

Mechspace

70

Original instructions

921A

EN

CE



EC declaration of conformity of the machinery / EG-försäkran om maskinens överensstämmelse

According to the Machinery Directive 2006/42/EC, Annex II A / i enlighet med EU:s Maskindirektiv 2006/42/EG, Bilaga II A

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Denomination / Benämning:	Machine type / Maskintyp:	Type / Typ:
Mechspace	Manipulator	70 70P 150 150P

Applied EC guidelines / Tillämpade EG-riktlinjer:

2006/42/EC Machinery Directive / Maskindirektivet

KRISTIANSTAD 2010-02-09

(Place and date)



(Signature)

Staffan Nilsson

Name:

Head of engineering department / Konstruktionschef

Position:

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1 • Safety instruction

Movomech AB's equipment is manufactured in accordance with the latest technological advances.

All products are manufactured according to the latest applicable European standards and directions, e.g. EG Machinery Directive 98/37/EG. The aim of this documentation is to provide the user with practical instructions for safe operation and simple maintenance of the equipment.

Anyone who deals with the installation of the equipment (including related equipment), operational procedure, use, maintenance, and/or repair functions must have read and understood:

- The instruction manual
- The safety regulations
- The safety instructions for each individual section.

In order to avoid misuse and to ensure the reliable operation of the products, we recommend that the instruction manual is always available to the user/operator.

Intended usage

The equipment is intended exclusively for transportation, lifting and lowering of load. Any other use, including the towing of a load and the transportation of passengers, is prohibited (see below for more examples).

Movomech AB does not accept responsibility for damage caused by such use. All risks are the sole responsibility of the user.

The equipment may only be used in perfect technical condition by trained staff, and in accordance with current safety and work protection regulations. Furthermore, the user must observe operational and maintenance conditions contained in the instruction manual.

Severe personal injury and damage to equipment can be caused by:

- Removal of covers and casings
- Non-professional installation of equipment
- Incorrect usage
- Insufficient maintenance

Prohibited usage

Certain types of activities and operations are prohibited, as in specific circumstances they can cause personal injury as well as permanent damage to the construction.

For example:

- It is prohibited to convey passengers using the equipment.
- Never transport suspended loads above anyone's head.
- Never drop a suspended load, and make sure it is lifted in a straight line.
- Never loosen secured or fastened loads by using the equipment.
- Do not overload.
- Do not leave a suspended load unattended.

General safety aspects

The instruction manual should always be kept within easy reach of the equipment. It contains important safety information and sections that relate to guidelines, norms, and regulations.

Failure to follow the safety regulations in this instruction manual may result in personal injury or death.

In addition to the instruction manual, generally applicable regulations and rules must be followed and adhered to in order to avoid accidents and protect the environment.

This also applies to regulations relating to the handling of products dangerous to the environment and the use of personal safety equipment.

As regards all work associated directly or indirectly with the equipment, the user must follow and adhere to all the above regulations as well as current work protection and safety regulations.

In spite of this, a life-threatening risk still prevails in cases where the equipment is used and operated by non-trained or non-in-

structed staff in a non-professional or non-intended way.

The user should supplement the instruction manual with instructions that consider the nature of the operation, e.g. company organisation, work procedures, and number of staff.

The members of staff who are assigned to work with the equipment must have read the instruction manual prior to undertaking any work, and he/she should pay particular attention to the chapters containing safety instructions.

It is too late once work has commenced.

This applies in particular to members of staff who are working with the equipment on a temporary basis, e.g. for maintenance purposes.

When convenient, the staff should be tested on their knowledge of the manual's contents that relate to safety and accident awareness.

The user is responsible for ensuring that the equipment is used only when it is in perfect condition and that all applicable and relevant safety regulations and requirements are followed.

The equipment should be taken out of operation immediately if functional damage or defects are discovered.

Personal safety equipment should be used as and when necessary, or when required by regulations.

Safety and warning devices, such as signs, stickers and labels must not be removed or made illegible.

All safety and warning devices on or adjacent to the equipment should be complete and maintained in a legible/functional condition.

All changes, extensions or reconstruction that may affect safety are forbidden without written permission from Movomech AB. This also applies to assembly and adjustment of safety equipment and welding of structural parts.

Spare parts must comply with Movomech AB's stated technical requirements. This compliance is guaranteed when original spare parts are used. The intervals prescribed or stated in the instruction manual for regular testing/inspection must be adhered to!

Staff selection and qualifications

Reliable staff must carry out work with/on the equipment. Regulations that apply to under-age persons must be followed.

The user is responsible for supplying necessary training and instructions to those that he/she employs, including professionals and/or apprentices.

It is recommended that the user draws up instructions and guidelines relating to the causes of errors, communicates these to the relevant staff, and posts directions on appropriate and clearly visible places.

It is recommended that the user makes sure that the knowledge of the staff is adequate as regards the following points, prior to the operation of the construction:

- Knowledge of the contents of the instruction manual
- Knowledge of the safety and user regulations contained

Safety instruction

- therein
- Knowledge of applicable work protection regulations

Only trained and instructed staff should be permitted to work with the equipment. Parameters relating to use, maintenance, and installation should be clarified.

Safety instructions for usage

The only persons allowed to work on the electrical equipment are competent staff members who work in accordance with regulations and standards for high-voltage equipment. No persons under the influence of drugs, alcohol or medication which affects their ability to react, are allowed to use, maintain, or repair the construction.

All stated actions and instructions relating to work protection and issues relating to general safety and protection of workers that should be carried out or studied prior to, during or following operation must be followed to the letter. Failure to do so may result in fatal accidents.

The equipment should be stopped or taken out of operation at the time of detection of faults relating to work protection and operational accessibility. Safety equipment must not be deactivated, altered or used in a way that conflicts with applicable regulations. Appropriate actions must be taken to ensure safe operation and functional conditions for the user. The equipment should only be used when all protective and safety equipment, such as detachable guards and emergency stop devices, are in place and in working order.

Any type of modification and alteration of the equipment is prohibited.

However, this does not apply to lesser changes that do not affect the strength, operational safety or work protection, or to actions which promote an increased level of safety. The fundamental responsibility for these changes lies with the user. If in doubt, contact Movomech AB for written approval of the actions prior to implementation.

The equipment should be stopped and locked immediately when functional faults occur.

Faults should be corrected immediately!

Following an "emergency stop" the user has to wait for the cause of the disruption to be repaired and for an assurance that there is no further danger before he/she reconnects the equipment and resumes operation.

The equipment should be disconnected immediately in the following cases:

- When electrical equipment, cables, and/or insulation material is damaged
- When brake functions and/or safety equipment are defect

Specific local circumstances or applications may lead to situations that were unknown at the time of writing this document. In such cases, the user must ensure safe operation and disconnect the equipment until measures to maintain safe operation have been carried out in conjunction with Movomech AB or other authorised party.

Ensure that no one can become injured when they use the equipment prior to connecting/activating the equipment.

If the user notices the presence of persons who may become injured during operation, the operation should be discontinued immediately and must not be resumed until these persons have left the dangerous area.

The user must make sure that the equipment is in a perfect and operationally safe condition prior to all operations using the equipment. The user should carry out all prescribed safety measures and make sure that automated procedures are completed when the equipment is disconnected (e.g. when there are deficiencies as regards operational and personal safety, an emergency situation exists, repair or maintenance is being carried out, damage is noticed or at the completion of work).

Work with the equipment is only allowed when the operator has been instructed to do so by his superior, and if the operator has knowledge of the equipment and its function.

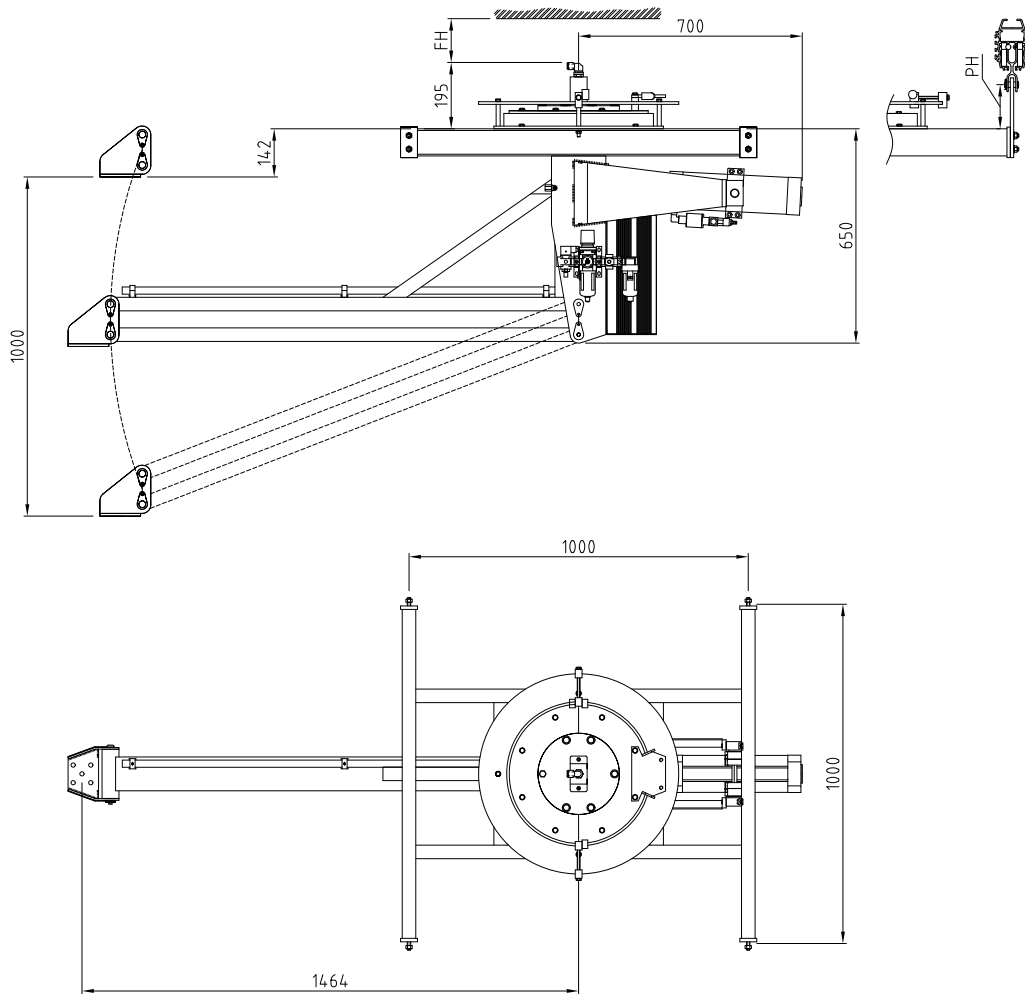


2 • Technical data

Load capacity	Maximum torque	Hoisting speed	Rotation	Maximum tare weight
70 kg	500 Nm	0-40 m/min	0-310° 0-360° (option)	125 kg
Medium	Working pressure	Air consumption	Working temperature	Noise level
Ait Non-lubricated	5,5-7 bar	600 l _n /min	5-40°C	< 70 dB (A)
Hysteresis				
Contact Movomech				

Basic model:

733284

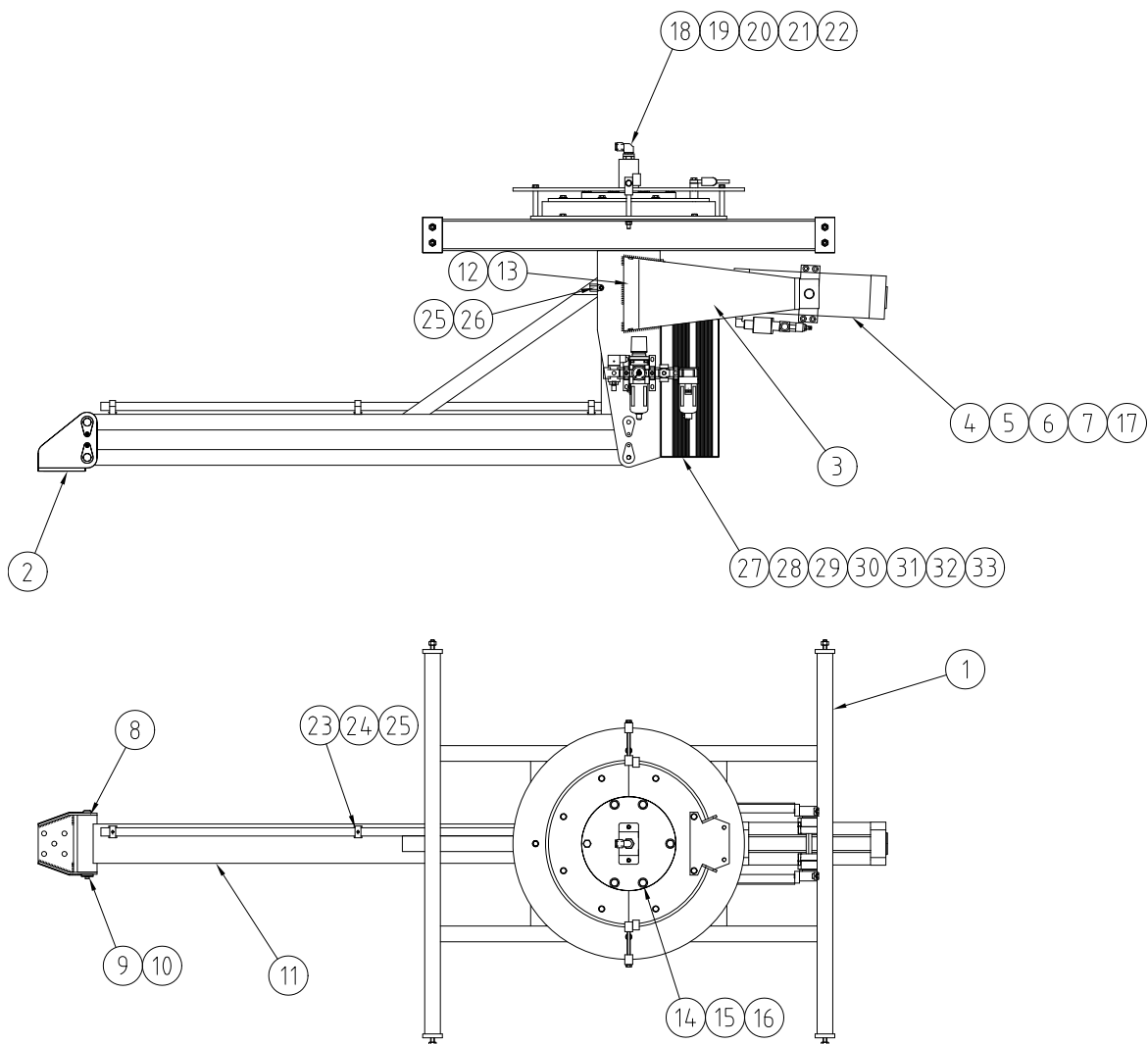


FH = Upper clearance, minimum of 50 mm
 PH* = Height of suspension

* Refer to specification

3 • Basic modeles

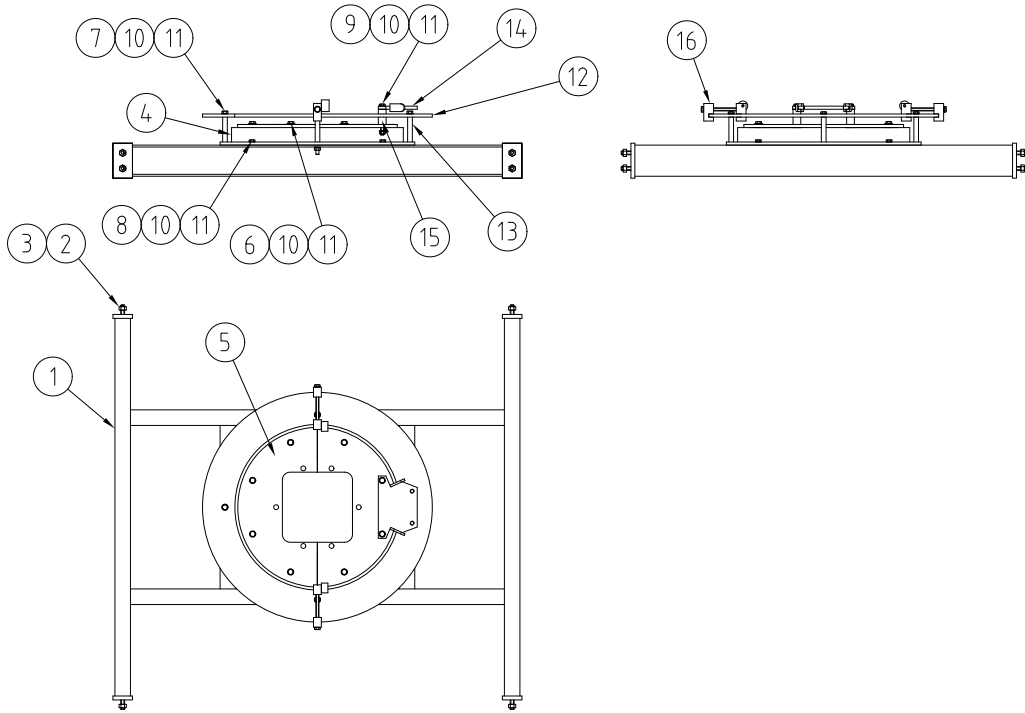
733284



Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Cross unit	733858	21	1	Muff	731627
2	1	Bracket	732063	22	1	Push-in fitting	731626
3	1	Frame	732483	23	1,4 m	Protective hose	730959
4	1	Cylinder	731686	24	3	Hose holder	730962
5	1	Bracket	731687	25	4	Screw	731331
6	1	Rod eye	731900	26	1	Rubber clamp	731555
7	1	Trunnion mounting	731688	27	1	Base plate	732161
8	8	Bearing	731673	28	1	Cover	732169
9	4	Shaft	732061	29	1	End cover	732163
10	4	Screw	731331	30	1	End cover	732162
11	1	Bom	732541	31	8	Screw	731036
12	1	Shaft	731685	32	4	Screw	730280
13	2	Lock ring	731649	33	4	Nut	730101
14	6	Lock nut	730243				
15	12	Washer	730244				
16	6	Screw	730258				
17	4	Screw	730351				
18	1	Bracket	732034				
19	2	Screw	731331				
20	1	Push-in fitting	731636				

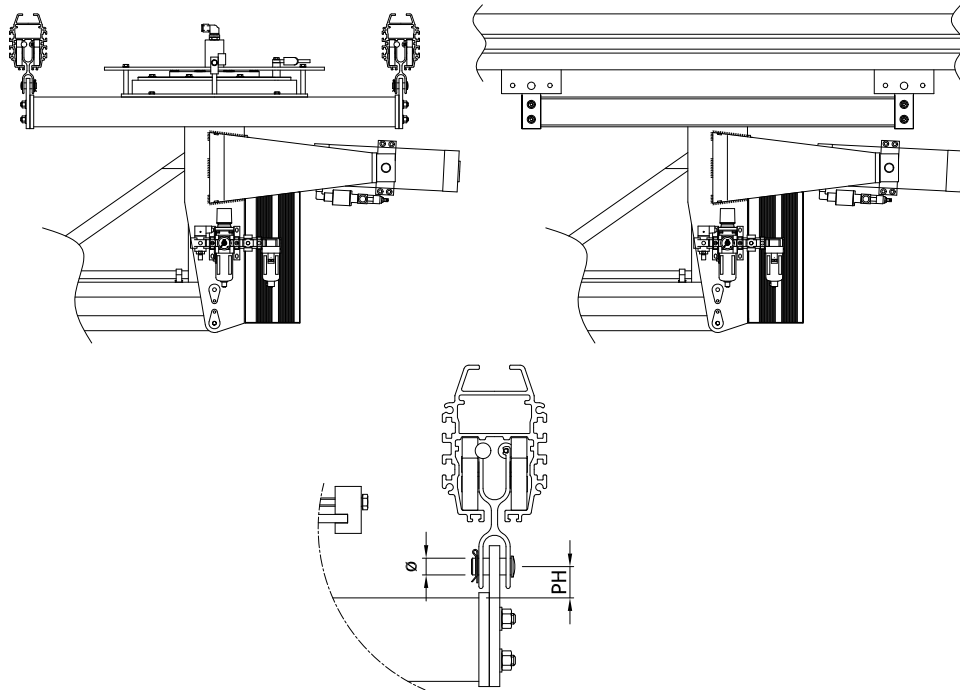
Basic modeles

Cross unit
733858



Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Cross	731346	11	16	Locking nut	730117
2	8	Locking nut	730243	12	1	Brake disc	731374
3	8	Washer	730244	13	4	Distance sleeve	731314
4	1	Swivel ring	731309	14	1	Bracket	731344
5	2	Plate	733287	15	2	Distance sleeve	732270
6	6	Screw	731684	16	2	Rotation limiter	731315
7	4	Screw	731323				
8	4	Screw	731348				
9	2	Screw	731321				
10	32	Washer	730308				

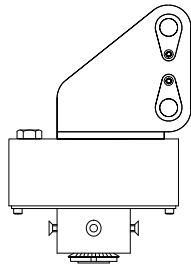
4 • Suspensions



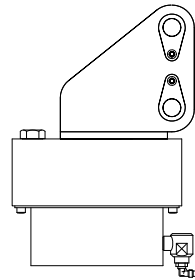
* Refer to specification

Suspension PH [mm]	ø Mounting hole		
	12,5 [mm]	16,5	20,5
	Art.no		
50	733833	733835	733837
>50 <500*	733834	733836	733838

5 • Tool adaptors



Rotation unit

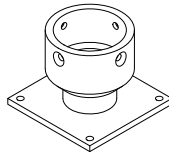


Rotation unit with brake

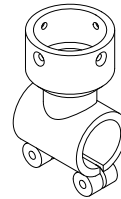
Muff coupling



Muff with mounting bracket



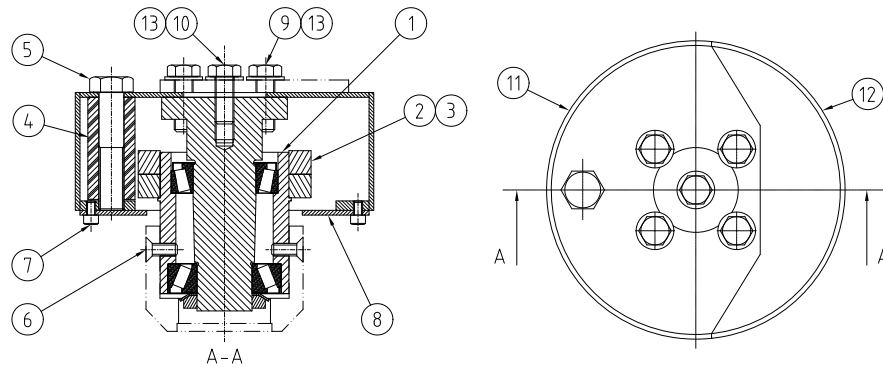
Muff with mounting pipe



Type	Art.no	Page
Rotation unit	(732067)	11
incl. muff coupling	732222	-
incl. muff with mounting bracket	732223	-
incl. muff with mounting pipe	732224	-
Rotation unit with brake	(732068)	12
incl. muff coupling	732219	-
incl. muff with mounting bracket	732220	-
incl. muff with mounting pipe	732221	-

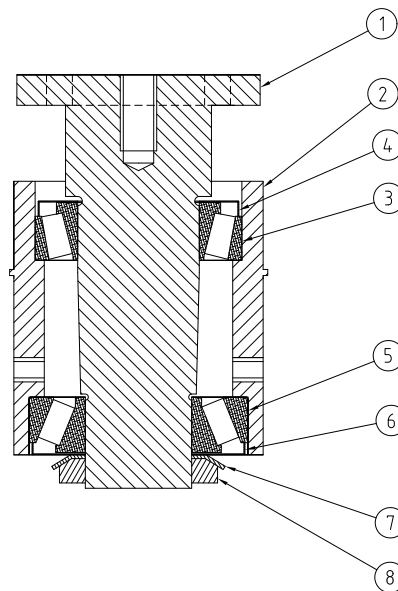
Tool adaptors

Rotation unit 732067



Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Bearing unit	733377	8	1	Cap	731493
2	2	Rotation limiter	731490	9	4	Screw	732055
3	2	Screw	730266	10	1	Screw	732046
4	1	Rubber damper	731492	11	1	Cover	732256
5	1	Screw	731488	12	1	Cover	732254
6	4	Screw	731487	13	5	Washer	730244
7	8	Screw	731486				

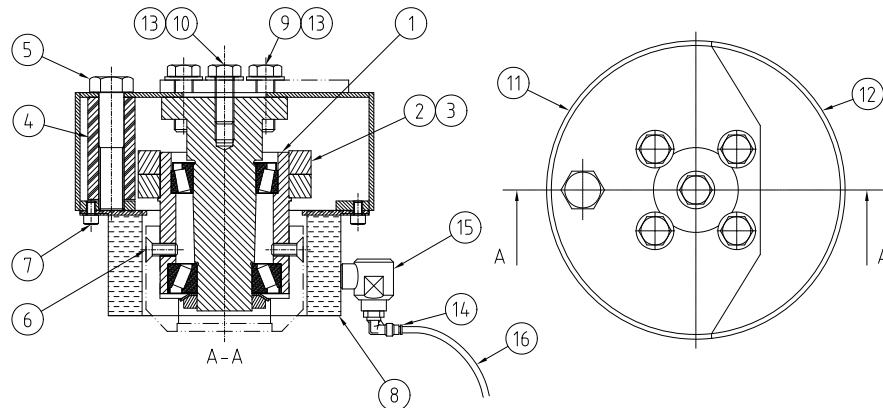
Bearing unit 733377



Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Shaft	732045	5	1	Conical roller bearing	731436
2	1	Housing	731489	6	1	Nilosring	731437
3	1	Conical roller bearing	731434	7	1	Lock washer	731438
4	1	Nilosring	731435	8	1	Shaft nut	731439

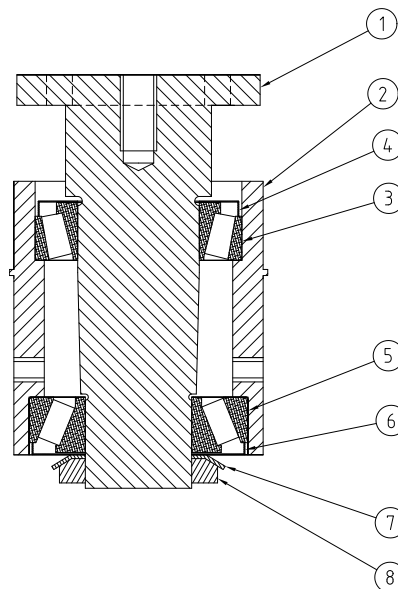
Tool adaptors

Rotation unit with brake 732068



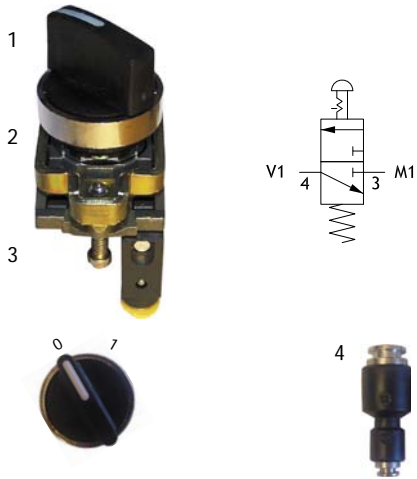
Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Bearing unit	733377	9	4	Screw	732055
2	2	Rotation limiter	731490	10	1	Screw	732046
3	2	Screw	730266	11	4	Cover	732256
4	1	Rubber damper	731492	12	4	Cover	732254
5	1	Screw	731488	13	1	Washer	730244
6	4	Screw	731487	14	1	Push-in L-fitting	730873
7	8	Screw	731486	15	1	Rapid exhaust valve	731502
8	1	Brake	731494	16	1	Hose	730673

Bearing unit 733377



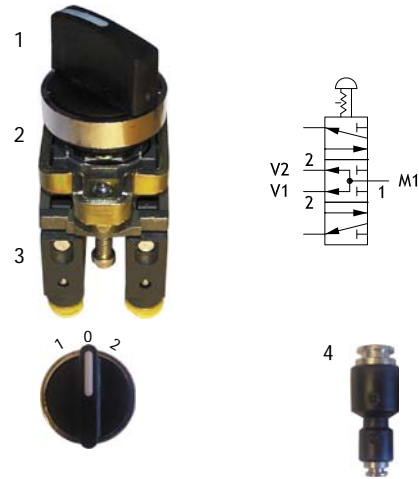
Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Shaft	732045	5	1	Conical roller bearing	731436
2	1	Housing	731489	6	1	Nilosring	731437
3	1	Conical roller bearing	731434	7	1	Lock washer	731438
4	1	Nilosring	731435	8	1	Shaft nut	731439

6 • Control units



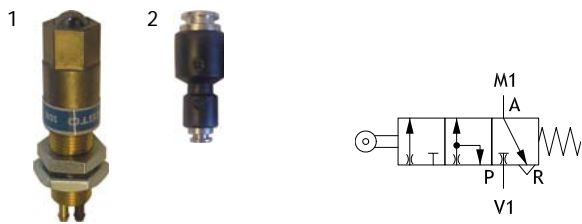
Selector switch 2 fixed positions
Art.no
736347

Position	Qty.	Denomination	Art.no
1	1	Selector switch	734356
2	1	Bracket	734316
3	1	Front panel valve NC	734314
4	1	Reduction	733436



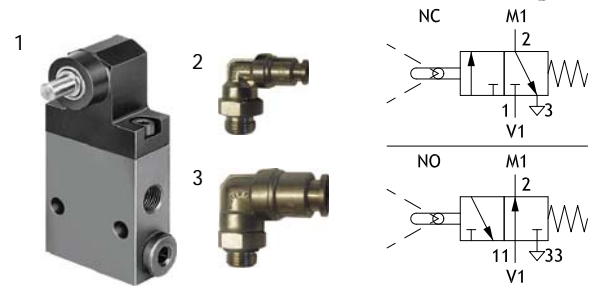
Selector switch 3 fixed positions
Art.no
736348

Position	Qty.	Denomination	Art.no
1	1	Selector switch	734357
2	1	Bracket	734316
3	2	Front panel valve NO	734315
4	1	Reduction	733436
5	1	Y-Push-in fitting	733439



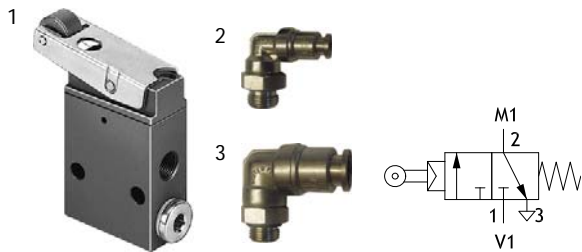
Limit switch with ball actuator
Art.no
733593

Position	Qty.	Denomination	Art.no
1	1	Valve	732637
2	1	Reduction	733436



Swivel lever valve, complete with A, B or C
Art.no
733595

Position	Qty.	Denomination	Art.no
1	1	Valve	732672
2	1	Push-in fitting	730873
3	1	Push-in fitting	731578



Roller lever valve
Art.no
733594

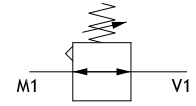
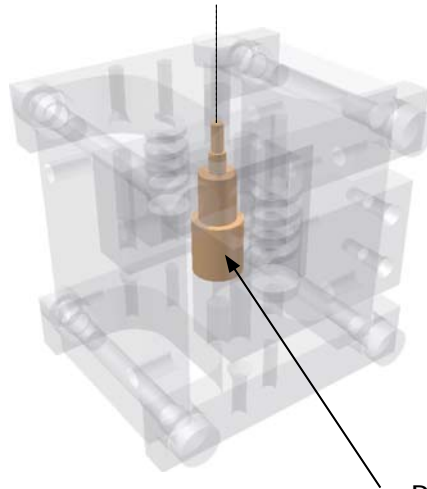
Position	Qty.	Denomination	Art.no
1	1	Valve	
2	1	Push-in fitting	730873
3	1	Push-in fitting	731578

Lever

A	1	Short swivel lever	733589
B	1	Long swivel lever	732943
C	1	Rod swivel lever	733512

Control units

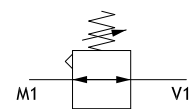
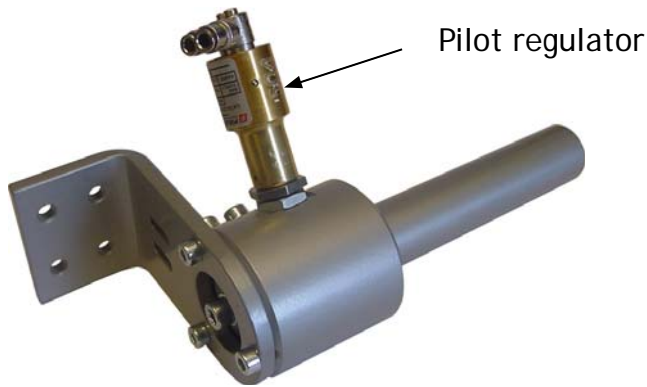
Parallelogram
731386



Pilot regulator

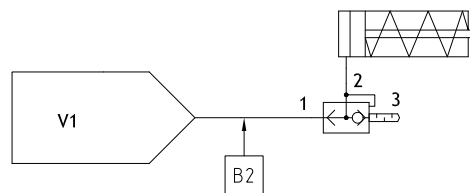
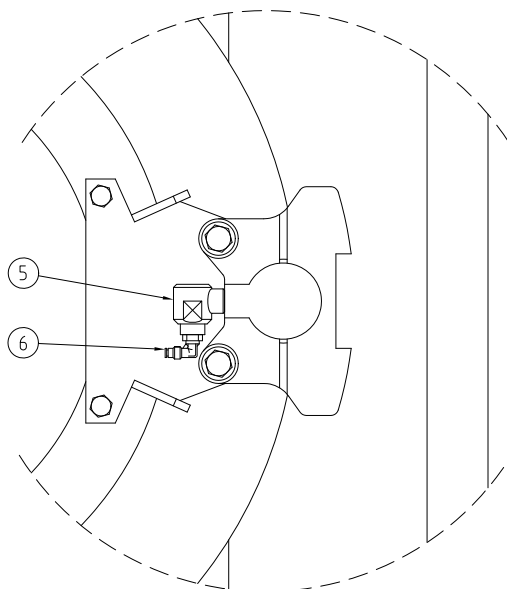
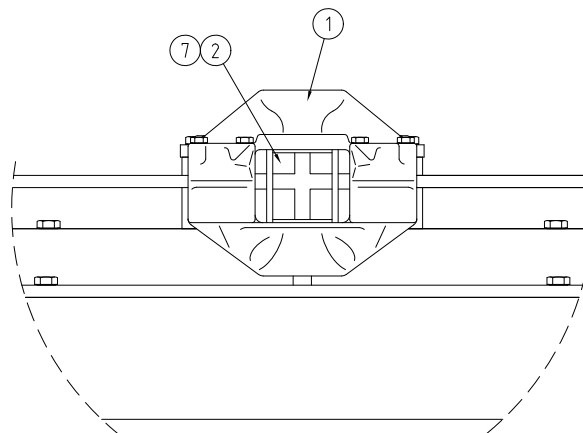
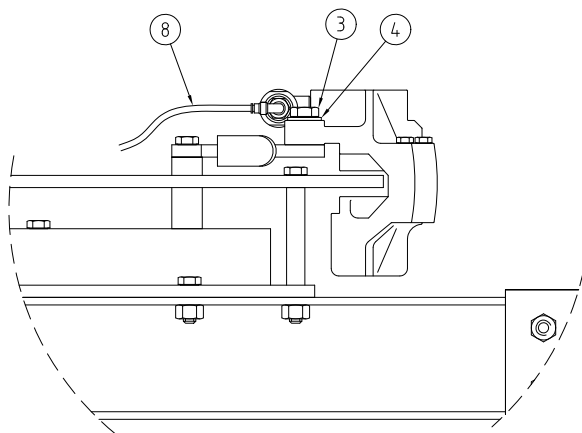
Throttle 1,7 bar
731853

Throttle 3,4 bar
731854



7 • Optional products

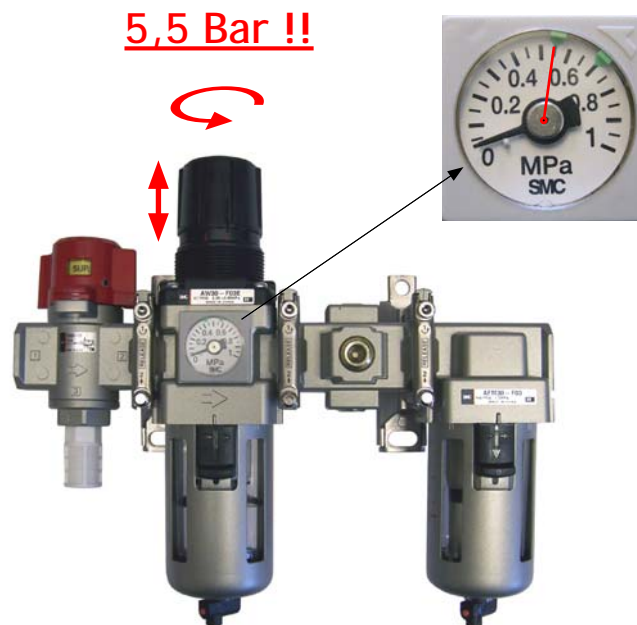
Brake unit
731505



Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Brake calliper	731504	6	1	Push-in L-fitting	730873
2	2	Brake lining	731503	7	1	Mounting kit	732414
3	2	Screw	731325	8	1	Hose	730673
4	2	Washer	730549				
5	1	Rapid exhaust valve	731502				

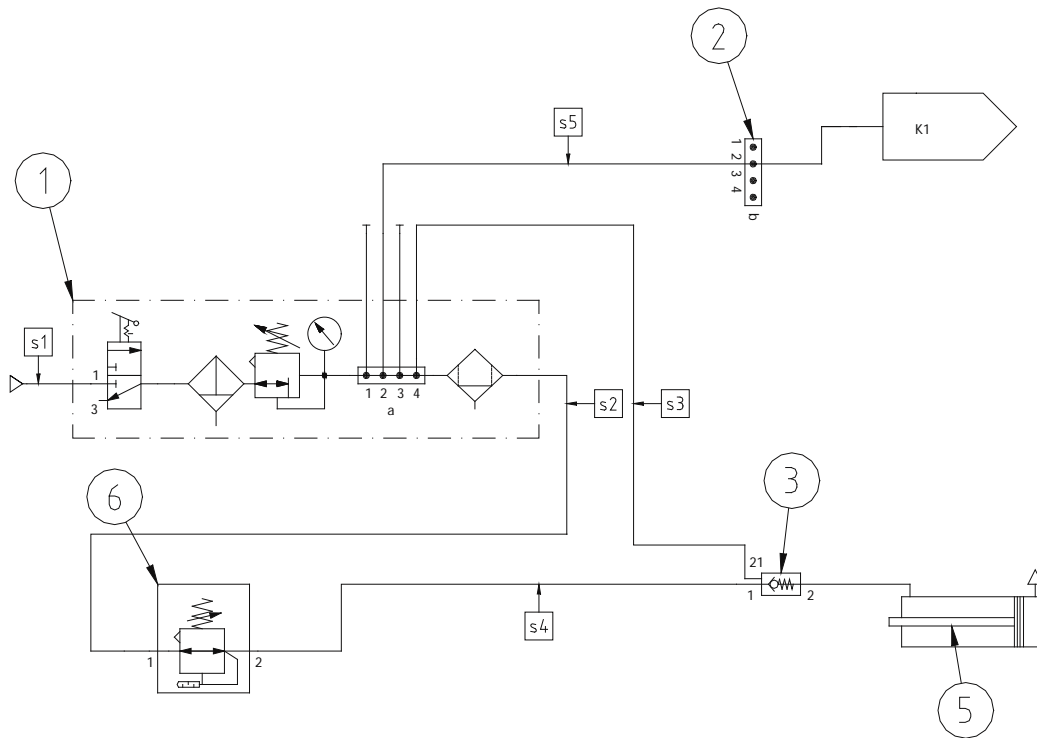
8 • Pneumatic installation

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Pneumatic installation

Circuit diagram - 1-weight
733812



Tube size		
ø4	ø8	ø12
s3	s2	s1
	s5	s4

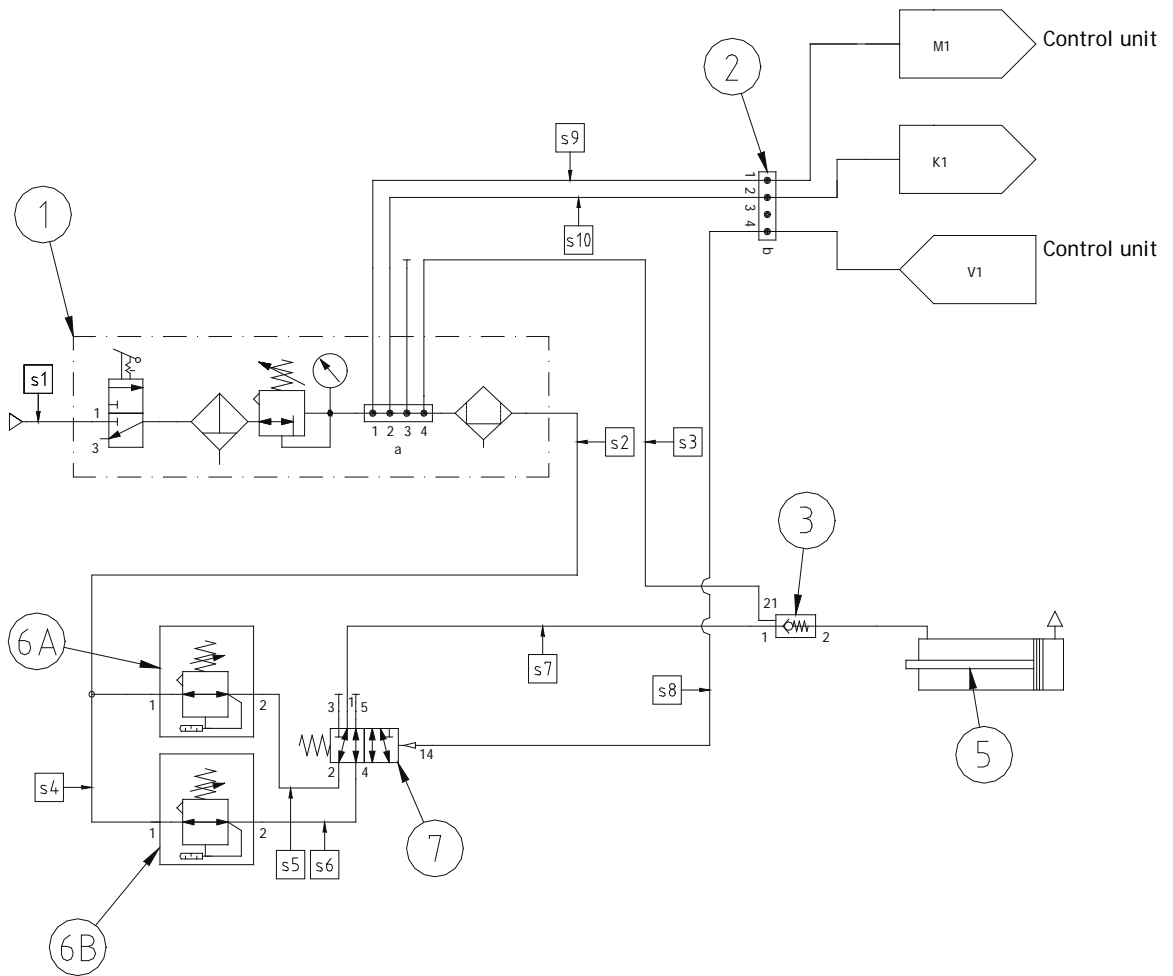
Port size	
1/4"	3/8"
a1-4	b1-4

* Basic model p.7

Position	Qty.	Denomination	Art. no	Position	Qty.	Denomination	Art. no
1	1	Air preparation unit	735350	6	1	Precision regulator	731569
		Distribution block	731635				
		Non-return valve	731571				
5	1	Cylinder	*				

Pneumatic installation

Circuit diagram - 2-weight
733813



Tube size			
ø4	ø8	ø12	
s3	s2	s10	s1
s8	s4		s7
	s5		
	s6		
	s9		

Port size	
1/4"	3/8"
a1-4	b1-4

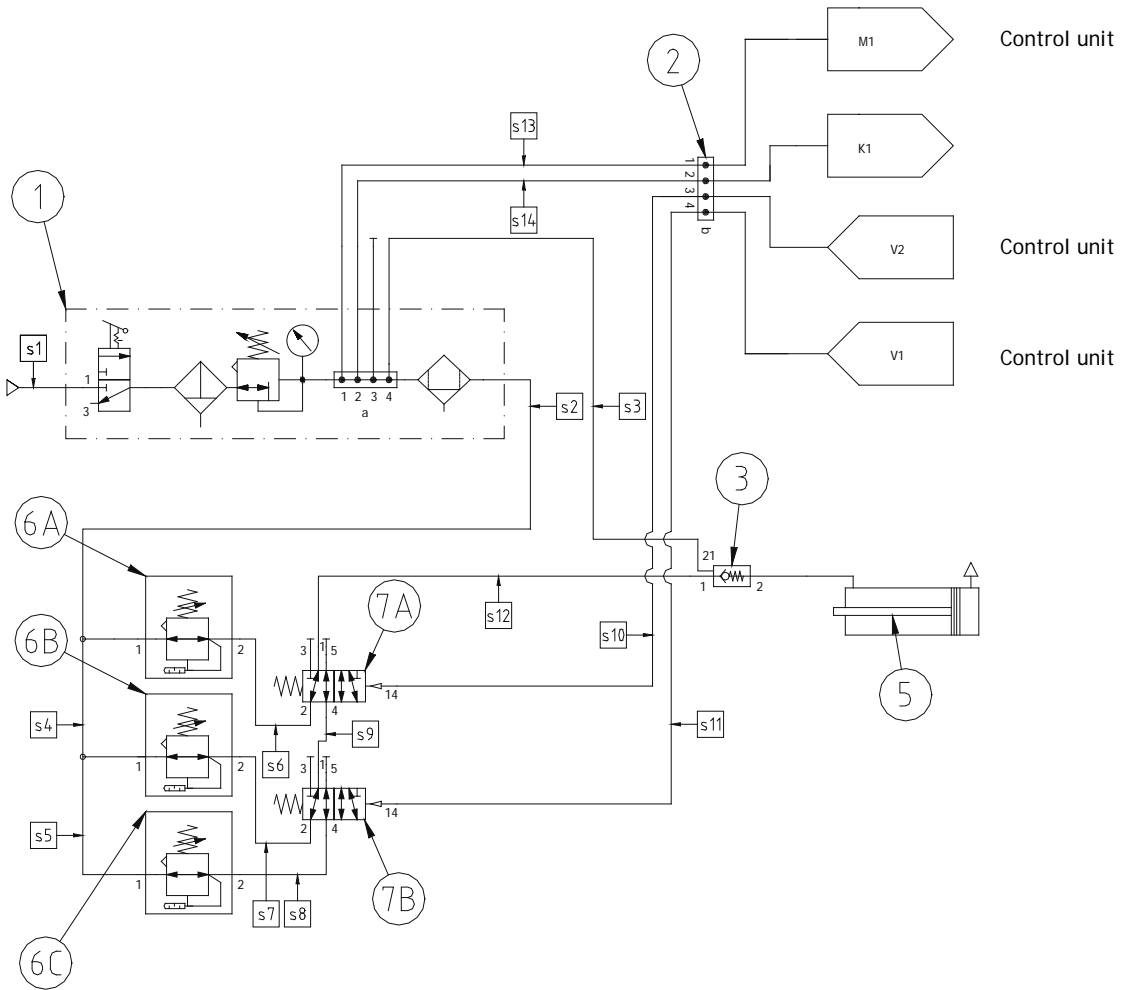
Position	Denomination / Function
6A	Precision regulator / Load 1
6B	Precision regulator / Load 2

* Basic model p.7

Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Air preparation unit	735350	6	2	Precision regulator	731569
		Distribution block	731635	7	1	Valve	731570
		Non-return valve	731571				
5	1	Cylinder	*				

Pneumatic installation

Circuit diagram - 3-weight
733814



Tube size		
ø4	ø8	ø12
s3	s2	s8
s10	s4	s9
s11	s5	s13
	s6	s14
	s7	

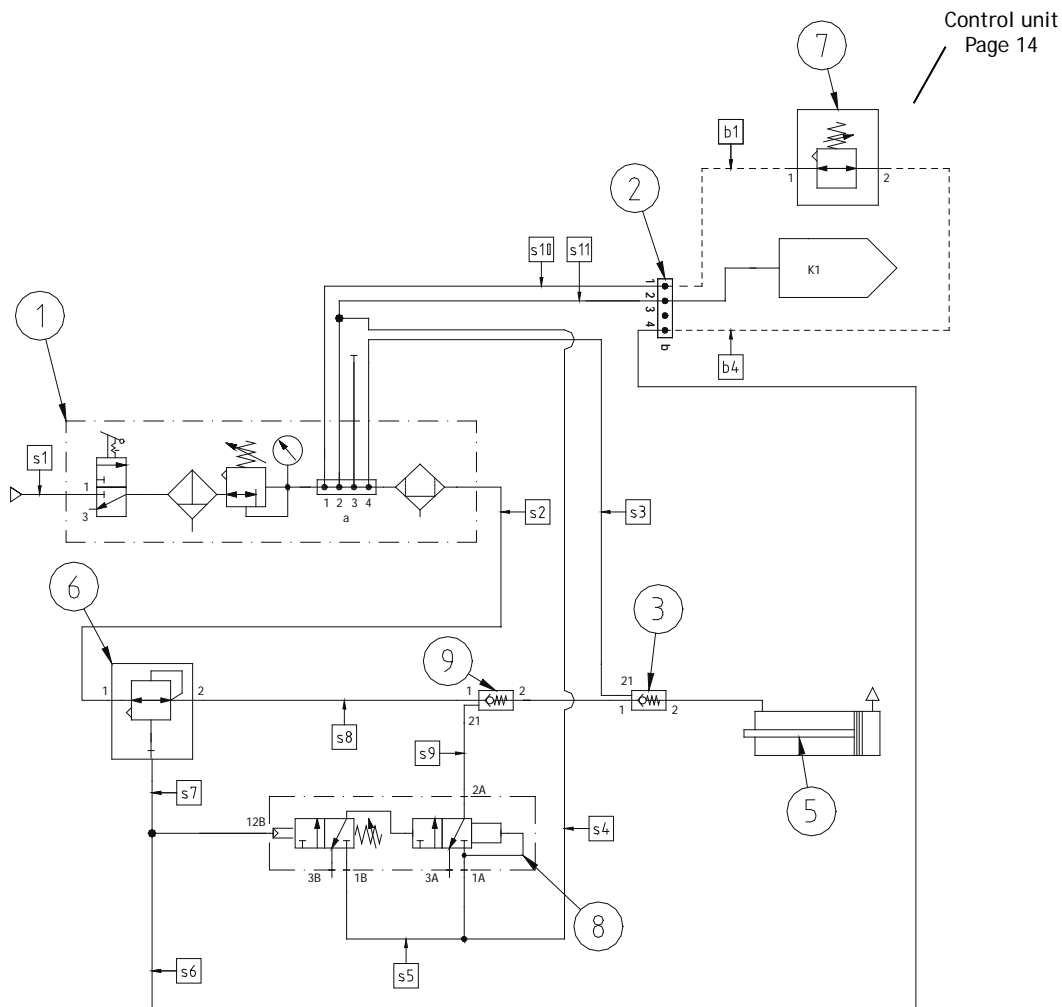
Port size	
1/4"	1/8"
a1-4	b1-4

Position	Denomination / Function
6A	Precision regulator / Load 1
6B	Precision regulator / Load 2
6C	Precision regulator / Load 3

* Basic model p.7							
Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Air preparation unit	735350	6	3	Precision regulator	731569
		Distribution block	731635		2	Valve	731570
		Non-return valve	731571				
5	1	Cylinder	*				

Pneumatic installation

Circuit diagram - Pilot drive
733811



Tube size			
ø4		ø8	ø12
s3	s9	s2	s1
s4	s10	s11	s8
s5	b1		
s6	b4		
s7			

Port size	
1/4"	1/8"
a1-4	b1-4

* Basic model p.7

** Control unit p.14

Position	Qty.	Denomination	Art.no	Position	Qty.	Denomination	Art.no
1	1	Air preparation unit	735350	6	1	Precision regulator	731583
				2	1	Pilot regulator	**
				3	1	Non-return valve	731571
				8	1	Pressure guard	731582
				9	1	Non-return valve	731571
5	1	Cylinder	*				

Pneumatic installation

Overview pneumatic components



9 • Service, maintenance & running

A general review and functional control tests are performed on a regular basis during commissioning.

All service and maintenance shall be recorded. The user should make sure that material for the purpose is easily available.

NOTE: Make sure that damaged components are replaced immediately in order to avoid possible personal and material damage.

Do not connect the equipment until the workplace is cleaned. This is important for the comfort and well-being of personnel and facilitates service and maintenance. Dirt gives a clear indication of the equipment not being properly maintained, which may possibly affect the remaining guarantees on the equipment.

Maintenance safety instructions

The prescribed procedures and service intervals, including those concerning the replacement of parts/accessories, are described in the instruction manual and must be followed. Professionals are the only persons who are allowed to carry out such procedures.

Staff members with appropriate competence and authority are the only persons who are allowed to carry out mechanical and electrical repair and maintenance work. Unauthorised persons should be prohibited to work with machines and devices inside the equipment.

The equipment should be disconnected and secured against unintentional or unauthorised use, including reconnection, during all repair and maintenance work.

It should be confirmed that the equipment is free from voltage before any work on electric equipment is commenced.

Make sure that:

- The main power supply is disconnected
- Moving parts are stationary and locked
- Moving parts cannot move accidentally during maintenance work
- It is not possible to accidentally reconnect the power supply during maintenance and repair work

Use safe and environmentally friendly maintenance products and spare parts!

Directions for work during operation

The user or the "authorised person" must, in each individual case, ensure that the work in question can be carried out without any risk of personal injury because of specific local conditions.

To prevent accidents, only approved and suitable tools and aids may be used during maintenance, adjustment and repair work. Do not touch rotating parts. Maintain an adequate safe distance between yourself and the machinery to prevent clothes, limbs and hair from becoming caught.

Avoid the occurrence of naked flame, extreme heat (e.g. welding) and sparks in the presence of volatile cleaning materials and nearby inflammable or heat-sensitive materials (e.g. wood, plastics, oils, fats and electric equipment). This can result in fire hazard, harmful gases and damaged insulation.

Directions for work with pneumatic equipment

The equipment should be stopped immediately on discovery of faults related to the air supply.

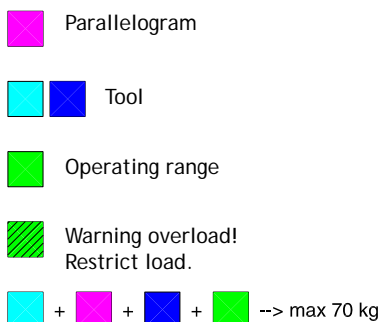
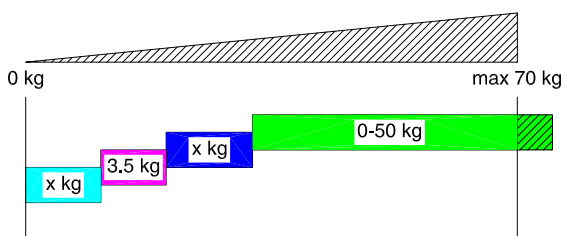
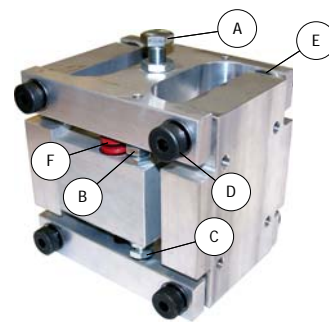
Work on pneumatic equipment or parts must only be carried out by authorised staff.

The parts on which inspection, maintenance, and repair work is to be carried out should be disconnected from the air supply.

Service, maintenance & running

Setting of balance function in parallelogram

Max. allowed load in parallelogram is 70 kg!
Operating range variable load: 50 kg (max. 40 kg recommended).



1 Basic setting on initial assembly

1.1 Preparations for setting

Check and ensure that the air pressure is set at 5,5 Bar.
Check and ensure that the washer E can rotate freely when the tight fitting screws D are tightened.
The springs F must be set parallel.
Ensure that there is no load in the tool.
Check that the lock nuts on the maximum load screws B are loose and can be moved freely.
Screw the four screws B and C in as far as possible so that the parallelogram can move up and down freely.
Place the heaviest load in the tool.

1.2 Balancing

Check that the lock nut on the adjusting screw A is loose and can be moved freely.
Carefully adjust the adjusting screw A: in to obtain more lifting power, out to obtain less lifting power.
Find the setting that requires the same effort from the operator to raise or lower the lifting device.
Check that the lifting device does not tend to rise or fall of its own accord.
Tighten the lock nut and check that the setting has not changed.

1.3 Setting maximum load

Ensure that the very heaviest intended load is located in the tool.
Unscrew the two maximum load screws B until the screw heads are exactly touching the stop.
Tighten both lock nuts and check that the setting has not changed.

1.4 Setting no load

This setting is sensitive and it is important that it be done properly to obtain the correct behaviour from the lifting device.
Ensure that there is no load in the tool.
Unscrew the two lower no load screws C and find the setting that allows the tool to become balanced.
Check that the setting has been done correctly by testing movement upwards and downwards a number of times, release the lift.
Check that the lifting device does not tend to rise or fall of its own accord.
Unscrew the other of the two lower no load screws C to the same distance as the first one.
Tighten both lock nuts and check that the setting has not changed .

2 Readjustment of basically set-up parallelogram

2.1 Preparation for readjustment

Since external factors can affect the behaviour of the lifting device, subsequent readjustment may become necessary.
Check and ensure that the air pressure is set at 5,5 Bar.
Check and ensure that the washer E can rotate freely when the tight fitting screws D are tightened.
The springs F must be set parallel.
If the lifting device itself moves without a load in the tool, see section 2.2
If the lifting device itself moves with a load in the tool, see section 2.3

2.2 Without load

This setting is sensitive and it is important that it be done properly to obtain the correct behaviour from the lifting device.
Release both lock nuts on the no load screws C.
Screw in one of the two lower no load screws C and with the other find the setting that allows the tool to become balanced.
Check that the lifting device does not tend to rise or fall of its own accord.
Tighten the lock nuts and check that the setting has not changed.
Unscrew the other of the two lower no load screws C to the same distance as the first one.
Tighten the lock nut and check that the setting has not changed.
Check that the lifting device does not tend to rise or fall of its own accord.

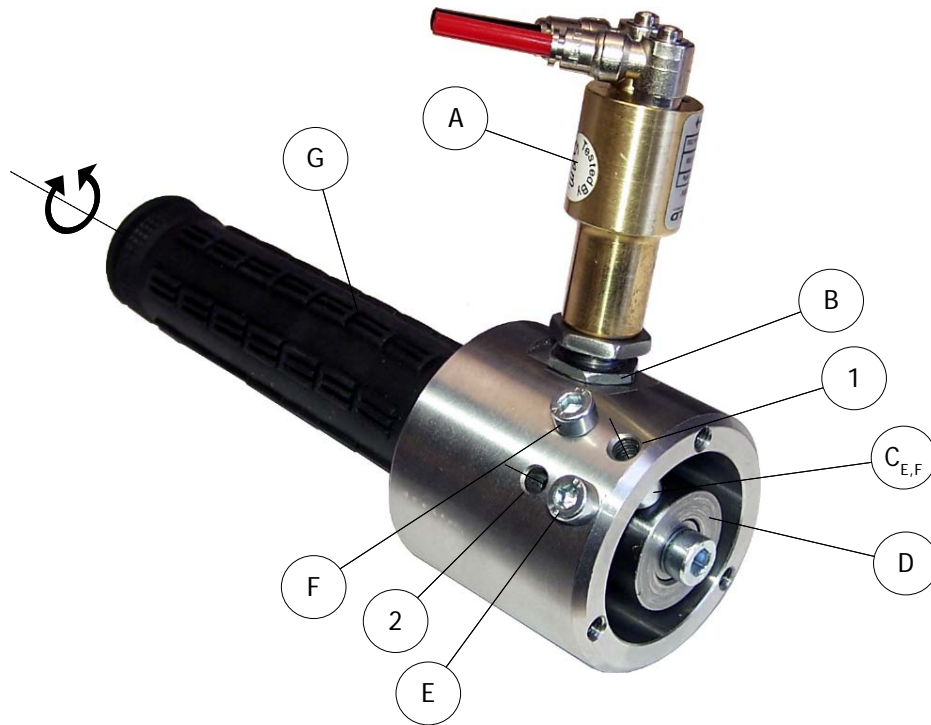
2.3 With load

Ensure that the very heaviest intended load is located in the tool.
Adjust as per section 1.2
Check that the lifting device can lift both light and heavy loads.
If necessary, also adjust in accordance with section 1.3

With screws B and C, make it your objective to try to get the same distance upwards and downwards between lock nut and screw.

Service, maintenance & running

Setting of balance function in throttles



1 Basic setting

1.1 Preparations for calibration

Check and ensure that the air pressure is set to 5.5 bar.
Shutoff the air supply.

1.2 Calibration

Loosen the lock nut B. Screw in the pilot regulator A until its pin touches the bearing surface in its lowest position. Tighten the lock nut B.

Make sure the tool is offloaded.

Locate (via hole 1) and tighten screw C_E in the calibrated position, the screw head should then touch screw E.

Turn handle G 180°. Locate (via hole 2) and tighten screw C_F , the screw head should then touch screw F.

Turn on the air supply.

Test run.

2 Setting - tool compensation

2.1 Preparations for setting

Check and ensure that the air pressure is set to 5.5 bar.

2.2 Setting the tool compensation

Make sure the tool is offloaded.

Make sure the handle is in the "0-position". Loosen the lock nut B. Screw in the pilot regulator A until the tool is balanced. Tighten the lock nut B.

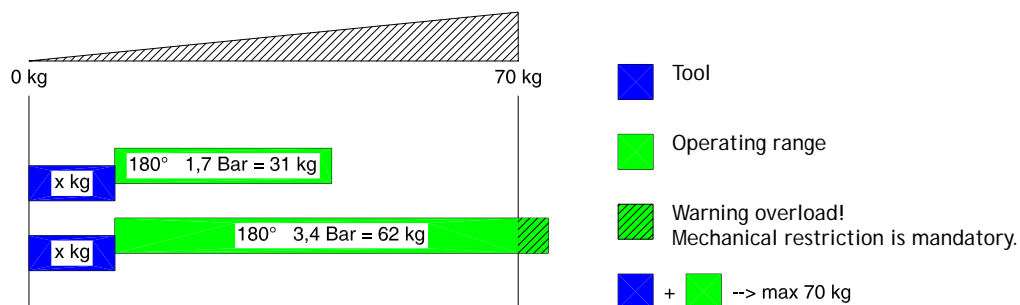
Locate (via hole 1) and tighten screw C_E in the "0-position", the screw head should then touch screw E.

Load the tool with the maximum design load. NOTE! The tool and load together must not exceed the capacity of the lifting device!

Turn the handle G until the tool with load is balanced. Locate (via hole 2) and tighten screw C_F , the screw head should then touch screw F.

Test run.

The settings above describe right-hand operation. On left-hand designs switch the designations E and F and 1 and 2. Check on the lifting device specification which throttle is used (1.7/3.4).



Service, maintenance & running

Recommended spare parts / wear parts

* Article rated as wear part

Basic model

733284

Position	Qty.	Denomination	Art.no
4	1	Cylinder	731686

Tool adapters

*Bearing unit
733377*

Position	Qty.	Denomination	Art.no
3	1	Conical roller bearing	731434
5	1	Conical roller bearing	731436

Control units

*Parallelogram
731386*

Position	Qty.	Denomination	Art.no
-	1	Pilot regulator	731383

*Throttles
731853-54*

Position	Qty.	Denomination	Art.no
-	1	Pilot regulator	731383

Pneumatic installation

*1-weight
733812*

Position	Qty.	Denomination	Art.no
3	1	Non-return valve	731571
6	1	Precision regulator	731569
(1)	1	Filter*	730671*
(1)	1	Micro filter*	735351*

*2-weight
733813*

Position	Qty.	Denomination	Art.no
3	1	Non-return valve	731571
6	1	Precision regulator	731569
7	1	Valve	731570
(1)	1	Filter*	730671*
(1)	1	Micro filter*	735351*

*3-weight
733814*

Position	Qty.	Denomination	Art.no
3	1	Non-return valve	731571
6	1	Precision regulator	731569
7	1	Valve	731570
(1)	1	Filter*	730671*
(1)	1	Micro filter*	735351*

*Pilot drive
733811*

Position	Qty.	Denomination	Art.no
3	1	Non-return valve	731571
6	1	Precision regulator	731583
8	1	Pressure guard	731582
(1)	1	Filter*	730671*
(1)	1	Micro filter*	735351*

Service record - MechSpace 70

ID:		Client/ place:		Interval in months when 1 shift Interval in months when > 1 shifts		The service record shall be kept by the client/user. * If applicable The service is performed considering the maintenance safety instruction.		1/1		
Service by:		Date:								
Visual inspection, examine whether the product exhibits damages										
Auditory inspection, examine whether the product exhibits discordant sound										
Physical inspection, examine whether the product exhibits damages										
Mechanical inspection, examine whether the product exhibits decomposition, instruments is needed										
No	Product	Inspection				Inspector Dept. / Sign.	Comment			
1	<u>Basic model</u>					General overview.		4	3	
1.1	Fasteners							4	3	
1.2	Bearings							4	3	
2	<u>Cross unit</u>					General overview.		4	3	
2.1	Fasteners							4	3	
2.2	Swivel ring							4	3	
2.3	Rotation limiter*							4	3	
3	<u>Pneumatic</u>					General overview.		4	3	
3.1	Fasteners							4	3	
3.2	Tubing					Check tubes and fittings		4	3	
3.3	Filter regulator with manual drainage			Open the blowdown valve from time to time to blow out collected condensate. Do not allow the liquid level to exceed: "Max drain level".		1	1			
3.4	Micro regulator with manual drainage			Open the blowdown valve from time to time to blow out collected condensate. Do not allow the liquid level to exceed: "Max drain level". Filter element is replaced when the pressure drop across the filter reaches 0,1 MPa, and at least once a year.		1	1			
4	<u>Control unit</u>					General overview.		Daily	Daily	
4.1	-Button -Turning button -Sensor -Parallelogram -Throttle					Test: Drive the hoist in all applicable situations.		Daily	Daily	
5	<u>Tool adapter</u>					General overview.		4	3	
5.1	Fasteners							4	3	

10 • Troubleshooting

Type of problem	Probable cause	Action
No hoisting motion up/down	Air supply is turned off	Check whether the air supply for some reason has been turned off, make sure no risk of injury appears when restoration of the air supply, some procedure may be performed by authorized maintenance staff. Restore the air supply At least 5,5 bar (no more than 7 bar)
	Clogged filter	Clean or replace filter
	The hoist is exposed to mechanical obstacle	Check whether some part of the hoist or tool including any object, are stuck in other equipment. Remove mechanical obstacle
	Defective control unit	Check whether the hoist is supplied with air, inspect the control unit, some procedure may be performed by authorized maintenance staff. Repair control unit
	Defective equipment that serve as condition	Check whether external equipment serving as conditions are defect. Repair equipment
Incorrect operating range	Equipment serving as horizontal working range limit out of position	Check whether the rotation limits is out of position. Reset to correct position
	Equipment serving as vertical working range limit out of position	Check whether the stroke limiter is out of position. Reset to correct position
Irregular or jerky hoisting motion up/down	The hoist is exposed to mechanical obstacle	Check whether some part of the hoist or tool including any object, are stuck in other equipment. Remove mechanical obstacle
	Defective bearing	Check whether bearings are damaged. Replace bearings
	Dirty filter	Clean or replace filter
Load ascend/descend	Regulator(s) are inaccurate	Adjust setting
	Air leakage	Seal leakage

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