



# STEELWRIST SQ ADAPTER PLATES FOR RAMMER HAMMERS

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# **OPERATOR'S GUIDE**

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# 1. SQ ADAPTER PLATES

## 1.1 OVERVIEW

The Steelwrist SQ adapter plates are mounts that attach Rammer hydraulic hammers to quick couplers. The adapter plate locks the hammer to the quick coupler and connects the hydraulic and electrical couplings without the need for the operator to exit the excavator cabin.

The Steelwrist SQ adapter plates are compatible with the following Rammer hammers as shown in the table below:

Hammer models	Adapter plate models				
	SQ60-5	SQ65	SQ70	SQ70/55	SQ80
R12P	x				
R16P	x	x	x	x	
R18P	x	x	x	x	
R25P			x	x	x
R35P			x	x	x
R45P					x
1533E	x	x			
2155E	x	x	x	x	

**Note:** For more information, see the applicable Rammer hammer Operator's manual and Steelwrist adapter plate User and Installation manual.

### INTENDED USE

The SQ adapter plates are used for attaching Rammer hydraulic hammers to quick couplers.

When using the adapter plate,

- the adapter plate should be used only with the recommended Rammer hammer models
- the adapter plate is to be used by professional users only
- the attachment coupler shall be SQ standard and have the same size as the bracket on the adapter plate
- the excavator's hydraulics and electronic controls must meet applicable norms
- the risk of falling loads due to relief valves in the machine hydraulics opening during the handling of heavy loads has to be considered.

The product may be used briefly under water, as long as it is not equipped with an electrical connection.

**FORESEEABLE MISUSE**

- Inadequate lifting and securing of the adapter plate or the hammer may cause the adapter plate or the hammer to fall, resulting in death or severe injury. Only use the lifting methods described in this installation guide and the applicable Rammer hammer manual. See “Installation” on page 7.
- Improper installation of the adapter plate may cause the adapter plate or the hammer to fall, resulting in death or severe injury. Install the adapter plate to the hammer according to this installation guide. See “Installation” on page 7.

**PROHIBITED USE**

- Do not pair a Rammer hammer with an unsuitable adapter plate. See “Overview” on page 4. for more information on the compatibility of SQ adapter plates and Rammer hammers.
- Do not knock the hammer against objects when the bracket is mounted.
- Do not use the hammer or other attachments to lift loads. Any loads must be lifted with the lifting hook on the quick coupler. For more information, see the Steelwrist quick coupler User's manual.
- Do not perform any installation, service, maintenance, or use tasks explicitly prohibited in this installation guide, the applicable Rammer hammer Operator's manual, the Steelwrist adapter plate User and Installation manual, and the Steelwrist quick coupler User's manual.

## 1.2 SAFETY

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Before installing the adapter plate on the Rammer hammer, read and follow the instructions given in this installation guide, the applicable Rammer hammer Operator's manual, and the Steelwrist adapter plate User and Installation manual.



### **WARNING!**

Improper installation, operation, or maintenance could cause death or severe injury! This product may be used or maintained only by those who have received proper training and have demonstrated the competence and skills needed for safe and proper operation or maintenance.



### **WARNING!**

Lack of approved PPE may cause severe injury or death. Wear approved PPE (approved hard hat, approved ear protection, approved safety boots, approved safety gloves, approved safety glasses, approved safety vest).

Operators and anyone in the vicinity of the product **MUST** wear approved personal protective equipment (PPE).




Proper PPE includes (but is not restricted to):




- Approved ear protection
- Approved eye protection
- Approved safety boots
- Approved hard hat
- Approved protective gloves
- Approved high visibility vest

Do not wear loose clothing or jewellery that can snag on controls or on other parts of the equipment. Confine long hair.

## 1.3 INSTALLATION

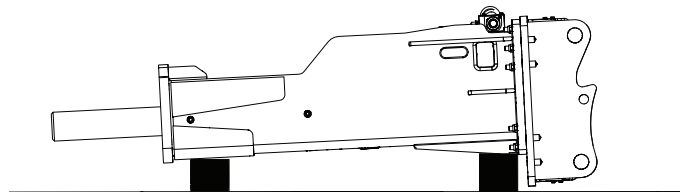
**Note:** The following installation instructions use figures of Rammer hammer R35P and SQ80 adapter plate as an example.

 <b>WARNING</b>	
 	<b>LIFTING HAZARD</b>
	Faulty lifting practice may cause severe injury or death.
	Keep yourself and bystanders out of the hazard zone of three meters during lifting. Never place load over people. Never ride a load.

 <b>WARNING</b>	
 	<b>SUDDEN RELEASE OF ENERGY HAZARD</b>
	The hammer's changed centre of gravity due to the installed adapter plate may cause severe injury or death.
	When securing the hammer for installation and lifting, take into account the changing centre of gravity. Wear proper personal protective equipment.

 <b>WARNING</b>	
 	<b>CRUSHING HAZARD</b> Improper handling of the product during installation may cause severe injury or death.
	Do not place fingers or feet between the adapter plate and hammer when positioning the adapter plate to the hammer. Wear protective gloves and safety boots.

1. Place the hammer on a suitable surface, in either a vertical or horizontal position.
  - a) When installing an adapter plate in the vertical position, place the hammer on an even surface. Secure the hammer properly to prevent it from falling over.
  - b) When installing an adapter plate in the horizontal position, place the hammer on supports, as shown in the figure below. Secure the hammer properly to prevent it from falling over.



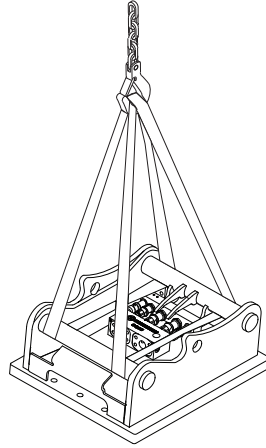
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**Note:** See the applicable Rammer hammer Operator's manual for more lifting instructions.



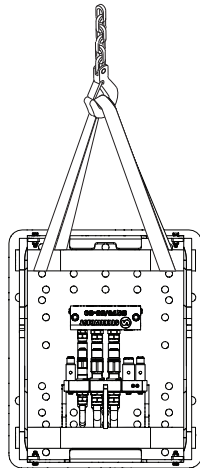
2. Lift the adapter plate with lifting slings and a suitable lifting device, such as a traverse with a chain winch. The lifting device must carry the weight of the adapter plate safely according to its specifications.

a) When installing an adapter plate in the vertical position, lift the adapter plate from the adapter's front and rear pins, as shown in the figure below.



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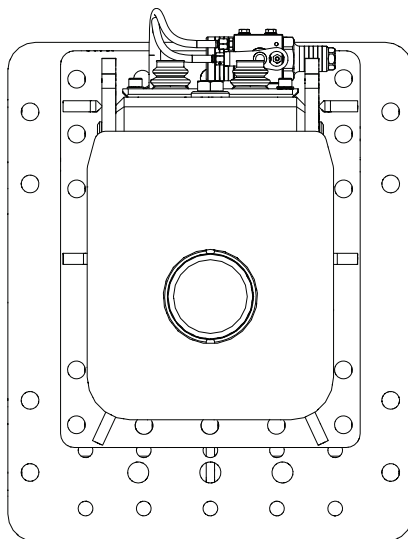
b) When installing an adapter plate in the horizontal position, lift the adapter plate from the adapter's front pin, as shown in the figure below.



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- Position the adapter plate's hose exit towards the in and out connection points of the hammer.

The figure below shows the adapter plate placed correctly with aligned holes for screw joints. See “Bolt pattern guidelines” on page 16.

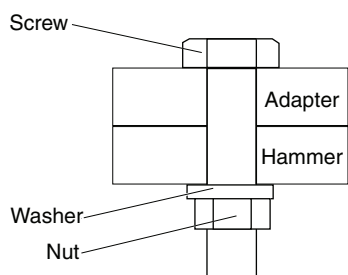


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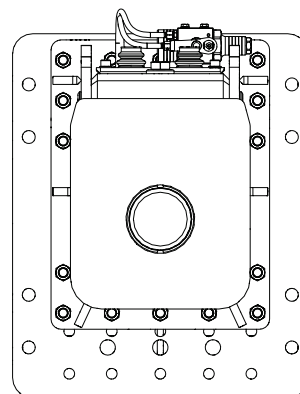
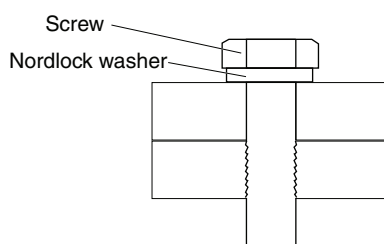
- To fasten the adapter to the hammer, tighten all the screw joints to the proper torque values.

**Note: All SQ adapters with threaded holes in the adapter plate are to be fastened with steel grade 8.8 screws.**

Screw joint for unthreaded holes

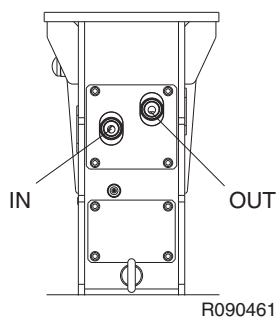


Screw joint for threaded holes

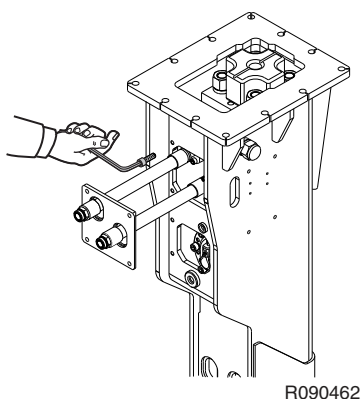


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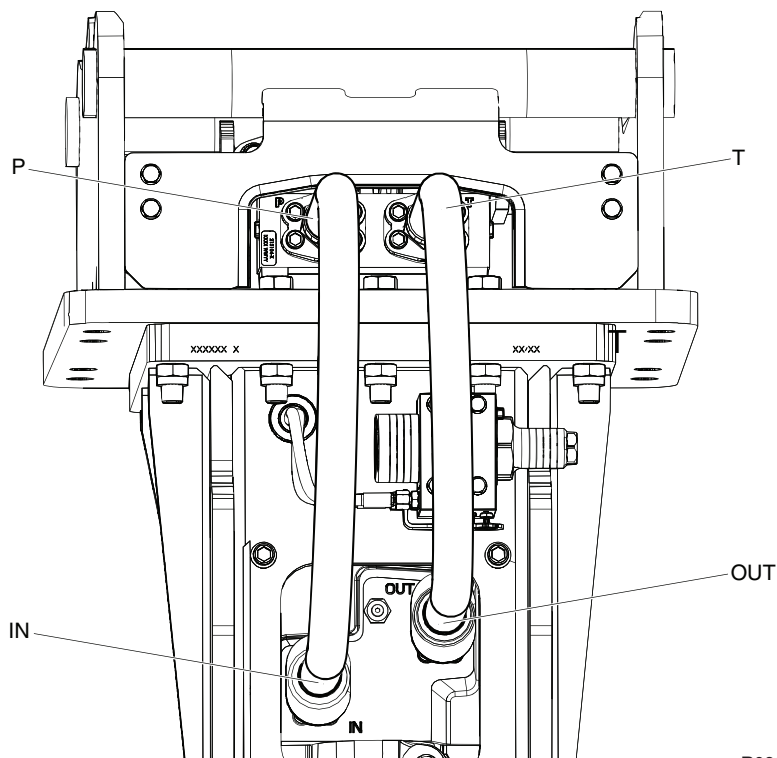
5. Remove the protective caps on the hammer's hydraulic connection ports. Collect all oil into a proper container and dispose of it properly.



6. Remove the protective plate from the hammer's hydraulic connections.

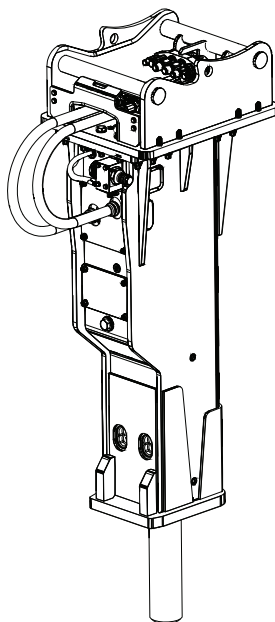


7. Attach a hose to the tank connection (T) on the adapter manifold and to the OUT connection on the hammer and fasten to the proper torque value.
8. Attach a hose to the pressure connection (P) on the adapter manifold and to the IN connection on the hammer and fasten to torque.



9. Fasten the flange connections with a screw joint: a Nordlock washer and a screw.
10. Install the protective plate to the hammer's hydraulic connections.

The installation is complete.



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**Note:** Check that the oil flow, operating pressure, and return line (tank) pressure are within specifications. See the hammer specifications in the applicable Rammer hammer Operator's manual.

## 1.4 OPERATION



### WARNING!

Before operation, ensure that the quick coupler is properly connected to the adapter plate. If not properly connected, the attachment could fall and cause death or severe injury.

**Note:** Before first-time operation, ease hydraulic pressure into the assembled adapter plate and hammer when coupled to the excavator to fill the system with oil gently.

For more information on operation, see the Steelwrist adapter plate User and Installation manual and Steelwrist quick coupler User's manual.

### ADAPTER PLATE AND QUICK COUPLER WEIGHTS

The weights of adapter plates and quick couplers affect the minimum working weight of the Rammer hammer. See the tables below for the adapter plate and quick coupler weights. See the weight of the hammer and tool in the applicable Rammer hammer Operator's manual.



### WARNING!

Always add the applicable adapter and quick coupler weights to the minimum working weight of the Rammer hammer to get the combined minimum working weight of the adapter, quick coupler, and hammer. Use the combined minimum working weight for weight-dependent activities (lifting, selecting the appropriate carrier, etc.).

#### *Adapter plate weights*

Adapter plate model	Adapter plate weight (kg)
SQ60-5	202
SQ65	229
SQ70	277
SQ70/55	278
SQ80	398

*Quick coupler weights*

Quick coupler model	Quick coupler weight (kg)
SQ60-5	121
SQ65	165
SQ70	245
SQ70/55	280
SQ80	430

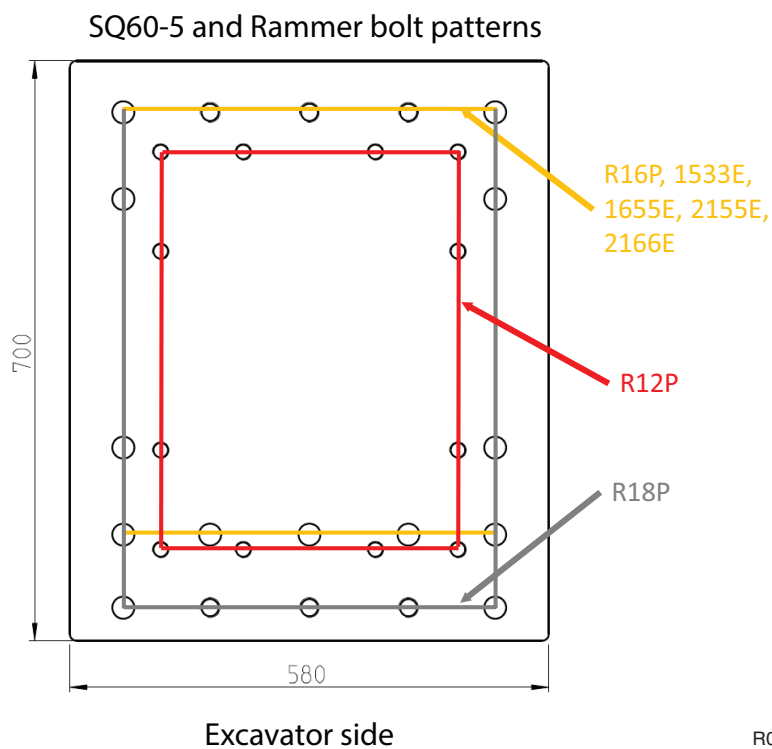
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# **BOLT PATTERNS AND TORQUES**

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# 1. BOLT PATTERN GUIDELINES

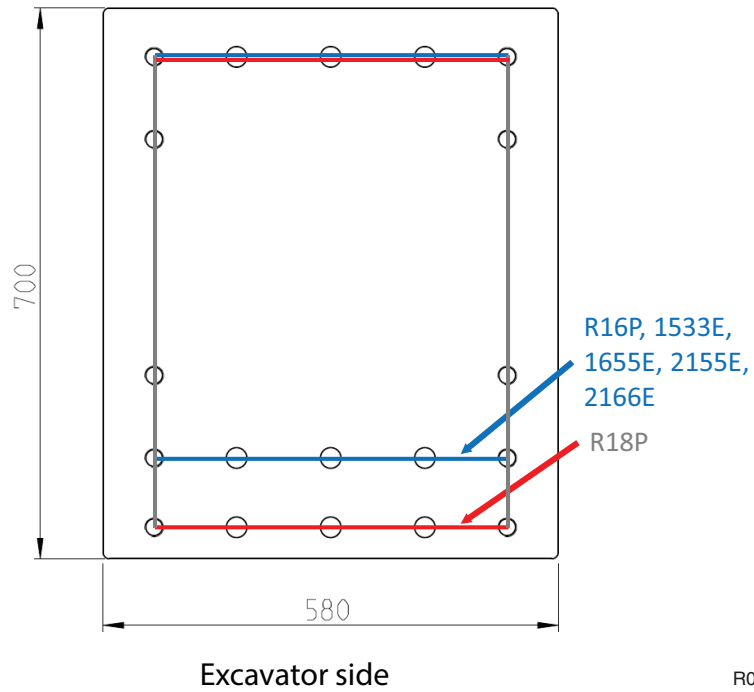
## 1.1 SQ60-5 AND RAMMER BOLT PATTERNS





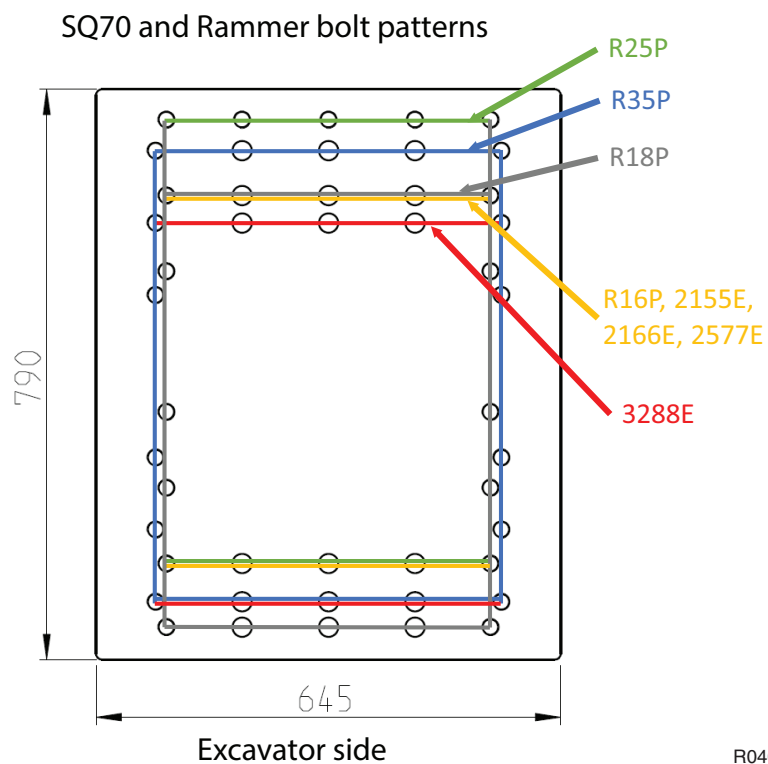
## 1.2 SQ65 AND RAMMER BOLT PATTERNS

SQ65 and Rammer bolt patterns



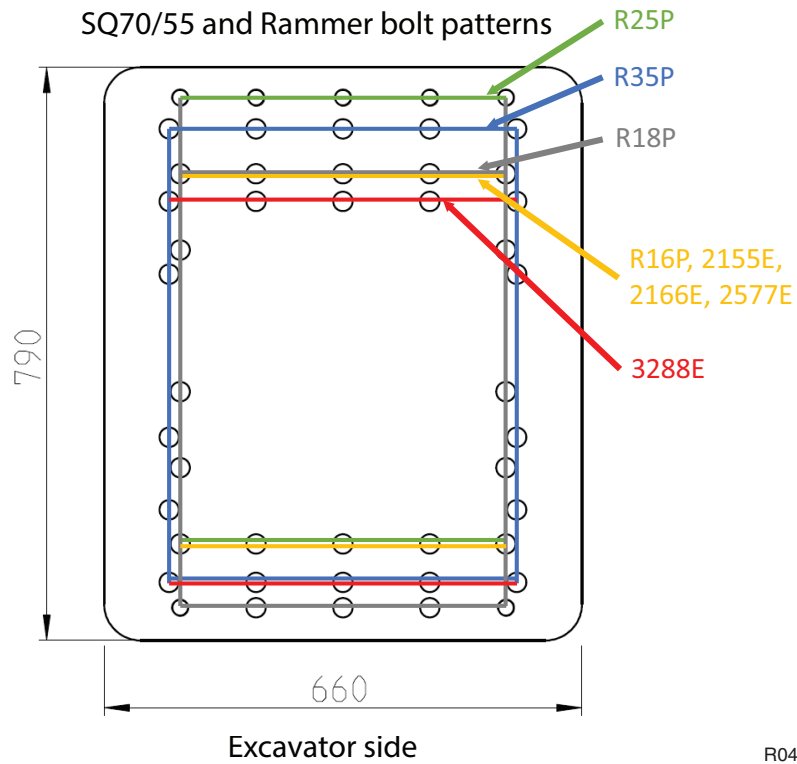
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### 1.3 SQ70 AND RAMMER BOLT PATTERNS

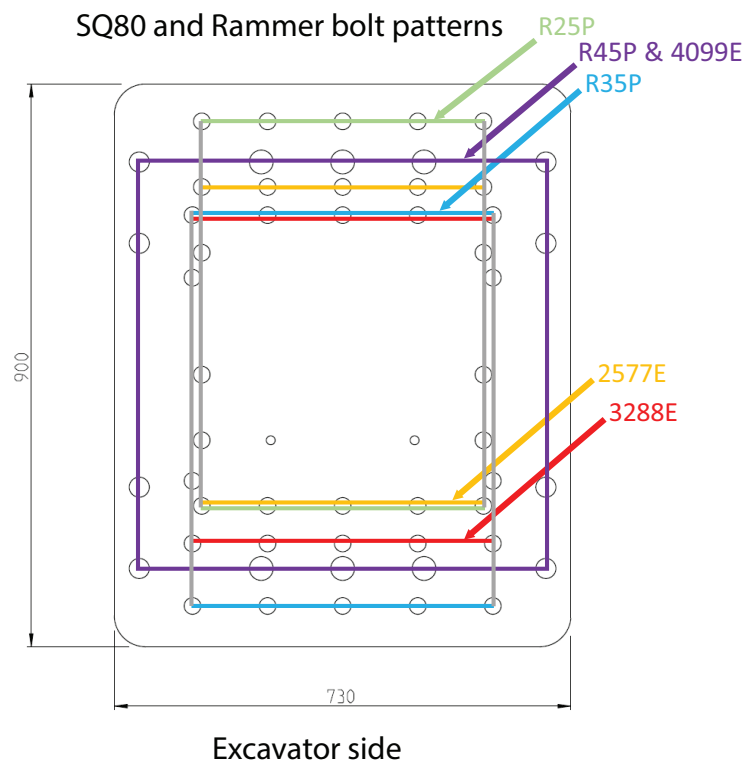


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## 1.4 SQ70/55 AND RAMMER BOLT PATTERNS



## 1.5 SQ80 AND RAMMER BOLT PATTERNS



R040392

## 2. TORQUES

### 2.1 TORQUES FOR SCREW JOINTS

	Strength class according to ISO 898-1		
	Steel grade		
	8.8	10.9	12.9
Thread, M	Torque, Nm	Torque, Nm	Torque, Nm
16	197	277	333
20	385	541	649
22	518	728	874
24	665	935	1120
27	961	1350	1620
30	1310	1840	2210
33	1770	2480	2980
36	2280	3210	3850

### 2.2 TORQUES FOR FLANGE CONNECTIONS

	Torques for flange connections			
SQ Adapter size	Flange type	Screws	Steel grade	Torque, Nm
SQ60-5	SAE3000	M10x35	12.9	79
SQ65	SAE6000	M14x45	8.8	128
SQ70	SAE6000	M14x45	8.8	128
SQ70/55	SAE6000	M14x45	8.8	128
SQ80	SAE6000	M14x45	8.8	128

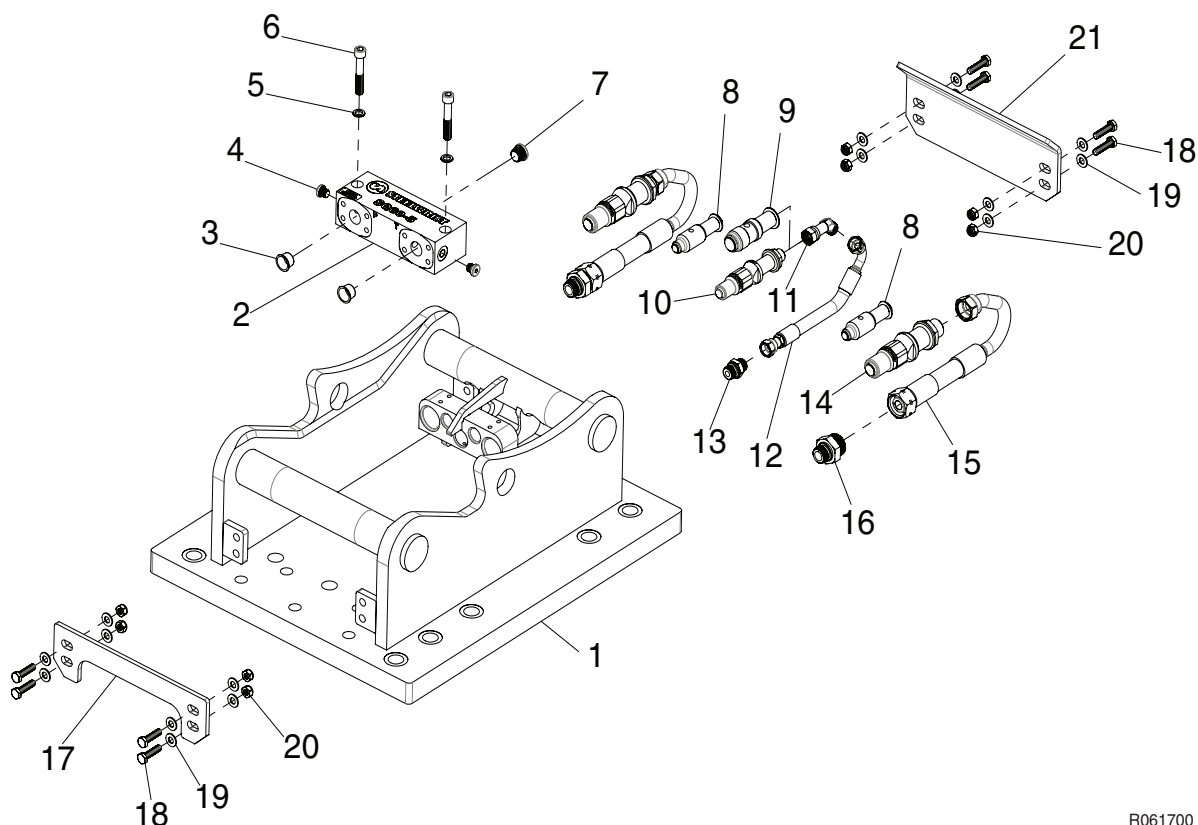


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# PARTS

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## 1. SQ60-5 ADAPTER PLATE



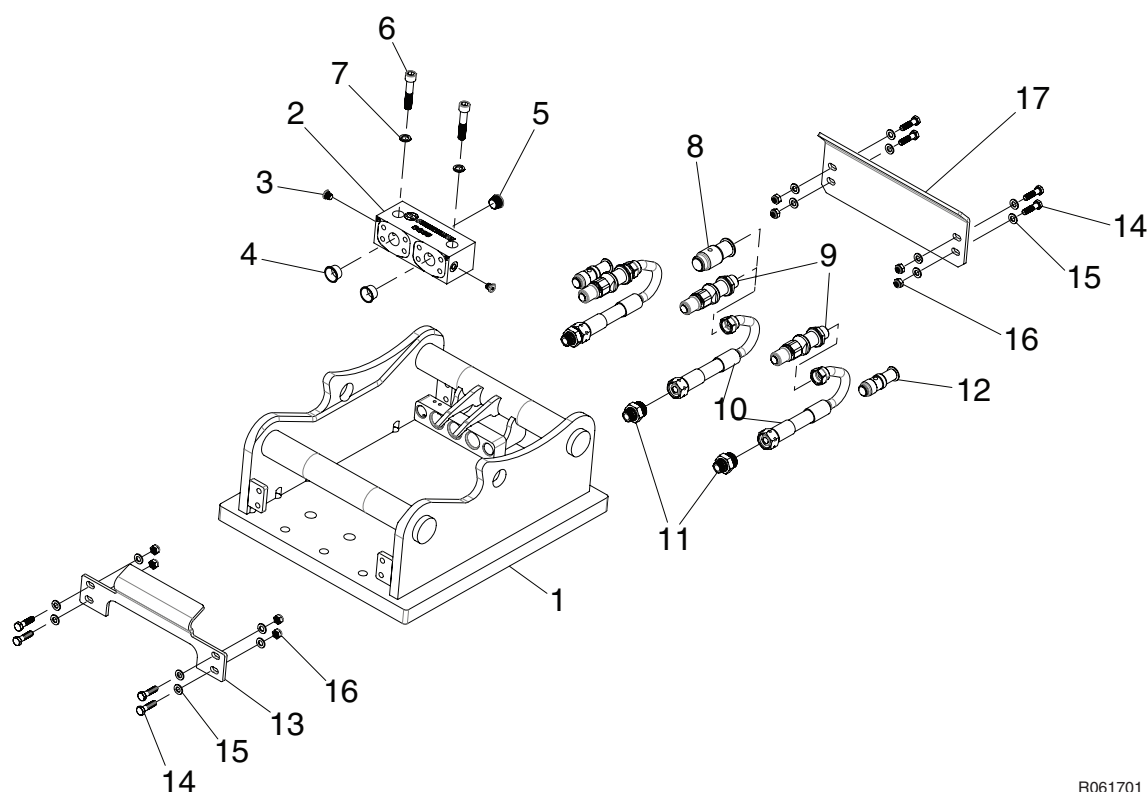
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Item	Description	Part no.	Specification	Note	Qty
Kit1	Adapter Plate Kit (incl. parts 1-21, Kit3, Kit4)	181765	For hammer model R12P		1
Kit2	Adapter Plate Kit (incl. parts 1-21, Kit3, Kit5)	181766	For hammer models R16P, R18P		1
1	Adapter Plate	181722			1
2	Connection Manifold	181726			1
3	Dust Cap	181731			2
4	Plug	955588			2
5	Washer	91012	NordLock M12		2
6	Screw	900000	MC6S M12x70		2
7	Plug	90424			1
8	Plug Dummy	181723			2
9	Plug Dummy	181737			1
10	Bulkhead Unit	181725			1
11	Adapter	181736			1
12	Hose	181727			1
13	Adapter	181730			1
14	Fitting	181724			2
15	Hose	181728			2
16	Adapter	181729			2
17	Cover Plate	181734			1



Item	Description	Part no.	Specification	Note	Qty
18	Screw	955508	M6S M12x45 8.8 FZB		8
19	Washer	181733	M10 (11-22-2) 8.8 FZB		16
20	Lock Nut	90909	8 M10 FZB		8
21	Cover Plate	181732			1
Kit3	Screw Kit	181091	Mounting kit		1
Kit4	Hose Assembly	181093	For hammer model R12P		2
Kit5	Hose Assembly	181092	For hammer models R16P, R18P		2

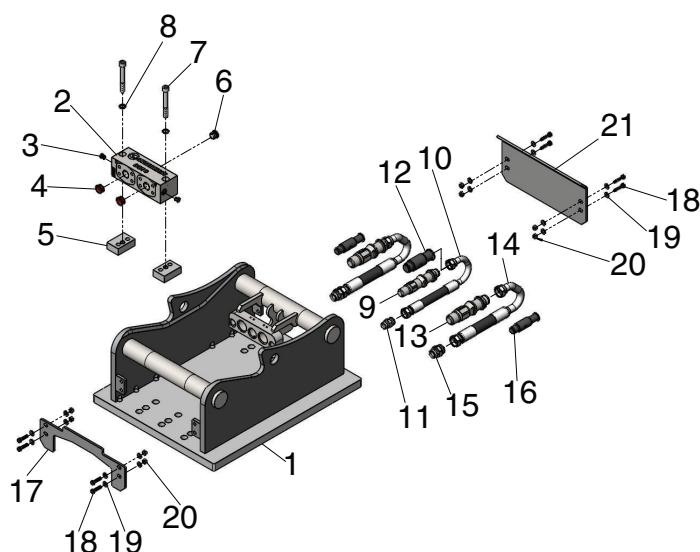
## 2. SQ65 ADAPTER PLATE



R061701

Item	Description	Part no.	Specification	Note	Qty
Kit1	Adapter Plate Kit (incl. parts 1-17, Kit2, Kit3)	181767	For hammer models R16P, R18P		1
1	Adapter Plate	181735			1
2	Connection Manifold	181738			1
3	Plug	955588			2
4	Dust Cap	181739			2
5	Plug	90401			1
6	Screw	90551	MC6S M16x80 12.9 Geomet		2
7	Washer	90597	NordLock M16		2
8	Plug Dummy	181773			1
9	Fitting	181724			3
10	Hose	181728			3
11	Adapter	181729			3
12	Plug Dummy	181737			2
13	Cover	181741			1
14	Screw	955318	M6S M12x45 8.8 FZB		8
15	Washer	903211	M12 8.8 FZB		16
16	Nut	91019	LM6M M12 6/8 FZB		8
17	Cover Plate	181740			1
Kit2	Screw Kit	181090	Mounting kit		1
Kit3	Hose Assembly	181007	For hammer models R16P, R18P		2

### 3. SQ70 ADAPTER PLATE



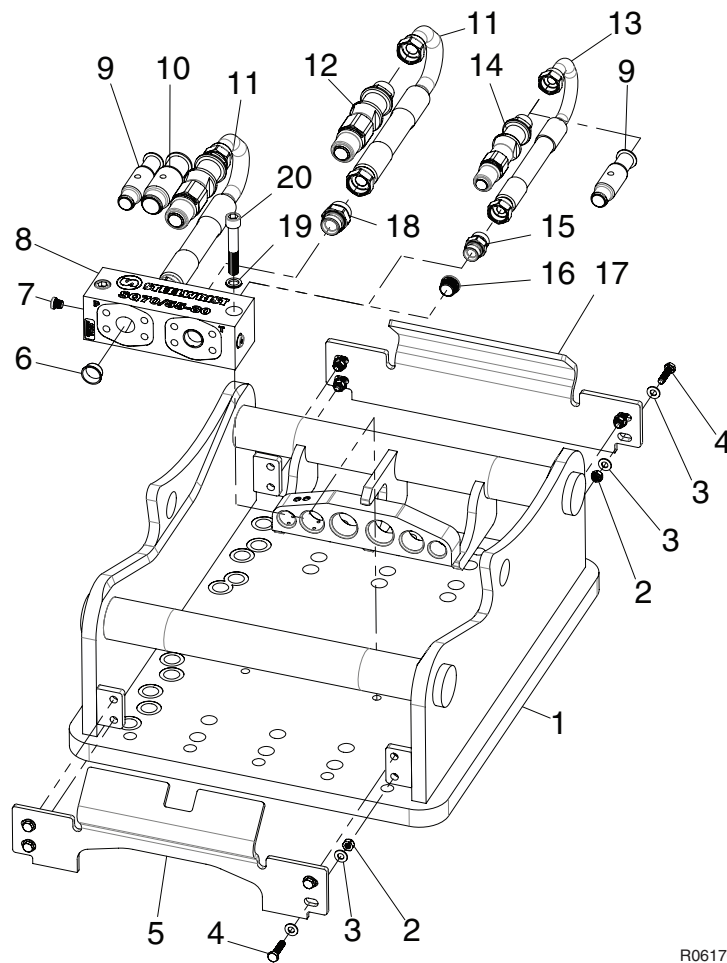
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Item	Description	Part no.	Specification	Note	Qty
Kit1	Adapter Plate Kit (incl. parts 1-21, Kit3, Kit4)	181768	For hammer models R16P, R18P		1
Kit2	Adapter Plate Kit (incl. parts 1-21, Kit3, Kit5)	181769	For hammer models R25P, R35P		1
1	Adapter Plate	181742			1
2	Connection Manifold	181747			1
3	Plug	955588			2
4	Dust Cap	181752			2
5	Spacer	181743			2
6	Plug	90401			1
7	Screw	901312	MC6S M16x120 12.9 Geomet		2
8	Washer	90597	NordLock M16		2
9	Bulkhead Unit	181746			1
10	Hose	181751			1
11	Adapter	181750			1
12	Plug Dummy	181757			1
13	Bulkhead Unit	181744			2
14	Hose	181749			2
15	Adapter	181748			2
16	Plug Dummy	181745			2
17	Cover Plate	181754			1
18	Screw	955508	M6S M10x40 8.8 FZB		8
19	Washer	181733	M10 (11-22-2) 8.8 FZB		16
20	Lock Nut	90909	8 M10 FZB		8

## SQ70 adapter plate

Item	Description	Part no.	Specification	Note	Qty
21	Cover Plate	181753			1
Kit3	Screw Kit	181009	Mounting kit		1
Kit4	Hose Assembly	181007	For hammer models R16P, R18P		2
Kit5	Hose Assembly	181002	For hammer models R25P, R35P		2

## 4. SQ70/55 ADAPTER PLATE

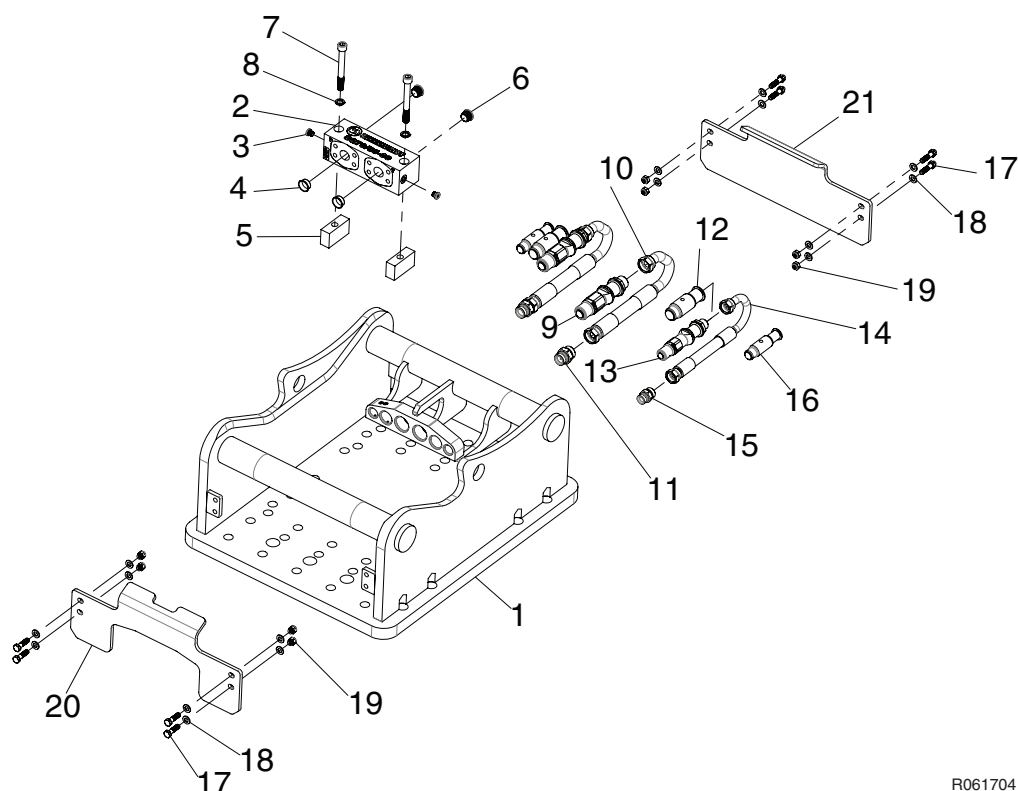


R061703

Item	Description	Part no.	Specification	Note	Qty
Kit1	Adapter Plate Kit (incl. parts 1-20, Kit3, Kit4)	181770	For hammer models R16P, R18P		1
Kit2	Adapter Plate Kit (incl. parts 1-20, Kit3, Kit5)	181771	For hammer models R25P, R35P		1
1	Adapter Plate	181755			1
2	Lock Nut	90909	8 M10 FZB		8
3	Washer	181733	M10 (11-22-2) 8.8 FZB		16
4	Screw	955508	M6S M10x40 8.8 FZB		8
5	Cover Plate	181760			1
6	Dust Cap	181752			2
7	Plug	955588			2
8	Connection Manifold	181758			1
9	Plug Dummy	181745			2
10	Plug Dummy	181757			1
11	Hose	181749			2
12	Bulkhead Unit	181744			2
13	Hose	181751			1
14	Bulkhead Unit	181746			1

<b>Item</b>	<b>Description</b>	<b>Part no.</b>	<b>Specification</b>	<b>Note</b>	<b>Qty</b>
15	Adapter	181750			1
16	Plug	90401			2
17	Cover Plate	181759			1
18	Adapter	181748			2
19	Washer	90597	NordLock M16		2
20	Screw	181756	MC6S M16x95 12,9 FZB		2
Kit3	Screw kit	181006	Mounting kit		1
Kit4	Hose Assembly	181007	For hammer models R16P, R18P		2
Kit5	Hose Assembly	181002	For hammer models R25P, R35P		2

## 5. SQ80 ADAPTER PLATE



R061704

Item	Description	Part no.	Specification	Note	Qty
Kit1	Adapter Plate Kit (incl. parts 1-21, Kit2, Kit3)	181772	For hammer models R25P, R35P, R45P		
1	Adapter Plate	181761			1
2	Connection Manifold	181758			1
3	Plug	955588			2
4	Dust Cap	181752			2
5	Spacer	181762			2
6	Plug	90401			2
7	Screw	954363	MC6S M16x140 12.9 Geomet		2
8	Washer	90597			2
9	Bulkhead Unit	181744			2
10	Hose	181749			2
11	Adapter	181748			2
12	Plug Dummy	181757			2
13	Bulkhead Unit	181746			1
14	Hose	181751			1
15	Adapter	181750			1
16	Plug Dummy	181745			2
17	Screw	955318	M6S M12x45 8.8 FZB		4
18	Washer	903211	M12 8.8 FZB		8
19	Nut	91019	LM6M M12 6/8 FZB		4

## SQ80 adapter plate

Item	Description	Part no.	Specification	Note	Qty
20	Cover Plate	181764			1
21	Cover Plate	181763			1
Kit2	Screw Kit	181004	Mounting kit		1
Kit3	Hose Assembly	181002	For hammer models R25P, R35P, R45P		2







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