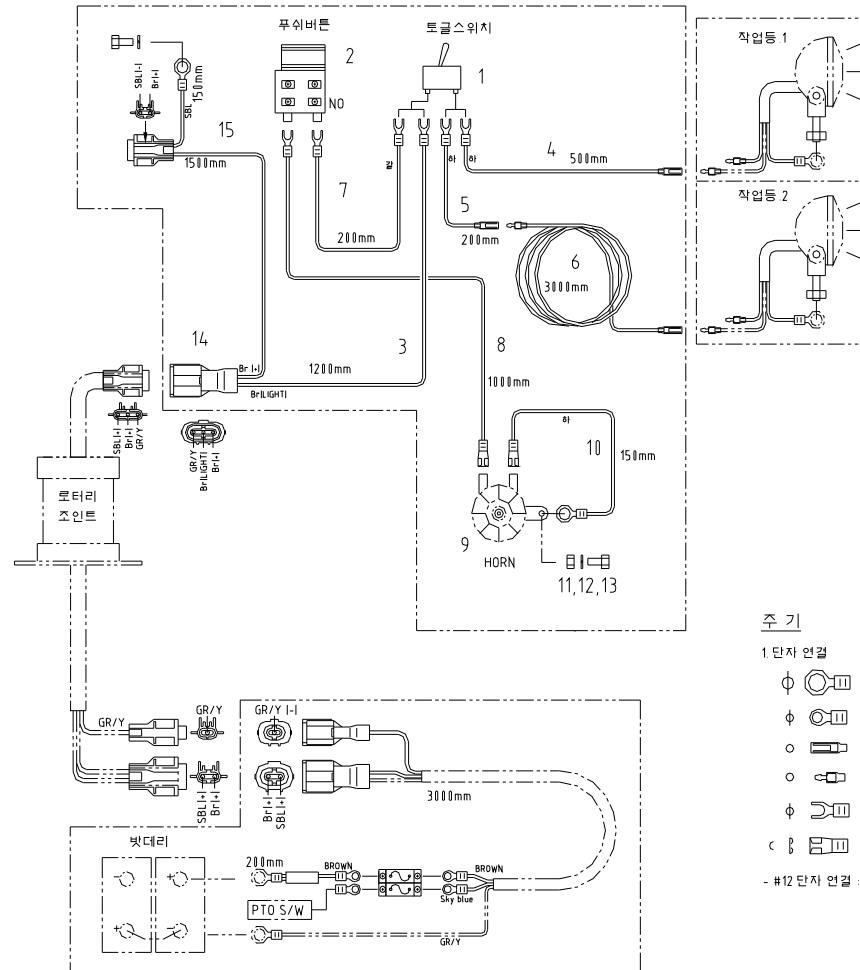
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-	E01-0924	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	MOUNTING PART					
1	E01-0909	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ					
2	E01-0908	휴즈 홀더 HOLDER, FUSE	1	D6, 2P					
3	E01-0010	휴즈 FUSE	2	D6, 15A					
4	E01-0910	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ					
5	E01-0048	작업 램프 LAMP, WORKING	2	DC24					
6	S01-5661	2P MALE 결합체 2P MALE ASS'Y	1						
7	S01-5659	1P MALE 결합체 1P MALE ASS'Y	1						

SPARE PARTS LIST



전기 결합체 ELECTRIC ASS'Y

HIAB160TM-6 33-1 : 1
2015. 04.



주 기

1 단자 연결

- ⊕ ○ □ 원형단자 |d10×1.25sq|
 - ⊕ ○ □ 원형단자 |d4×1.25sq|
 - □ 직 |수 .125sq|
 - □ 직 |수 .125sq|
 - ⊕ □ Y형단자 |d4×1.25sq|
 - ⊕ □ 평면용접 |1.25sq|
- #12 단자 연결 : NO

SPARE PARTS LIST



전기 결합체
ELECTRIC ASS'Y

HIAB160TM-6 33-1 : 1
2015. 04.

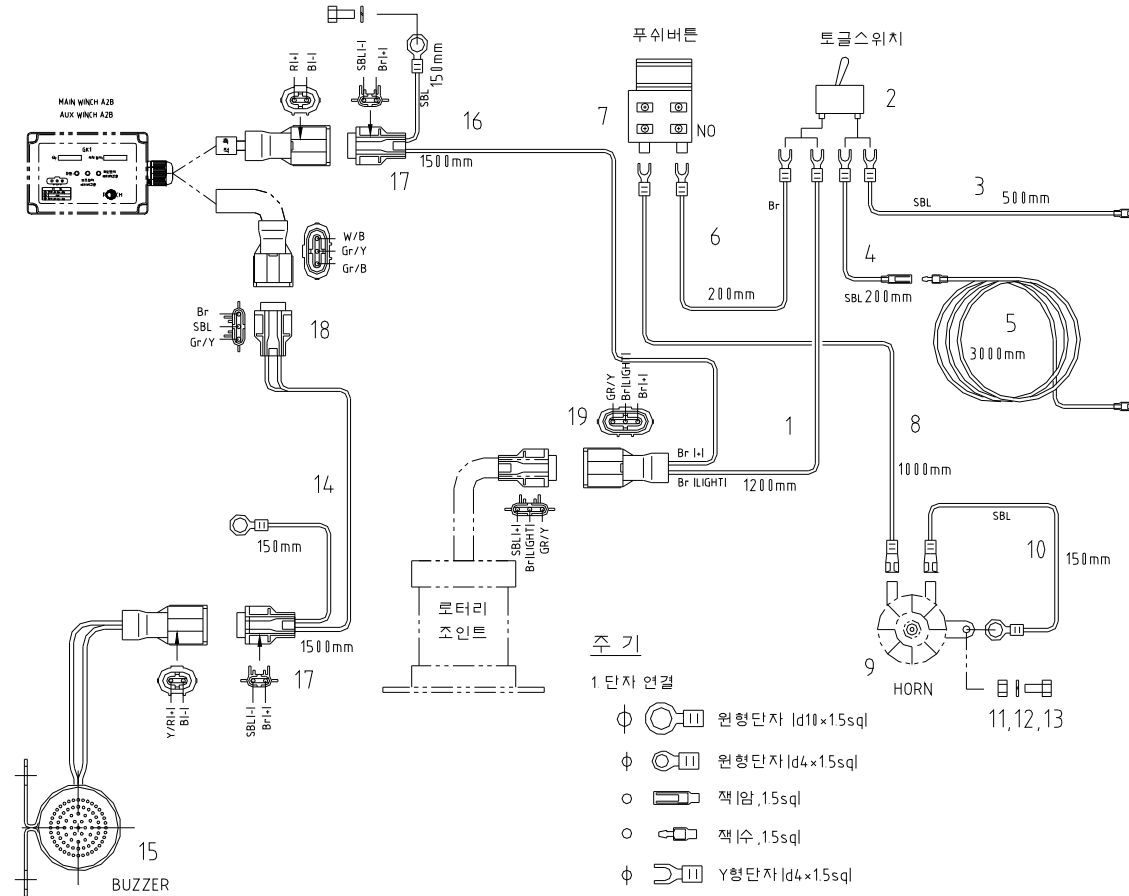
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-	E01-1181	전기 결합체 ELECTRIC ASS'Y	1	PRODUCTION PART	10	E01-0918	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ
1	E01-0053	토글 스위치 S/W, TOGGLE	1		11	2115906	육각머리 볼트 BOLT, HEX. HEAD	1	BA8×25
2	E01-0095	푸쉬 버튼 스위치 S/W, PUSH BUTTON	1		12	3612081	스프링 와셔 WASHER, SPRING	1	WS8
3	E01-0912	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	13	3111086	육각 너트 NUT, HEX.	1	NA8
4	E01-0913	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	14	S01-5663	3P MALE 결합체 3P MALE ASS'Y	1	
5	E01-0914	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	15	E01-1146	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ
6	E01-0915	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ					
7	E01-0916	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ					
8	E01-0917	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ					
9	E01-0082	혼 HORN	1						

SPARE PARTS LIST



전기 결합체 - 무선과권 ELECTRIC ASS'Y - TRANSMITTER

HIAB160TM-6 33-2 : 1
2015. 04.



주 기

1 단자 연결

- φ [Symbol] 원형단자 Id10×15sq
- φ [Symbol] 원형단자 Id4×15sq
- [Symbol] 잭 | 암, 1.5sq
- [Symbol] 잭 | 수, 1.5sq
- φ [Symbol] Y형단자 Id4×15sq
- ⊂ [Symbol] 평면용 잭 11.5sq

- #12 단자 연결 : NO

SPARE PARTS LIST



전기 결합체 - 무선과권
ELECTRIC ASS'Y - TRANSMITTER

HIAB160TM-6 33-2 : 1
2015. 04.

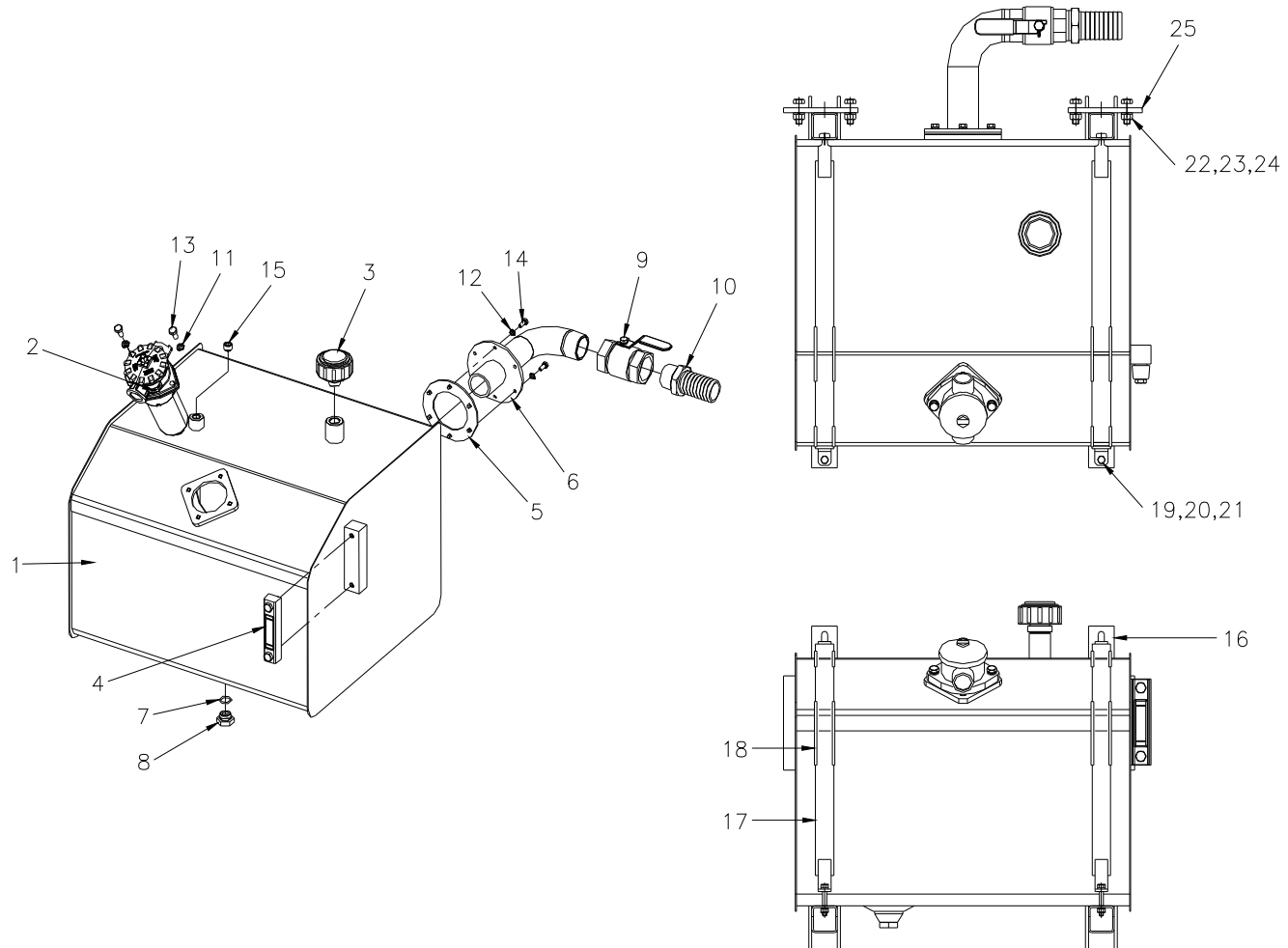
번호 No.	부품 번호 Part No.	품명 Description	수량 Q'ty	비고 Remarks	번호 No.	부품 번호 Part No.	품명 Description	수량 Q'ty	비고 Remarks
-	E01-1119	전기 결합체 ELEC. ASS'Y	1	무선과권 TRANSMITTER	10	E01-0918	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ
1	E01-0912	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	11	2115906	육각머리 볼트 BOLT, HEX. HEAD	1	BA8×25
2	E01-0053	토글 스위치 S/W, TOGGLE	1		12	3612081	스프링 와셔 WASHER, SPRING	1	WS8
3	E01-0913	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	13	3111086	육각 너트 NUT, HEX.	1	NA8
4	E01-0914	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	14	E01-0921	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ
5	E01-0915	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	15	E01-1500	버저 결합체 BUZZER ASS'Y	1	
6	E01-0916	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	16	E01-1146	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ
7	E01-0095	푸쉬 버튼 스위치 S/W, PUSH BUTTON	1		17	S01-5660	2P FEMALE 결합체 2P FEMALE ASS'Y	1	
8	E01-0917	전기 와이어 결합체 ELEC. WIRE ASS'Y	1	1.5SQ	18	S01-5662	3P FEMALE 결합체 3P FEMALE ASS'Y	1	
9	E01-0082	혼 HORN	1		19	S01-5663	3P MALE 결합체 3P MALE ASS'Y	1	

SPARE PARTS LIST



오일 탱크
OIL TANK

HIAB160TM-6 34 : 0
2013 . 05.



SPARE PARTS LIST



오일 탱크
OIL TANK

HIAB160TM-6 34 : 0
2013 . 05.

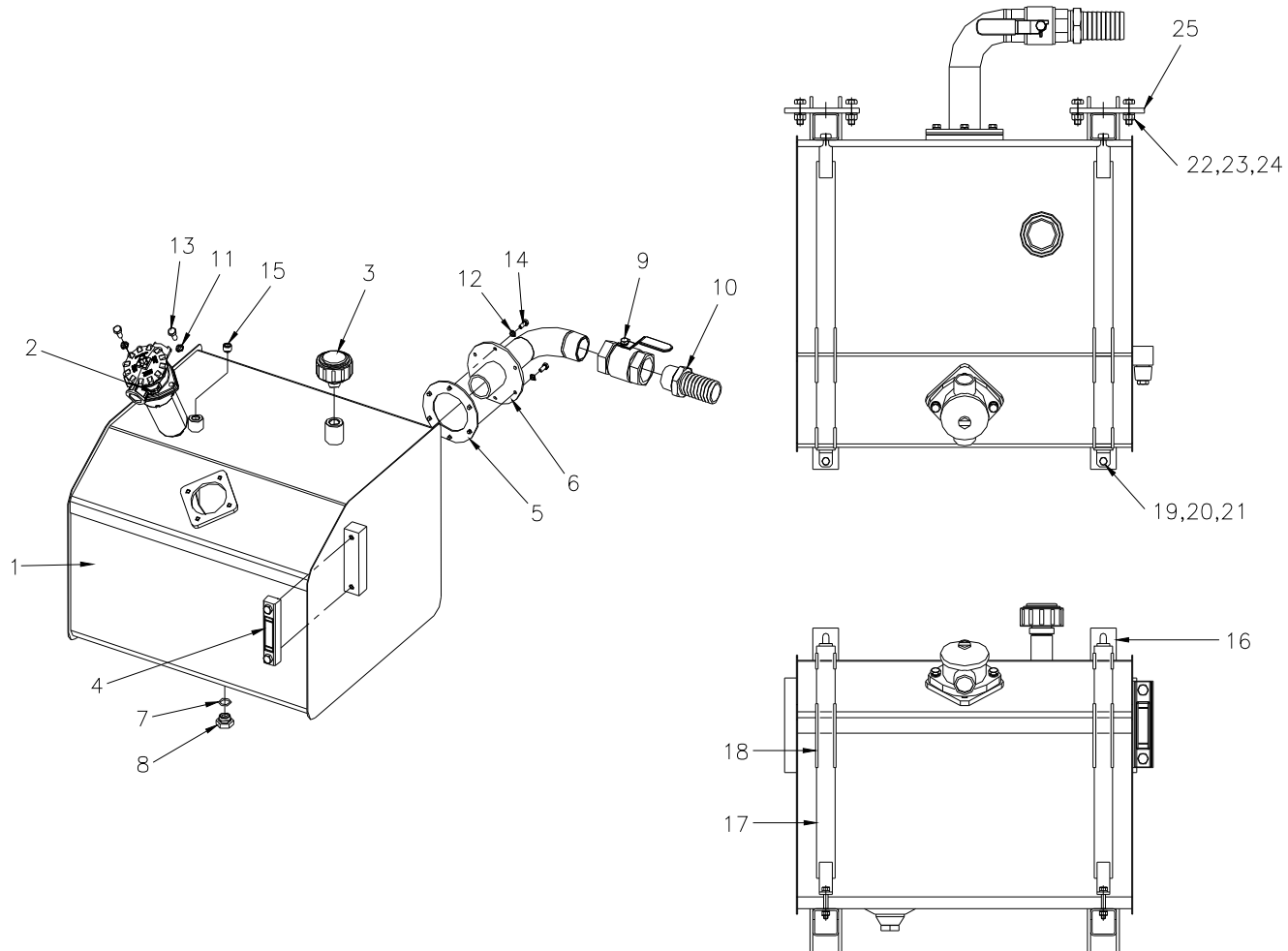
번호 No.	부품 번호 Part No.	품 명 Description	수량 Q`ty	비 고 Remarks	번호 No.	부품 번호 Part No.	품 명 Description	수량 Q`ty	비 고 Remarks
-	A02-0950	오일 탱크 조립체 OIL TANK ASS'Y	1	170 ℓ	10	S01-0741	석션 니플 NIPPLE, SUCTION	1	PT2,O,Φ52
1	A05-3260	오일 탱크 바디 BODY, OIL TANK	1		11	3612101	스프링 와셔 WASHER, SPRING	2	WS10
2	H01-1287	리턴 필터 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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오일 탱크
OIL TANK

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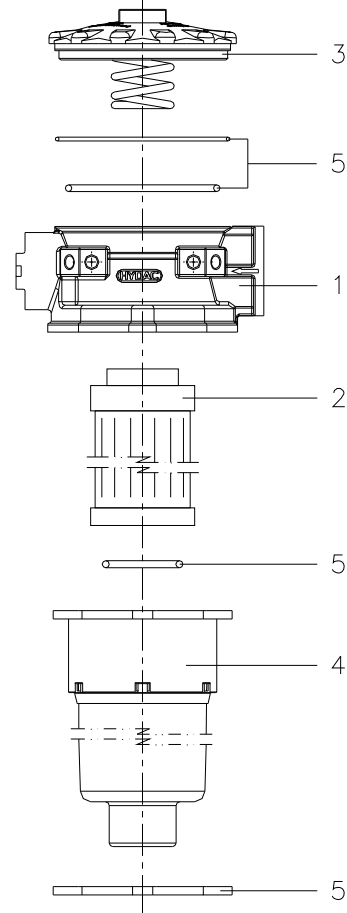
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20	3511081	평 와셔 WASHER, PLAIN	4	WP8					
21	3111081	육각 너트 NUT, HEX.	2	NA8					
22	2111546	육각 볼트 BOLT, HEX. HEAD	8	BA12×40					
23	3612121	스프링 와셔 WASHER, SPRING	8	WS12					
24	3111121	육각 너트 NUT, HEX.	8	NA12					
25	W01-5641	플레이트 PLATE	2	t9					

SPARE PARTS LIST



리턴 필터
FILTER, RETURN

HIAB160TM-6 35 : 0
2015. 04.



SPARE PARTS LIST



리턴 필터
FILTER, RETURN

HIAB160TM-6 35:0
2015. 04.

번호 No.	부품 번호 Part No.	품 명 Description	수량 Q'ty	비 고 Remarks	번호 No.	부품 번호 Part No.	품 명 Description	수량 Q'ty	비 고 Remarks
-	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						

SPARE PARTS LIST

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