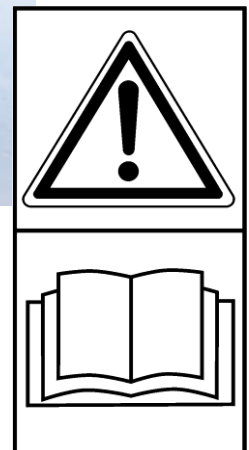




Instructions for Use and Maintenance

Hydraulic driven
Snow blower
1800H, 2002H, 2202H, 2402H



Note! Read the instructions before use.

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SAFETY SYMBOLS

Note! This warning symbol is used throughout this instruction manual to call attention to safety precautions that you, your employees or any other people that may come near the implement must read and understand. Failure to follow these instructions may result in serious injury or even death.

This symbol means:



WARNING!
CAUTION!
YOUR SAFETY IS
ENDANGERED!

A word of advice

Pay special attention to the words **WARNING!** **CAUTION!** and **NOTE!** in the safety instructions. The words have been chosen from of the following:



WARNING! This safety sign is used to identify potential hazards that can lead to serious injury or even death. These hazards include situations that may occur when the safety equipment and/or the safety shields are removed. Signal words can also be used to alert about dangerous use.



CAUTION! Failure to observe this warning sign could result in light personal injuries. The sign is also used to indicate that the disregarding of these instructions may cause damage to the implement.

Dear Customer,

You have made a good choice. We congratulate you to your selection of an OPTIMAL product that offers quality and performance with reliable service.

By reading the manual and following its recommendations you will ensure the long and effective use of the equipment.

We have produced this manual for you to get a good understanding of the functioning of the machine and what safety and maintenance instructions to follow when working with it.

If any question should arise when using the machine or when reading this manual, you are welcome to contact us for further information.

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Email: info@trejon.se
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Honoured retailer,

in order for the guarantee to be valid and to fulfill all legal requirements, we ask you to fill out the guarantee form together with the customer and register at trejon.se

The guarantee is valid from the day the equipment is handed over to the customer.

Delivery checklist:



Check for damages caused in transporting. Inform the transporting company.	
Check that all packing material has been taken away. Dispose packing material in an environmentally friendly way	
Check that the machine is lubricated, see section "Service and maintenance".	
Check that all screws are properly tightened, see section "Service and maintenance".	
Check that all guards and safety shields are properly fastened.	
Check the oil level in the gearbox. See section "Service and maintenance".	
Check the oil level in the gearbox. Approximatley 50mm from bottom of gearbox.	
Check chain tension, see section "Service and maintenance"	
Make a funtion test.	
Having gone through and explained to the customer, with the help of the manual, the startup, use and maintenance of the equipment and it's accessories.	
Fill out the guarantee form with the customer and register at trejon.se	
Instruction manual given to the customer.	

Enter the serialnumber of the machine and hydraulic motor to the right.	S/N:
	S/N:

1 Introduction

1.1 Foreword

Thank you for choosing this OPTIMAL machine. We have concentrated our efforts in order to develop a sturdy machine that will operate trouble-free for many years. The working life of the machine, however, depends not only on us but also on you. We have compiled this instruction manual in order to facilitate the use of the implement and describe proper maintenance procedures. Read these instructions carefully. Contact the retailer from whom you purchased the machine whenever you want to order repair parts or need any other assistance. When you are ordering repair parts, make sure that you know the right model, type and serial number. See the identification plate on the chassis.

1.2 Description

The equipment is designed to clear snow from level ground such as roads and parking lots. The snow blower is to be mounted on the tractor's loader or a similar attachment frame. The machine is designed to be driven by tractors existing hydraulic system, assumed that it can deliver the right flow. Oil flow and working pressure at tractors hydraulic system is the factors that decide which effect the hydraulic motor will deliver. TREJON deliver snow blower with a hydraulic motor that will suit the figures about tractors hydraulic system given at order of new machine.

The snow blower works best if it is mounted on a tractor that supplies recommended oil flow regardless speed of vehicle. Therefore tractors with hydrostatic transmission, is especially suited for work with hydraulic driven snow blowers.

For operation of the hydraulic motor of the snow blower, the tractor need following hydraulic connections:

- A hydraulic outlet that can deliver recommended flow to the snow blower.
- A hydraulic outlet with open (pressure less) oil return directly to the tractor's oil tank.
- A hydraulic outlet with open (pressure less) case drain oil return (max. 3,6 Bars back pressure) directly to the tractor's oil tank.

Remaining functions needs:

- A double acting hydraulic outlet is needed for turning of ejector tube.
- If the machine is equipped with hydraulic flap regulator, one more double acting outlet is needed.

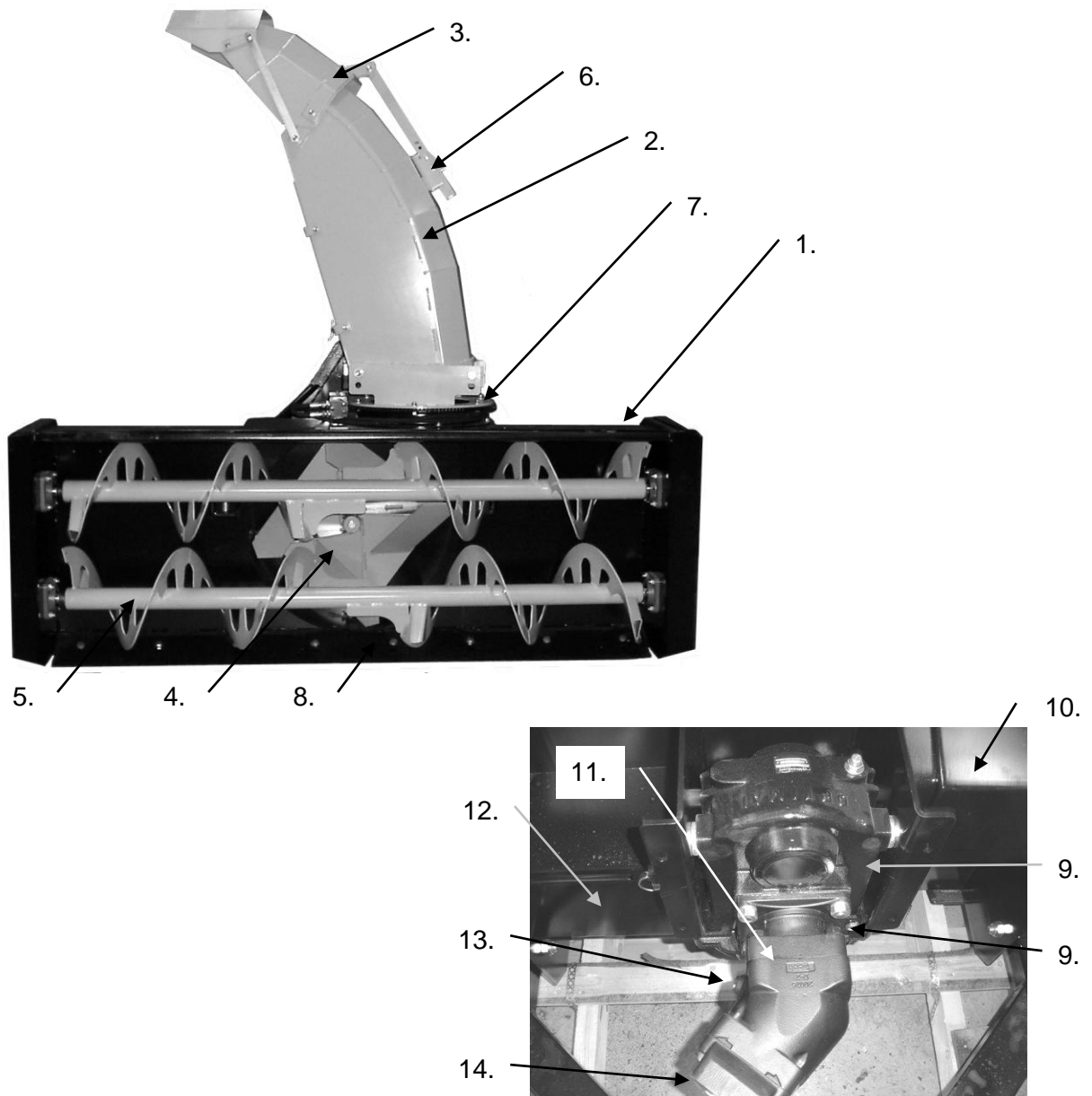
1.3 Working stages

The equipment works in three stages:

1. Break-up and feeding in with self-cleaning feed screws with cutting action.
2. Transport to the ejecting rotor.
3. The ejecting rotor will powerfully throw out the snow through the ejector tube. The ejector tube is adjustable as to the direction and the distance of the thrown snow.

1.4 Detailed description

1	Frame
2	Ejector tube (long or short tube)
3	Twin flap
4	Discharge rotor
5	Auger
6	Flap control
7	Turntable gear
8	Reversible wearing edge
9	Gearbox
10	Tool box with holder for additional shear bolts
11	Hydraulic motor, axial pistol type
12	Open able shields, break coupling auger
13	Connection for leak-oil lead, 2 pcs
14	Connection flange for pressure and return, flange in accordance with SAE 6000



1.5 Technical data

Specifikationer / Modell	1800H	2002H	2202H	2402H
Working width, mm	1820	1950	2150	2350
Frame height, mm	820	820	820	820
Cutting screws, quantity	1	2	2	2
Cutting screws, Ø mm	340	340	340	340
Discharge rotor, Ø mm	680	680	680	680
Gearbox drive, type	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Hydraulic motor, type	Axial pistol	Axial pistol	Axial pistol	Axial pistol
Working pressure, max. Bars	According to engine specification			
Rotation of discharger, type	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Chute flap regulation, type	Mechanical	Mechanical	Mechanical	Mechanical
Weight, base unit, kg	580	690	720	750

Due to continuous product development, any data is subject to change without prior notice.

2 Safety instructions



2.1 Safety precautions

Read operator's manual. All drivers of the machine must read and understand all the contents of this operator's manual, so there is no doubt about management before using the equipment for the first time. If any hesitation, ask your Trejon dealer about advise. It is forbidden to use the equipment if user don't know the risk factors at handling, and don't know how to act in an emergency situation.

Read, observe and understand meaning of all safety-, use-, warning- and position- symbols at machine and in user manual.

Safety is the primary concern in the design and manufacture of our products. Unfortunately our efforts to provide safe equipment can be wiped out by a single careless act of an operator. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment. Allow only properly trained personnel to operate the equipment.

The machine is intended only for outdoor use.

Management. Learn how to operate the machine and how to use the controls properly before operating the machine.

Connect the machine. Attach the machine correctly; don't stand behind the tractor during installation. Ensure machine is properly mounted, adjusted and in good operating condition. Failure to ensure a secure coupling of the implement to the tractor can cause injury and damage to the implement or tractor.

Secure the working area. Unauthorized persons, particularly children, are not allowed near the machine while it is running or is being repaired. Before backing up, look behind carefully.

Pay attention to the injury and damage that can be caused by material thrown by machine during operating, therefore clear area of stones, branches or other debris that might be thrown, causing injury or damage. Take care never to aim the snow outlet towards people, animals or buildings.

The rotating parts of this machine have been designed and tested for rugged use. However, they could fail upon impact with heavy, solid objects such as steel guard rails and concrete abutments. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles.

Machines protective equipment. Do not operate the machine if not all safety guards and shields for moving parts are in place and in good condition. Ensure that all safety and operating signs are in good condition. Additional safety and operating decals are available at no extra charge. Please specify model and serial number when ordering.

Moving parts. Keep hands, feet, hair and clothing away from moving parts of the machine. Let the machine work by it self, don't try to help the machine with hands and fingers.

Lifting and lowering machine. Be careful when lifting or lowering the machine.

Stability. The machine should not be mounted on a tractor with insufficient front shaft /back shaft weight when the tractor becomes unstable and difficult to operate. When using a unit, a minimum 20% of tractor and equipment weight must be on tractor front wheels. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a front end loader, front wheel weights, and ballast in tires or front tractor weights, read the tractor's instructions manual for more information.

In extremely uneven terrain rear wheel weights, front tractor weights, and/or tire ballast should be used to improve stability.

Operating machine. Be careful and reduce the speed when working on uneven surfaces. Watch for holes, roots, rocks or other hidden objects. Do not drive near the edge of a gully, ditch or stream bank. When mowing over uneven terrain, observe the type of terrain and develop a safe mowing pattern.

When driving in slopes:

Operate the machine up and down steep slopes, not across slopes, to prevent the tractor from tipping. Avoid sudden stops and starts, slow down before changing directions on a slope. Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up the tractor and machine. If tractor overturns, hold tight to steering wheel.

Operating in darkness. When working in the dark hours, make sure there is sufficient lighting in the working area.

Driver. Do not operate the equipment when you are tired, sick or when using medication. Only properly trained people with driver's license is allowed to operate this machine. Do not allow riders on the machine or tractor at any time. There is no safe place for riders.

Personal protective equipment. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, adjustment, maintaining and/or repairing the implement. Avoid loose fitting clothing which can become entangled. Wear sturdy, tough-soled work shoes and protective equipment for eyes, hands, ears and head.

Safety cabin. Operate the machine only with a tractor equipped with an approved Roll-Over-Protective-System (ROPS). Keep doors at tractors cabin closed during operating, serious injury or even death could result from falling off the tractor.

Daily maintenance. Inspect the entire machine periodically. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.

No wrappings or foreign objects are around the machine.

Frequently check mower blades. They should be sharp, free of nicks and cracks and securely fastened.

Safety during maintenance and repairing. Apply hand brake and place the machine on a hard level surface when maintaining or adjusting it. Always stop the tractor, set brake, shut off the tractor engine, remove the ignition key, and allow machines moving parts to come to a complete stop before dismounting tractor. Ensure that all moving parts have stopped completely before making adjustments, servicing or cleaning the machine. If the machine has been raised for cleaning, maintenance, inspection or repairs, it is imperative that you prevent it from sinking or falling down by placing supports under the machine. Never work under equipment unless it is blocked securely. Keep service area clean and dry. After servicing, be sure all tools, parts and service equipment are removed. Clean the machine thoroughly before repairs or storage. Be sure to thoroughly wash the machine without using excessive pressure especially on the moving parts, bearings and electric components. After cleaning, carefully dry the machine and lubricate it and perform a short test drive.

Vibrations. Do not use the machine if it is vibrating or shaking. Stop and investigate the cause. Change any damaged parts.

Emergency stop. Know how to stop the tractor and machine quickly in case of an emergency. After striking an obstacle, shut the tractor down and thoroughly inspect for damage before restarting.

Hydraulic hoses. The machine's hydraulic hoses contain oil under high pressure. Never touch the hoses or other hydraulic components while there is still pressure in the system. In case of leakage, oil under high pressure can penetrate the skin and cause serious injuries. If an accident happens, contact doctor.

Check the condition of the hydraulic hoses every day. Worn or leaking hoses must be replaced immediately with new hoses that meet the manufacturer's technical requirements.

The hydraulic motor and the hoses become hot during work; there is a risk for burn injury.

Never loosen the hoses while the oil is still hot. Wait until it cools down. When changing tractor, check length of hydraulic hoses, if too long or short, they can easily be damaged.

The hydraulic motor and the hoses become hot during work; there is a risk for burn injury.

Never loosen the hoses while the oil is still hot. Wait until it cools down.

Welding. Protect bearings, electronic and hydraulic components before any welding is done. Place earth connection close to the place for welding.

Fire danger. If any component gets over heated, stop machine and check reason. There is an increased risk of fire when working in dry areas.

Spare parts. Use only original repair parts

Where replacement parts are necessary for periodic maintenance and servicing, genuine replacement parts must be used to restore your equipment to original specifications. The company will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

Unauthorized modifications to the machine may impair the function and/or safety of the machine and reduce its life. If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

2.2 Explanation of the symbols

The warning symbol must always be recognizable. If the warning symbols are missing from your equipment or if they are damaged, replace them at once.

The signs to the right have the following meaning:



Warning!

Decal 1: Read the instruction manual carefully and make yourself familiar with the machine before using it.



Warning!

Decal 2: Keep hands and feet away from any moving parts. Keep away from the PTO while the engine is running. Failure to follow these instructions can result in serious injury or even death.



Warning!

Decal 3: Objects such as stones and lumps of ice can be discharged while the machine is running. Keep away from the machine when it is running. The operator should have a good view of the area where snow is discharged. Avoid operating the machine in the presence of people and animals or in built-up areas.





Warning!
Decal 4: Keep body parts away from the feeding wings when the machine is running. In case of stoppage, apply hand brake, turn off the engine, place the fling on the ground and disconnect the power unit.





Warning!
Decal 5: Crush hazard. Never stand between machine and tractor during mounting. Always apply hand brake before leaving the tractor's cab in order to mount / dismount the implement.



Warning !
Decal 6: Crushing hazard! When the ejector tube is lowered the engine of the tractor and the PTO must be switched off. Never use your arms or your legs to clear the ejector tube.



Decal 7: This is the plate with the CE-sign. On it you will find the machine's serial number, its weight and model.

	TREJON AB Företagsvägen 9 SE- 911 35 VÄNNÄSBY, SWEDEN Tel. +46935-399 00 Fax +46935-399 19 www.trejon.se		
	Serial nr. <input type="text"/>	Model <input type="text"/>	
Ref. nr. <input type="text"/>	Weight kg <input type="text"/>		

3 Operating the machine

3.1 Assembly



Caution!

No persons is allowed to be in danger area during lifting

Be carefully when cutting bands and wire because they can be very tensed. They can also be very sharp.

Following steps will be performed during the assembling:

Take away all packing and wrapping material, and discard it in an environmentally friendly way.

Assemble the ejector pipe and tighten the bolts.

Connection frame is bolted to the equipment.

Check that all protective devices are undamaged and correctly attached to the equipment.

Before operating the machine, tasks in section 3.3 – “Before starting up” must be cleared.

3.2 Attaching machine to the tractor



Warning!

Crushing hazard! When connecting, never stand between the tractor and the equipment as long as the tractor is moving. Always immobilize the tractor when leaving the cabin for any coupling/decoupling work.

The machine should not be mounted on a tractor with insufficient front shaft weight, when the tractor becomes unstable and difficult to operate. If necessary use attained ballast weights, read the tractor’s instructions manual for more information.

Attach the machine at a hard level surface.

Attach machine to tractors connection frame.

Turn of tractor’s engine and apply the hand brake.

The machine is delivered without hoses to the hydraulic motor. Fit the hydraulic hoses to the tractor with regard to lengths and suitable quick couplings. Connect the leak-oil line and return directly to the tank with as little return pressure as possible (max. 3,6 Bar backpressure).

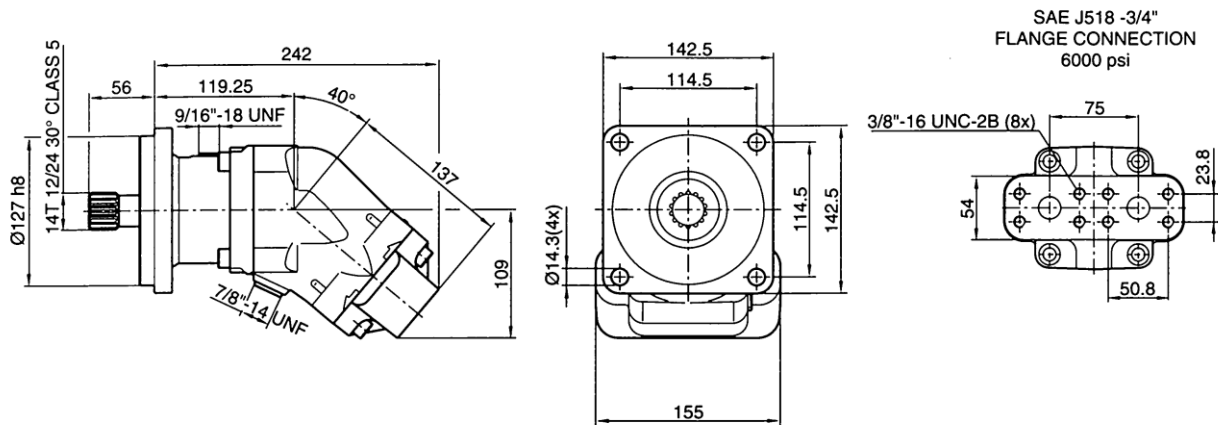
Connections on the hydraulic motor

The snow blower's motor is available in different sizes in order to fit the tractor's hydraulic power (flow and working pressure). The type of the motor can be found on the type plate of the motor.

Hydraulic motor SCM 47-64 SAE C

Pressure and return: Flange in accordance with SAE J518-3/4" 6000 psi. Mounts with 8 pcs screws: 3/8 UNC 2B x 51mm.

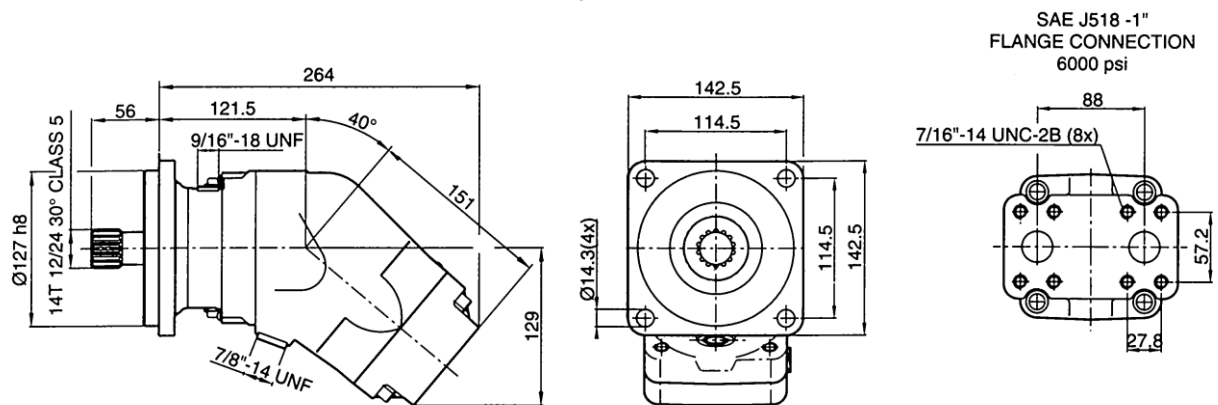
Leak-oil (case drain): The motor has two plugged outlets. Lower: Thread 7/8"-14 UNF Upper: Thread 9/16-18UNF (max. 3,6-bars back pressure).



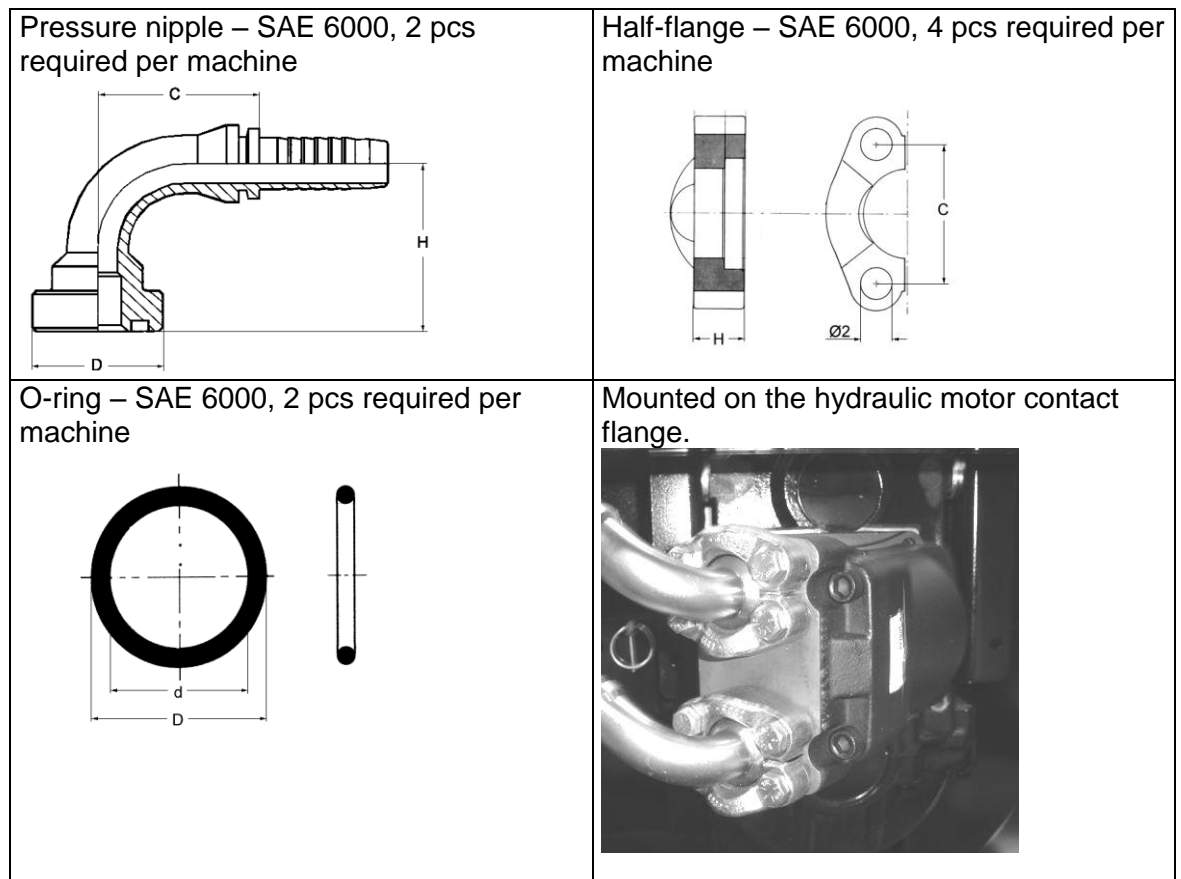
Hydraulic motor SCM 84-108 SAE C

Pressure and return: Flange in accordance with SAE J518-1" 6000 psi. Mounts with 8 pcs screws: 7/16-14 UNC 2B x 51mm.

Leak-oil (case drain): The motor has two plugged outlets. Lower: Thread 7/8"-14 UNF Upper: Thread 9/16-18UNF (max. 3,6-bars back pressure).



Example of components that convey pressure through the hydraulic hose to the contact flange SAE 6000.



Port. B Pressure:

Oil to the hydraulic motor port B is supplied through available outlet on the tractor that delivers the recommended oil flow and pressure. The oil flow from the outlet must be controllable from the tractor cab. Adjust the length of the hose and mount suitable quick couplings on the tractor as well as couplings for SAE 6000 on the hydraulic motor.

Port A Return:

Oil from the hydraulic motor port B is led back to the tractor's tank via an open outlet (low back-pressure). Adjust the length of the hose and mount suitable quick couplings on the tractor and couplings for SAE 6000 on the hydraulic motor.

Leak-oil (case drain) line:

Oil is brought to the hydraulic motor housing during operation in order to lubricate and cool the hydraulic motor bearings. This oil must be led back to the tractor's tank through a separate line. If the leak-oil lead is not connected to a pressure less (max. 3,6 Bars back-pressure) return line the shaft seal is going to breakdown on the hydraulic motor.

The motor has two plugged outlets for connection for leak-oil line. Side view of the motor with the contact flange directed downwards: Lower, thread 7/8"-14 UNF upper: Thread 9/16-18UNF.

Fill the motor with hydraulic oil up to 50%. Mount appropriate adapter to the plugged outlets at the top of the motor (consider mounting direction),

After that connect the leak-oil line which go directly to the tractor's tank. Adjust the length of the hose and install suitable quick couplings on the tractor.

Attach hydraulic hoses for ejecting pipe control to double acting outlets at tractor. Clean the connections carefully before attaching. Before using the equipment, test the operation of the ejector pipe control.

Check that machine can work freely from tractor in all predictable situations.

3.3 Before starting up



Warning!

The hydraulic hoses on the machine contain oil under high pressure. Never touch the hoses or other hydraulic components while there is still pressure in the system. Relieve the pressure on the system first. In case of leakage oil under high pressure can penetrate the skin and cause serious injuries.

Ensure that nobody is close to the equipment when performing the trial run.

Before starting up, following items must be checked.

Check the screws and bolts at the machine and tighten if necessary. See table with recommended torque settings in section "Service and maintenance".

Check that all protective devices are undamaged and correctly attached to the equipment.

Lubricate the machine (see section "Service and maintenance").

Check the oil level in the gearbox (see section "Service and maintenance"). The gearbox is filled with oil SAE 80W/90 API GL4/GL5, Industrial gear oil ISO VG 220.

Adjust height of scraper steel with support pads, and machine tilt with top link (see section "Adjustments")

Check that no objects have wrapped themselves around moving parts.

Test the machine. **Activate the oil flow to the snow blower while the tractor's engine is at idle speed, and then move into high gear until you reach recommended oil flow.** Ensure that the snow blower rotates in the right direction and that there are no oil leakages. Perform the above procedure in reverse order when you want to turn off the snow blower; 1. Change to idle speed, 2. Stop the oil flow to the machine.

3.4 Adjustments



Warning!

No work is allowed unless the equipment is safely secured (don't completely rely on tractors 3-point connection).

Be careful when undoing the pierced rod of flap control, crushing hazard!

At any time when performing repairs and maintenance, the engine must be switched off and the machine completely stopped mowing. Withdraw the ignition key from the switch.

Support pads

The height of the equipment is adjusted with two supporting pads located at the back. The angle of the equipment is adjusted by the tilt function of the tractor's loader. This determines how well the equipment follows the variations in the surface. If the equipment is angled forward, it is easier for it to cut through packed snow and ice. A suitable basic adjustment when the machine rests on the support pads, is that the wearing edge of the scraper steel is 10mm above ground. Aim at keeping the machine levelled during work.

The supporting pads are to be adjusted as the wearing edge is being worn down. The supporting pads are adjusted by undoing the mounting screws, and mount them in other holes.

Screws that must be taken away, when the height is adjusted at the support pads.



Ejector tube

The equipment comes fitted with a hydraulically turntable ejector tube as standard. At the end of the tube is a flap that regulates the distance the snow is thrown. Turn up the handle that locks the pierced rod, move the rod to the desired position and lock it again.

A hydraulically (or electrically) operated flap is available as an option. This is suitable for those that need to change the placing of the ejected snow while operating the equipment.

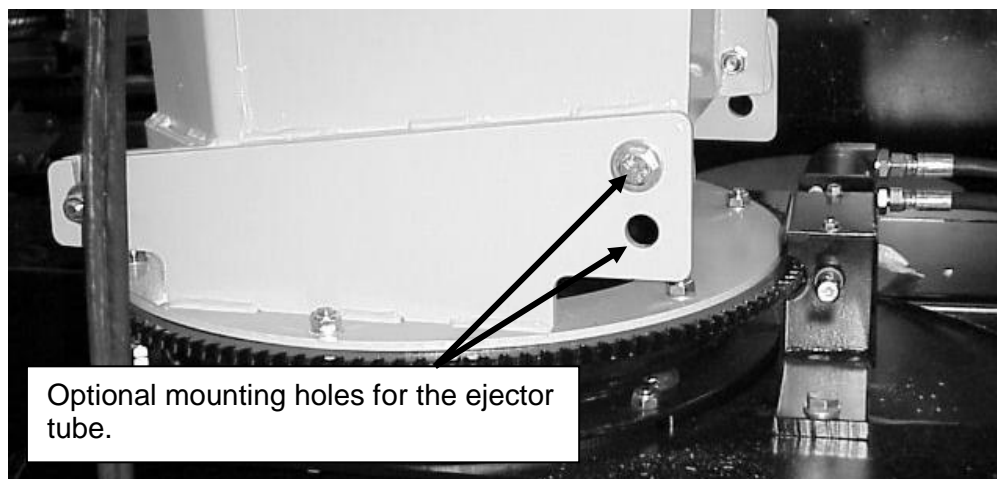


Mechanical flap control (Standard)



Hydraulic flap control (Option)

The ejector tube has two mounting holes. These will enable you to regulate the distance the ejected snow is thrown.



The height of the equipment is adjusted with two supporting pads located at the back. The angle of the equipment is adjusted with the top-link. This determines how well the equipment follows the variations in the surface. If the equipment is angled forward, it is easier for it to cut through packed snow and ice.

The supporting pads are to be adjusted as the wearing edge is being worn down. The supporting pads are adjusted by undoing the mounting screws and move the pads. When the pads are worn out they have to be replaced by new ones.

3.5 Operating the machine



Warning!

Operator must have a good view over the working area and the area where the ejected snow lands. Heavy items in the snow, such as stones etc., can be propelled much further than the snow itself.

Before leaving tractor's cabin ensure that all moving parts have come to a complete stop.



Caution!

The shear bolt is **No guarantee** for machine not being damaged at impact with heavy, solid objects.

To avoid damages on machine, lift snow blower before going backwards with the equipment.

A doubled driving speed, make the stress at the equipment four times higher. Damages on snow blower caused by impact with heavy, solid objects isn't covered by the warranty.

The temperature of the hydraulic oil must not exceed 75 degrees during operation of the implement.

Place the snow blower on the surface which is to be cleared. Start the snow blower by slowly **releasing the oil flow while the tractor's engine is at idle speed**. Change to a higher gear. If you want to turn off the snow blower, perform the above procedure in reverse order. 1. Change to idle speed, 2. Stop the oil flow to the machine.

We advise you against using this equipment as a plough. Always let the equipment work its way through the snow with the cutter turning. When clearing great masses of snow you should work yourself through in two runs.

When operating in wet and heavy snow, more power is needed, and the equipment needs to be used with high revs before working on the snow. If you should come to a halt, stop the tractor, lift up the equipment, back up a bit, let the equipment down, and try again. Should there be an obstruction in the ejector tube, the tractor and the oil flow must be stopped before the equipment is cleaned. Inform anybody in the vicinity that work is going on with the equipment. Drop the ejector tube and clear the obstruction.

When using the equipment for the first time in the cold season, you should set it to lean back a little. This will ensure that the wearing edge does not pick up a lot of stones and debris that can be ejected dangerously. After a while as the road has become hard, you can set the equipment to a more aggressive angle.

4 Service and maintenance



Warning!

Always turn off the engine and wait until the machine has completely stopped before performing any kind of service or maintenance on the machine. Remove the ignition key from the ignition switch.

Relieve the pressure before operating the implement. Let the machine cool down if warm.

Never use the tractor's lifting scoop alone. Secure the implement with jack stands or similar devices in order to avoid falling. Always use protective glasses, gloves etc. when performing maintenance.

Do not use your fingers when examining little openings. This is to avoid accidents.

Keep work area clear of other persons in order to avoid injuries.

4.1 General information

Always use high quality lubricants. If work is to be performed on the implement while it is in high position, don't forget to secure it with stand jacks. Use only tools fitted to their purpose. Keep the machine clean in order to prevent corrosion and maintain a good working condition. Lubricate the machine immediately after cleaning it with water.

Use the table below for the correct torque settings for the screws and bolts of the machine.

Table 1 – Tightening torque of screw joint reinforcement

Diameter	Class 8.8		Class 10.9	
	Nm	lb.ft.	Nm	lb.ft.
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	215	155	305	225
M18	295	217	420	309
M20	420	302	590	438

Increase the torque by 5% when using a locknut.

4.2 Maintenance schedule

Position	Interval	Type	Number	Note
All screws and bolts	8 h	Check	The whole equipment	Check that all screws and bolts are properly tightened and not loose.
Wearing edge	Daily	Check	1 pcs	Check the wearing edge for wear. Turn over or replace as needed.
Cross shaft	40 h	Grease	1pcs	NLGI2 EP
Shear bolt coupling	40 h	Grease	2 pcs	NLGI2 EP
Auger	40 h	Grease	2 pcs / auger	NLGI2 EP
Support bearing (1800H)	40 h	Grease	1 pcs	NLGI2 EP
Transmission chain	40 h	Oil	1 pcs	Engine oil 10W40
Turntable gear	40 h	Grease	2 pcs	NLGI2 EP
Chain tensioner	40 h	Adjustment	1 pcs	Check the tension. You should be able to push the chain down about 7mm. The auger should run smoothly without any noise from the chain.
Gearbox	40 h	Control	1 pcs	Visually check of the oil level, fill if needed. Oil SAE 80W/90 API GL4/GL5, Industrial gear oil ISO VG 220
Gearbox	At first 50 h	Oil change	4 litre	Oil SAE 80W/90 API GL4/GL5, ISO VG 220
Gearbox	500 h / yearly	Oil change	4 litre	Oil SAE 80W/90 API GL4/GL5, ISO VG 220

When lubricating use low temperature grease. These intervals are to be used for normal usage. Always lubricate after cleaning with water.

4.3 Before the snowy season

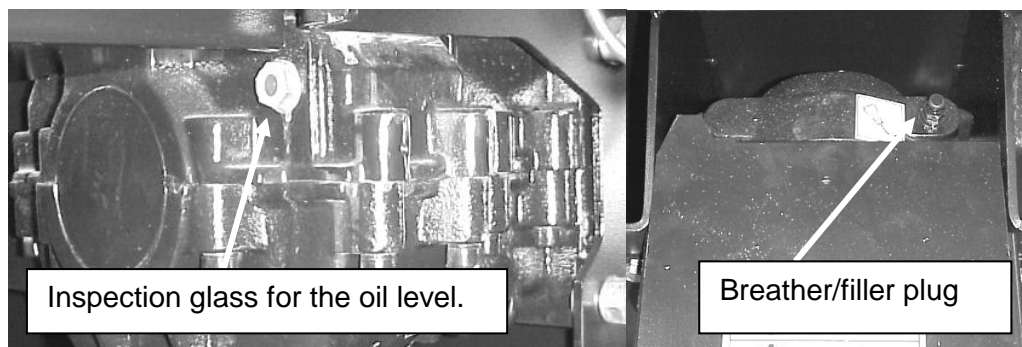
All the above points (chapter 4: Service and maintenance) are to be done. Equipment well serviced lasts longer.

4.4 After the snowy season

After the season, the equipment must be thoroughly cleaned, and then greased and serviced. When the machine is dry, we suggest that you cover the parts where the paint has worn away with a thin coating of oil. Store the snow blower in a dry storage.

4.5 Gear box oil check and change

Check oil level with cold gear box and level machine. Oil level should reach the lower part of the glass. If necessary add recommended oil through the breather on the top of the gear box.



Oil change

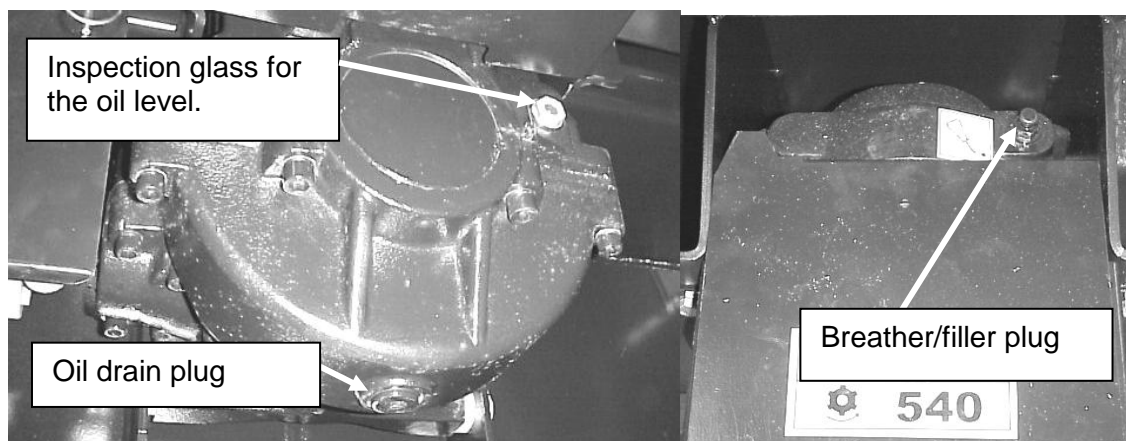
The oil in the gearbox must be changed after the first 50 hours of service and then again every 500 hours or at least once a year.

Start the PTO and run the equipment until the gearbox oil is warm. Unscrew the filler plug on top of the gearbox. Open the drain plug and drain the oil into a suitable container. Clean the plug and reinstall it. Refill with correct grade oil until the oil reaches the lower part of glass at the side of the gear box. **After filling, allow the oil to penetrate the gears and bearings before checking the correct level.** When the oil level is correct, reinstall the filler plug and wipe away any spills.

Oil: SAE 80W/90 API GL4/GL5, Industrial gear oil ISO VG 220

Volume: 4 Litres.

NOTE! Dispose of the old oil in an environmentally correct manner and according to the laws of your country!



4.6 Dismounting / mounting of hydraulic motor



Warning

Relieve the pressure before operating the implement. Let the machine cool down if warm.

Dismounting:

1. Dismount the hydraulic lines to the hydraulic motor, plug connections on motor and hoses with suitable caps. This is done to prevent pollution and oil spills.



2. Dismount the nuts/screws (4 pcs) which hold the motor in place.
3. Pull out the motor from the gearbox, take the motor out of the machine and place it on a clean box or bucket.

Mounting:

1. Clean the flange of the motor and gearbox from oil and sealing agents. Clean thoroughly with alcohol or thinner.
2. The flange between the hydraulic motor and the gearbox is sealed with Loctite 574 sealant. Apply sealant on the hydraulic motor flange before mounting.



3. Apply grease to the hydraulic motor shaft.
4. Mount the motor in a direction suitable for both tractor and snow blower. The leak-oil lead should be attached to the highest point on the motor (there are two possible connections depending on the mounting direction, see chapter 3,1).
5. Mount the nuts/screws with new locking washers. Tighten the screws.
6. Mount all hydraulic leads again and tighten the connections. **DON'T FORGET TO REMOVE THE CAPS.**
7. Test operate the machine and check if there are any oil leakages.

5 Troubleshooting



Warning!

Before any maintenance, service, repairs or adjustments are carried out, the machine must be lowered to the ground and the engine of the tractor must be stopped. The key must be removed from the starter switch.

Problem	Probable cause	Measure
The rotor and the auger do not rotate.	No oil flow/pressure to the snow blower. Clogged discharge spout/rotor housing.	Check the tractor's hydraulics. Clean from snow and ice. Ensure that the rotor is not blocked.
The auger does not turn.	Shear bolt is broken.	Replace the bolt M8x55 6,8 . Note! Don't use a bolt threaded up the neck. Check for what caused the stoppage. Clean.
Poor capacity.	Too low oil flow and working pressure. Frozen snow/ice in the machine.	Check if the tractor delivers correct flow and pressure in accordance with the information supplied when ordering the implement. Remove frozen ice and snow from the implement. Let the machine thaw.
Repeated stoppages.	Wet snow. Frozen snow on the frame. The speed is too high. Working depth.	Higher rotor's revolution speed by reduced forward speed. Clean. Decrease the speed. Decrease the gap.
There is snow left on the surface.	Supporting pads are set too high. The machine is leaning backwards. The wearing edge is worn.	Adjust the height. Adjust the angle. Turn it over or replace it.

Shear bolt for the auger M8x55 **6,8**

Spare shear bolts are found in the toolbox



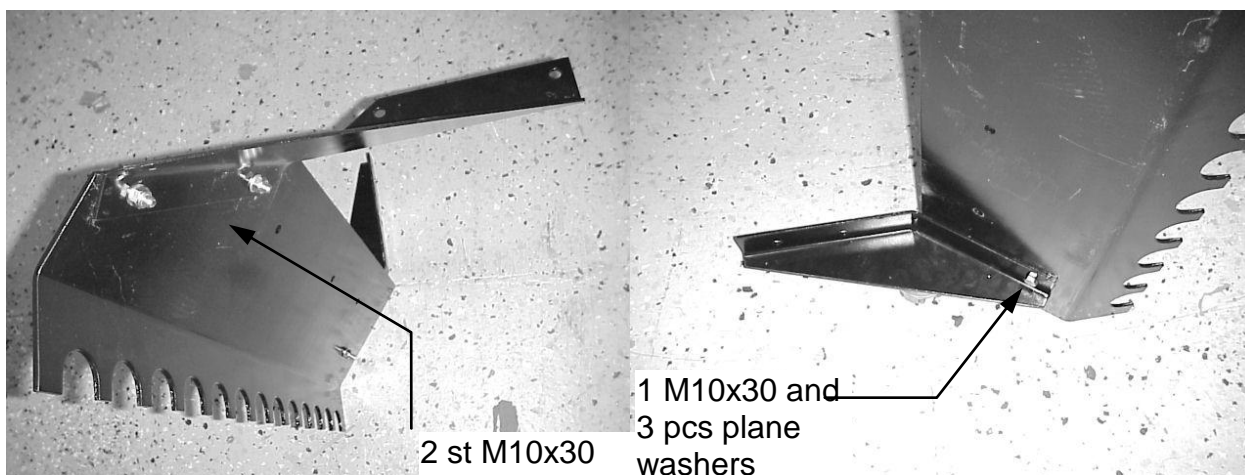
6 Mounting of extension wing (accessories)

Snow blower 1800-2400: art. No 42450

Snow blower 1802-2402: art. No 42450-1

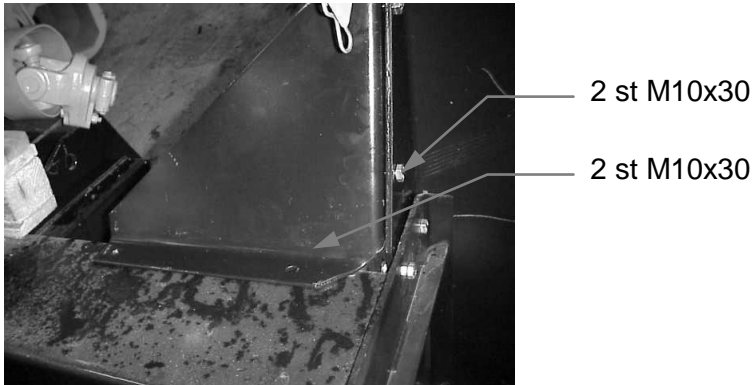
Extension wings are available as accessories for the Optimal 1800-2402 series. The installation is easy and is performed with customary tools and a drill machine. Before installing the implement, make sure that the delivery is complete. Check the following list.

- Extension wing
 - Support, welded
 - Stand, triangular
 - 8 pcs screws M10x30 and 2 pcs screws M12x40
 - 8 pcs nuts M10 Nyloc
 - 11 pcs M10 plane washers
1. Remove the yellow roll-over protection (if mounted) from the snow blower. It cannot be used together with the extension wing.
 2. Remove the two upper bolts from the bearing holder on the right side of the snow blower.
 3. Mount the triangular stands to the extension wing's upper edge and the welded support to the lower holes in the extension wing. Use screws M10x30 as well as Nyloc nuts and plane washers. Place 3 plane washers between the support and the extension wing. See the picture below.



4. Attach the extension wing to the snow blower's frame (on the inside) by using three bolt holes laterally on the snow blower. Tighten only the screws (M10x30) by hand until they lie close to the surface.
5. Mount the side supports to the snow blower's upper bearing holder and extension wing. Use screws (M12x35).

6. Mount the triangular plates to the side wing with screws (M10x30). Place the plates against the snow blower's frame, mark and drill holes (10,5mm) through the frame. Start drilling with a 5-mm drill, then continue with a 10,5mm. Install the screws (M10x30).



7. Tighten all screws thoroughly. **Tighten the screws again after the first hour of operation.**

Caution! Be careful not to strike obstacles during work as this may damage the wing and fling.

7 Spare parts

Your choice is between “original” or “copies”!
Price is often the deciding factor. A “cheap” choice may well be an expensive one in the end.

Some reasons to choose TREJON spare parts:

- Quality and fit.
- Reliability
- Longer service life and therefore better economics
- Guaranteed availability through the TREJON sales partners

The TREJON original spare parts are specifically made for this equipment. The fitting and/or use of non-original parts and accessories may change the technical qualities of your equipment in a negative way. The manufacturer does not give any guarantee for damages caused by using non-original parts or accessories.

The guarantee does not cover arbitrary changes made on the equipment.



Contact the authorised dealer where you purchased the machine when you wish to order repair parts or need other assistance.

When you are ordering repair parts, make sure you know the model, type and serial number of the machine. See the plate on the chassis.

EC-Certificate of Conformity

conforming to EEC Directions 2006/42/EG

We

TREJON FÖRSÄLJNING AB

(name of supplier)

SE – 911 35 Vännäsby, Företagsvägen 9

(full address of company – where this concerns authorized agents within the Common Market, also state the company name and manufacturer)

declare in sole responsibility, that the product

Snow blower OPTIMAL 1800H

Snow blower OPTIMAL 2002H

Snow blower OPTIMAL 2202H

Snow blower OPTIMAL 2402H

...

(make, model)

to which this certificate applies, conforms to the basic safety and health requirements of EEC Directions 2006/42/EG,

(if applicable)

and to the other relevant EEC Directions.

(title and/or number and date of issue of the other EEC Directions)

(if applicable)

To effect correct application of the safety and health requirements stated in the EEC Directions, the following standards and/or technical specifications were consulted:

EN ISO 12100-1 : 2003

EN ISO 12100-2 : 2003

(title and/or number and date of issue of standards and/or specifications)



Håkan Johansson
Managing Director

Vännäsby, 01.01.2009

(Place and date of issue)

(Name and job function of authorized person)

Guarantee- /assignment certificate

- Guarantee terms** - Valid between retailer (Trejon AB dealer) and machine purchaser.
- General about guarantee** - In order to obtain valid guarantee terms set forth below, and the specific guarantee terms set by each provider. These are attached to the user manual for each machine, as appropriate.
- Validity of guarantee** - The guarantee is 12 months from date of purchase.
In some cases, the guarantee can be limited by running time.
- The guarantee covers** - Damaged parts, which have broken down because of defective production operations of materials in course of normal use of the machine.
- Only the labor cost for replacement of defective warranted part.
- The guarantee does not cover** - Transport costs applicable to the machine or the parts.
- Travel costs.
- Any resulting costs incurred as a result of damage to the machine.
- If the machine has been modified by the owner.
- Damage due to normal wear and tear of the machine – Not related to manufacturing defects, poor service, user inexperience or use of spare parts that are not original.
- Excessive or inappropriate use of the machine.
- The guarantee is not applicable to parts which are subject to wear, for example hoses, sealing, oil, belts, batteries, chains, knives etc.
- The guarantee period for replaced parts during the guarantee period expires with the machine's guarantee.
- Normal adjustments, maintenance or supervision
- Guarantee procedures** - Contact place of purchase as soon as any damage or malfunction is detected.
Do not use the machine if the damage can be worse.
- Guarantee repairs must be performed by Trejon AB approved workshop.

ATTENTION!

The guarantee shall enter into force provided that the machine GUARANTEE/ ASSIGNMENT CERTIFICATE has been fully completed and signed by both parties (seller, buyer), and a copy sent in to Trejon AB no later than 14 days from date of sale (the seller is responsible for this happening).

Assignment certificate:

Machine Buyer shall confirm with his signature that he had received manual containing operating instructions, and received information about the operating, security and maintenance requirements described in this and made the final inspection of the machine.

PLEASE FILL IN!



Product: _____ Serialno. _____

Salesman: _____ Company: _____

Signature of salesman: _____ Date of purchase: _____

Name of buyer: _____ Telephone: _____

E-mail: _____

Address: _____ Zipcode: _____

City: _____ Country: _____

Date: _____ Signature of buyer: _____

TREJON AB reserves the right to change or to improve shown models using technical or commercial reasons, without demands to carry out the same improvements on equipment already delivered. Pictures in the manual do not necessarily show the equipment as delivered.

Technical data, weights and measures are without obligation. Reservation for faults.

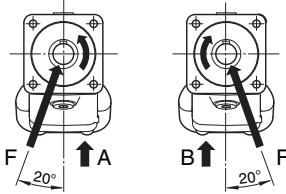
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GB

INSTALLATION GUIDE



DIRECTION OF ROTATION AND SHAFT LOADING

The SCM motors can operate in both directions of rotation. The illustration shows the port selection in relation to the rotation.

The service life of the motor largely depends on the service life of the bearings. These are affected by the operating conditions such as speed, pressure, oil viscosity, degree of purification.

External loading of the shaft, its size, direction and location also affects the service life of the bearings. Optimal angle of engagement is 20°.

If a calculation of bearing service life is required for special applications, contact Sunfab Hydraulics.

FEED PRESSURE

In certain applications the motor can operate as a pump, for example, vehicles on slopes. In such cases one must ensure that there is sufficient flow and feed pressure to prevent cavitation and noise.

HYDRAULIC OIL

High performance oil meeting the specifications ISO type HM, DIN 51524-2HLP or better must be used.

Min. viscosity 10 cSt is required to guarantee lubrication.

Ideal viscosity is 20-40 cSt. In order not to reduce the viscosity of the oil below the recommended level, the system temperature should not exceed 60 °C.

FILTERING

Cleanliness ISO norm 4406, code 16/13 is recommended.

DE

EINBAU-ANLEITUNG

ROTATIONSRICHTUNG UND BELASTUNG DER WELLE

Die SCM-Motoren können mit beiden Rotationsrichtungen arbeiten. Die Abbildung zeigt welcher Anschluss zu welcher Rotationsrichtung gewählt werden muss.

Die Lebensdauer des Motors ist zum großen Teil von der Lebensdauer des Lagers abhängig. Diese werden von Einsatzbedingungen, wie Drehzahl, Druck, Ölviskosität und Reinigungsgrad, beeinflusst.

Eine äußere Belastung auf die Welle, deren Größe, Richtung und Anbringung beeinflussen ebenso die Lebensdauer des Lagers. Der optimale Angriffswinkel beträgt 20°.

Wird die Berechnung der Lagerlebensdauer für spezielle Anwendungen gewünscht, setzen Sie sich bitte mit Sunfab Hydraulics in Verbindung.

SPEISEDRUCK

Bei einigen Anwendungen kann es vorkommen, dass der Motor als Pumpe wirkt, z. B. wenn sich ein Fahrzeug im Gefälle befindet. In solchen Fällen muss sichergestellt werden, dass Förderstrom und Speisedruck ausreichend sind, um Kavitation und nicht erwünschte Geräusche zu vermeiden.

HYDRAULIKÖL

Es ist Hochleistungsöl gemäß Spezifikation ISO Typ HM, DIN 51524-2HLP oder besser zu verwenden.

Zur Sicherstellung der Schmierung ist darf die Viskosität 10 cSt nicht unterschreiten.

Idealerweise beträgt die Viskosität 20-40 cSt.

Damit die Viskosität des Öls nicht unter das empfohlene Maß absinkt, sollte die Anlagentemperatur 60 °C nicht überschreiten.

FILTRIERUNG

Es wird eine Reinheit gemäß ISO Norm 4406, Kode 16/13 empfohlen.

SE

INSTALLATIONS-ANVISNING

ROTATIONSRIKTNING OCH AXELBELASTNING

SCM-motorerna kan arbeta i båda rotationsriktningarna. Illustrationen visar portval i förhållande till rotation.

Motorns livslängd beror till en stor del på lagrens livslängd. Dessa påverkas av driftförhållanden, såsom varvtal, tryck, oljeviskositet, reningsgrad.

En yttre belastning på axeln, dess storlek, riktning och placering påverkar också lagerlivslängden. Optimal angreppsvinkel är 20°.

Önskas beräkning av lagerlivslängder för speciella applikationer, kontakta Sunfab Hydraulics.

MATARTRYCK

I vissa applikationer kan motorn komma att arbeta som pump, t ex fordon i nedförsbacke. I sådana fall måste man försäkra sig om att det finns tillräckligt flöde och matartryck för att förebygga kavitation och missljud.

HYDRAULOLJA

Högprestandaolja enligt specifikation ISO typ HM, DIN 51524-2HLP eller bättre ska användas.

Min. viskositet 10 cSt krävs för att säkerställa smörjning.

Idealisk viskositet är 20-40 cSt.

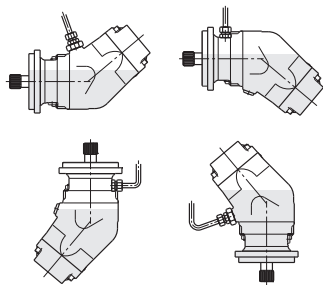
För att inte sänka oljans viskositet under rekommenderad nivå bör systemtemperaturen ej överstiga 60 °C.

FILTRERING

Renlighet ISO norm 4406, kod 16/13 rekommenderas.

GB

DRAINAGE



Before start up, the motor housing is filled to at least 50% with hydraulic oil. The drainage hose is connected to the drainage outlet positioned highest on the motor. The other end is connected below the oil level in the tank.

Max. temperature of the drainage oil is 75 °C for Nitrile shaft seals and 90 °C for Viton shaft seals. Flushing of the motor housing may be required to keep the drainage oil at the recommended temperature.

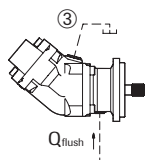
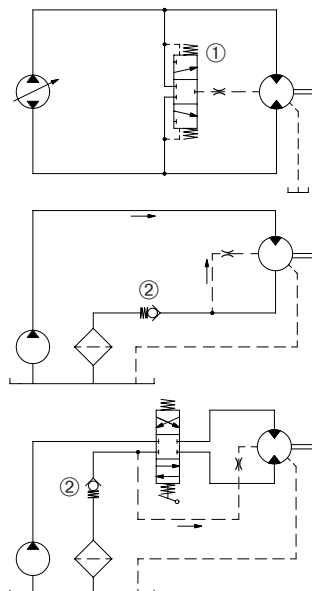
Guideline for housing flushing:

Motor SCM	Flushing l/min	Cont. rpm
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

Max. permitted housing pressure depends on the selection of motor, shaft seal and rpm. See the table below for ISO respectively SAE motors.

- N Nitrile
- H Nitrile, high pressure
- V Viton, high pressure

Housing flushing can be built up with the help of a flushing valve ① or taken directly from the return line. When the return pressure is too low this is compensated for by a counter pressure valve ②. The tank line is connected to the highest point as in the figure ③.



DE

DRAINAGE

Vor Inbetriebnahme wird das Motorgehäuse zu mindestens 50 % mit Hydrauliköl gefüllt. Der Drainageschlauch wird am höchst gelegenen Drainageanschluss des Motors angeschlossen. Das andere Ende wird unterhalb des Ölfüllstands im Tank angeschlossen.

Die maximale Temperatur des Drainageöls beträgt bei Wellendichtungen aus Nitril 75 °C und aus Viton 90 °C. Damit das Drainageöl die empfohlene Temperatur beibehält, kann eine Spülung des Motorgehäuses erforderlich sein.

Richwerte für die Gehäusespülung:

Motor SCM	Spülung l/min	Kont. U/min
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

Der maximal zulässige Gehäusedruck hängt von der Wahl des Motors, der Wellendichtung und der Drehzahl ab. Beachten Sie die untenstehende Tabelle für ISO- bez. SAE-Motoren.

- N Nitril
- H Nitril, hoher Druck
- V Viton, hohe Temperatur

Die Gehäusespülung kann mit Hilfe eines Spülventils ① erzeugt werden oder direkt aus der Rücklaufleitung entnommen werden. Wenn der Rücklaufdruck zu gering ist, wird dies durch ein Gegendruckventil kompensiert ②. Die Tankleitung wird, wie im Bild gezeigt, am höchsten Punkt angeschlossen ③.

SE

DRÄNERING

Före uppstart fylls motorhuset till minst 50% med hydraulolja. Dräneringsslangen ansluts på motorns högst placerade dräneringsuttag. Andra änden ansluts under tankens oljenivå.

Max temperatur på dräneringsoljan är 75 °C för axeltätning av Nitril och 90 °C för Viton. Spolning av motorhuset kan behövas för att hålla rekommenderad temperatur på dräneringsoljan.

Riktvärden för husspolning:

Motor SCM	Spolning l/min	Kont. varv/min
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

Max tillåtet huströck beror på val av motor, axeltätning och varvtal. Se nedanstående tabell för ISO-respektive SAE motorer.

- N Nitril
- H Nitril, högt tryck
- V Viton, hög temperatur

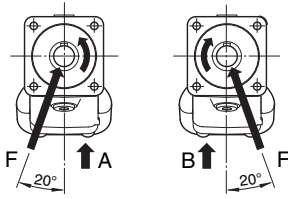
Husspolningen kan byggas upp med hjälp av en spolventil ① eller tas direkt från returledningen. Om returtrycket är för lågt kompenseras detta med en mottrycksventil ②. Tankledningen ansluts på högsta punkt enligt figur ③.

Motor SCM-ISO	Code Kode Kod	Temp. °C	Max. housing pressure MPa at rpm Max. Gehäusedruck MPa bei U/min Max huströck MPa vid varv/min									
			1000	2000	3000	4000	5000	6000	7000	8000	9000	
012-034	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06	
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35	0.31	0.27	
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06	
047-064	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08			
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35			
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08			
084-130	N	75	0.38	0.19	0.13	0.10	0.08	0.06				
	H	75	1.72	0.86	0.57	0.43	0.34	0.29				
	V	90	0.38	0.19	0.13	0.10	0.08	0.06				

Motor SCM-SAE		°C	Max. housing pressure MPa at rpm Max. Gehäusedruck MPa bei U/min Max huströck MPa vid varv/min					
			1000	1500	2000	3000	4000	5000
012-034 B	N	75	0.64	0.42	0.32	0.21	0.16	0.12
	H	75	2.87	1.91	1.43	0.96	0.72	0.52
	V	90	0.64	0.42	0.32	0.21	0.16	0.12
047-108 C	N	75	0.55	0.36	0.27	0.18	0.14	0.11
	H	75	2.46	1.64	1.23	0.82	0.61	0.51
	V	90	0.55	0.36	0.27	0.18	0.14	0.11
084-130 D	N	75	0.35	0.23	0.17	0.12		
	H	75	1.56	1.04	0.78	0.52		
	V	90	0.35	0.23	0.17	0.12		

ES

INSTRUCCIONES DE MONTAJE



SENTIDO DE ROTACIÓN Y CARGA EN EL EJE

Los motores SCM pueden trabajar en ambos sentidos de rotación. La imagen muestra la selección de la conexión según la rotación.

La vida útil del motor depende en gran medida de la vida útil de los rodamientos, que a su vez depende de las condiciones de funcionamiento (velocidad, presión, viscosidad del aceite y grado de purificación, por ejemplo).

La carga externa en el eje, así como el tamaño de éste, su sentido de rotación y su ubicación también influyen en la duración de los rodamientos. El ángulo de accionamiento óptimo es de 20°.

Si necesita un cálculo de la vida útil de los rodamientos para una aplicación especial, póngase en contacto con Sunfab.

PRESIÓN DE ALIMENTACIÓN

En algunas aplicaciones el motor puede actuar como una bomba, por ejemplo, en aquellas en las que el vehículo trabaja en pendiente. En esos casos hay que asegurarse de que el caudal y la presión de alimentación sean suficientes para evitar la cavitación y el ruido.

ACEITE HIDRÁULICO

El aceite debe ser de alto rendimiento y cumplir las especificaciones ISO tipo HM, DIN 51524-2HLP como mínimo.

Además, para garantizar la lubricación el aceite debe tener una viscosidad mínima de 10 cSt.

El nivel de viscosidad ideal se encuentra entre 20 y 40 cSt.

Para la que la viscosidad no descienda por debajo del nivel recomendado, la temperatura del sistema no debe superar los 60 °C.

FILTRACIÓN

Se recomienda un nivel de filtración acorde con los códigos de limpieza 16/13 de la norma ISO 4406.

FI

ASENNUSOHJE

PYÖRIMISSUUNTA JA AKSELIKUORMITUS

SCM-moottorit toimivat molempiin pyörimissuuntiin. Kuvasta ilmenee pyörimissuunnan riippuvuus liitännästä.

Moottorin käyttöikä riippuu suurelta osin laakerien käyttöikästä. Laakereihin vaikuttavat käyttöolosuhteet kuten pyörimisnopeus, paine, öljyn viskositeetti ja puhtausaste.

Myös akseliin kohdistuva ulkoinen kuormitus, sen suuruus, suunta ja sijoittaminen vaikuttavat laakerien käyttöikään. Optimaalinen kohdistuskulma on 20°.

Jos haluat laskelman laakerien käyttöiästä erityisissä sovelluksissa, ota yhteys Sunfab Hydraulicsiin.

SYÖTTÖPAINE

Joissakin sovelluksissa moottori voi joutua toimimaan pumppuna, esim. ajoneuvon liikkeessä alamakeen. Sellaisissa tapauksissa pitää varmistaa, että virtaama ja syöttöpaine ovat riittävät kavitaation ja melun ehkäisemiseksi.

HYDRAULIÖLJY

Moottorissa tulee käyttää korkealaatuista öljyä ISO-määrityksen mukaan, tyyppi HM, DIN 51524-2HLP tai parempaa.

Voitelun varmistamiseksi viskositeetin on oltava vähintään 10 cSt.

Ihanteellinen viskositeetti on 20-40 cSt.

Jotta öljyn viskositeetti ei laskisi alle suositellun tason, järjestelmän lämpötila ei saa ylittää 60 °C.

SUODATUS

Puhtausstandardisuositus on ISO-normi 4406, koodi 16/13.

IT

ISTRUZIONI PER L'INSTALLAZIONE

SENSO DI ROTAZIONE E CARICAMENTO DELL'ALBERO

I motori SCM sono in grado di funzionare in entrambi i sensi di rotazione. La figura mostra la selezione del foro a seconda della rotazione.

La durata di esercizio del motore dipende in larga misura dalla durata di esercizio dei cuscinetti. Tale durata è soggetta alle condizioni di esercizio quali velocità, pressione, viscosità dell'olio e grado di depurazione.

Anche il caricamento dall'esterno dell'albero, le dimensioni, la direzione e la posizione influiscono sulla durata di esercizio dei cuscinetti. L'angolo di accoppiamento ideale è di 20°.

Contattare Sunfab Hydraulics per il calcolo della durata di esercizio dei cuscinetti per applicazioni speciali.

PRESSIONE DI ALIMENTAZIONE

In alcune applicazioni il motore può funzionare come una pompa, ad esempio nei veicoli in discesa. In questi casi occorre assicurarsi che vi siano portata e pressione di alimentazione sufficienti a prevenire la cavitazione e il rumore.

OLIO IDRAULICO

Utilizzare olio ad alte prestazioni conforme alle specifiche ISO tipo HM, DIN 51524-2HLP o superiore.

Per garantire la lubrificazione è necessaria una viscosità minima di 10 cSt.

La viscosità ideale è di 20-40 cSt.

Per non ridurre la viscosità dell'olio al di sotto del livello consigliato, la temperatura dell'impianto non deve superare i 60 °C.

FILTRAZIONE

È consigliata la pulizia a norma ISO 4406, codice 16/13.

ES

DRENAJE

Antes de la puesta en marcha, es preciso llenar la carcasa del motor con aceite hidráulico hasta al menos 50%. La manguera de drenaje debe ir conectado a la salida de drenaje situada en la parte superior del motor, y el otro al depósito, por debajo del nivel de aceite.

La temperatura máxima del aceite de drenaje debe ser de 75 °C en el caso de los retenes de eje de nitrilo y de 90 °C en el de los retenes de eje de Viton. Para lavar la carcasa del motor puede ser necesario mantener el aceite de drenaje a la temperatura recomendada.

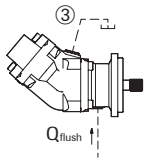
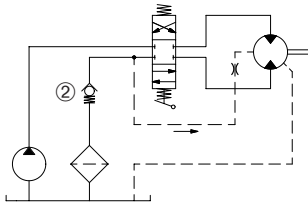
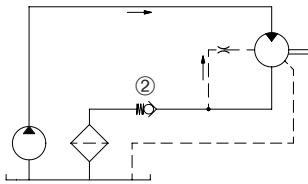
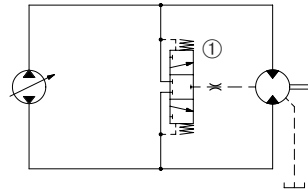
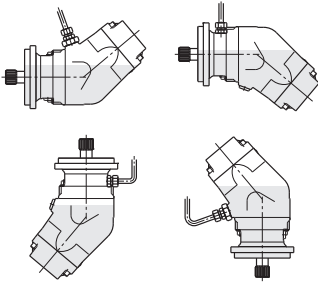
Directrices para el lavado de la carcasa:

Motor SCM	Lavado l/min	Cont. rpm
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

La presión máxima permitida del aceite de drenaje de la carcasa del motor depende del tipo de motor, el retén de eje y la velocidad. La tabla siguiente muestra los valores de presión de los motores ISO y SAE respectivamente.

- N Nitrilo
- H Nitrilo, alta presión
- V Viton, alta temperatura

El lavado de la carcasa se puede efectuar con ayuda de una válvula de lavado ① o directamente desde la línea de retorno. Cuando la presión de retorno es demasiado baja, se compensa con una válvula de contrapresión ②. La línea del depósito está conectada al punto más alto, como se muestra en la figura ③.



FI

HUUHTELU

Ennen käynnistystä moottorin kotelo täytetään vähintään puolelleen hydraulijälyä. Ylivuotoletku kytketään moottorin korkeimmalla sijaitsevaan ylivuotoletkintään. Letkun toinen pää liitetään säiliöön öljytason alapuolelle.

Ylivuotoöljyn suurin lämpötila on 75 °C, kun akselitiiviste on nitriliä ja 90 °C kun tiiviste on Vitonia. Moottorikotelon huuhtelu saattaa olla tarpeen ylivuotoöljyn lämpötilan pitämiseksi suositeltuna.

Kotelon huuhtelun ohjeavvot:

Moottori SCM	Huuhtelu l/min	Jatkuva r/min
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

Ylivuotoöljyn aiheuttama suurin sallittu kotelon paine riippuu siitä, mikä moottori, akselitiiviste ja pyörimisnopeus on valittu. Katso alla oleva taulukko ISO- ja SAE-moottoreille.

- N Nitrili
- H Nitrili, suuri paine
- V Viton, korkea lämpötila

Kotelon huuhtelu voidaan toteuttaa huuhteluventtiilin ① avulla tai ottaa suoraan paluujohdosta. Jos paluupaine on liian pieni, se tasataan vastapaineventtiilillä ②. Säiliön johto kytketään korkeimpaan kohtaan kuvan mukaisesti ③.

IT

SCARICO

Prima dell'avviamento, versare olio idraulico nel corpo motore per almeno il 50%. Il tubo di scarico è collegato all'uscita dello scarico situata nel punto più alto sul motore. L'altra estremità è collegata sotto il livello dell'olio nel serbatoio.

La temperatura max. dell'olio di scarico è di 75 °C per guarnizioni dell'albero in nitrile e di 90 °C per guarnizioni dell'albero in Viton. Potrebbe essere necessario inviare un flusso di lubrificazione nel corpo motore per mantenere l'olio di drenaggio alla temperatura consigliata.

Istruzione per il flusso di lubrificazione nel corpo motore:

Motore SCM	Lavaggio l/min	Cont. giri/min
012-034	2-8	≥ 2800
047-064	4-10	≥ 2500
084-130	6-12	≥ 2200

La pressione max. consentita nel corpo dell'olio di scarico dipende da motore, guarnizione dell'albero e numero di giri selezionati. Nella tabella sottostante sono riportati, nell'ordine, i motori ISO e SAE.

- N Nitrile
- H Nitrile, alta pressione
- V Viton, alta temperatura

Il lavaggio del corpo motore può avvenire mediante una valvola di lavaggio ① oppure direttamente dal tubo di ritorno. Una pressione di ritorno troppo bassa è compensata da una valvola di contropressione ②. Il tubo del serbatoio è collegato nel punto più alto come indicato in figura ③.

Motor SCM-ISO	Código Koodi Codice	Temp. °C	Presión máxima en carcasa, MPa a rpm Maks. kotelon paine MPa pyörimisnopeudella r/min Max press. int. MPa girimin								
			1000	2000	3000	4000	5000	6000	7000	8000	9000
012-034	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35	0.31	0.27
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06
047-064	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08		
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35		
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08		
084-130	N	75	0.38	0.19	0.13	0.10	0.08	0.06			
	H	75	1.72	0.86	0.57	0.43	0.34	0.29			
	V	90	0.38	0.19	0.13	0.10	0.08	0.06			

Motor SCM-SAE		°C	1000	1500	2000	3000	4000	5000
012-034 B	N	75	0.64	0.42	0.32	0.21	0.16	0.12
	H	75	2.87	1.91	1.43	0.96	0.72	0.52
	V	90	0.64	0.42	0.32	0.21	0.16	0.12
047-108 C	N	75	0.55	0.36	0.27	0.18	0.14	0.11
	H	75	2.46	1.64	1.23	0.82	0.61	0.51
	V	90	0.55	0.36	0.27	0.18	0.14	0.11
084-130 D	N	75	0.35	0.23	0.17	0.12		
	H	75	1.56	1.04	0.78	0.52		
	V	90	0.35	0.23	0.17	0.12		



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