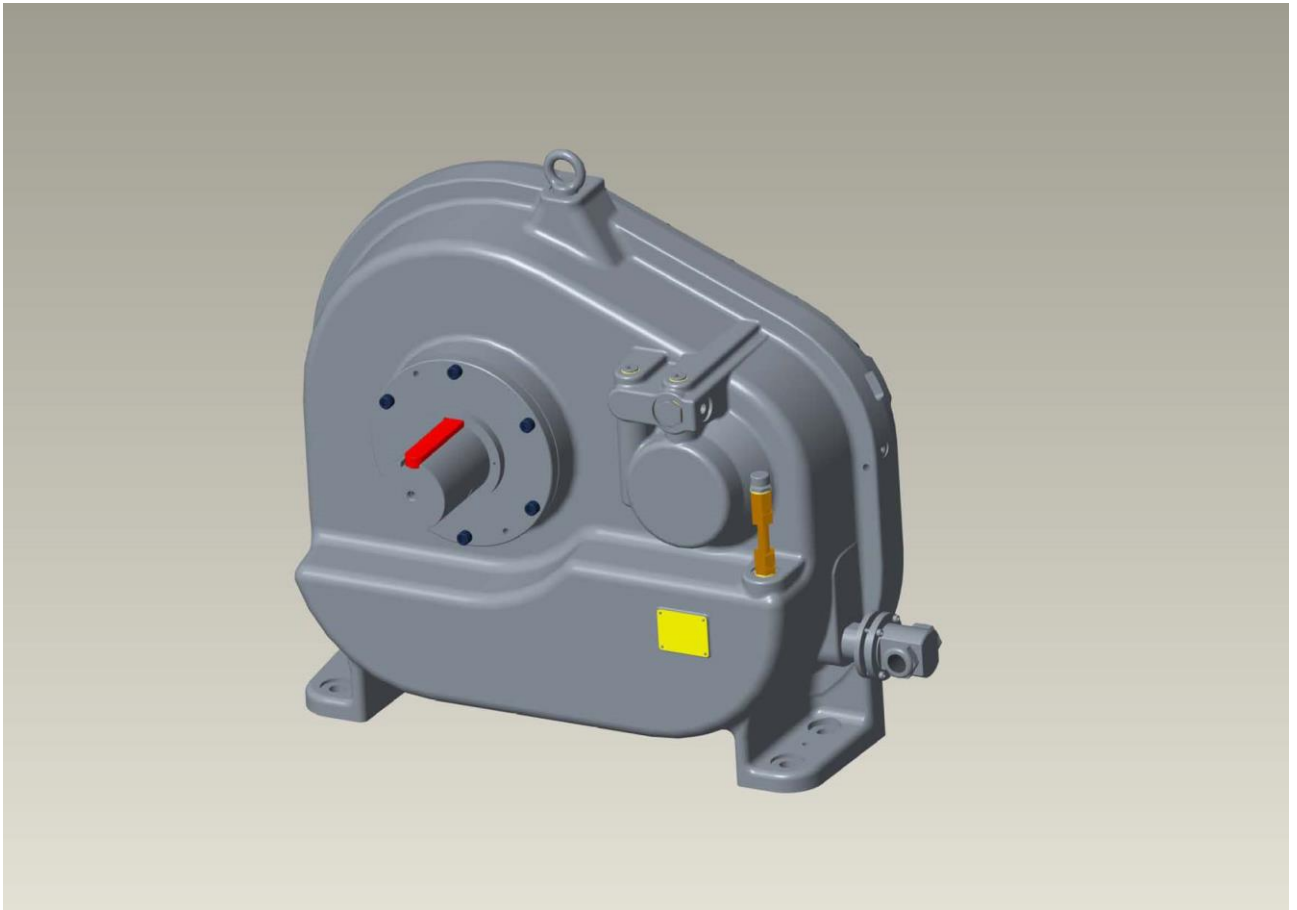




SVENSKA ROTOR MASKINER AB  
BOX 15085  
SE-104 65 STOCKHOLM, SWEDEN  
FAX +46 8 466 45 01, PHONE +46 8 466 45 00

# TECHNICAL INFORMATION

## B39054 Gear box



Doc no.: TI B39054

Rev.: 2017-08-29

## Contents

1. Technical data	page 3
1.1 Specification – Gearbox B39	
1.2 Description oil system	
2. Installation	page 4
2.1 Functional description	
2.2 Transport and handling	
2.3 Lubrication oil system	
2.4 Checklist before initial start up	page 5
3. Start up and operational instructions	page 6
3.1 Start up and shut down procedure	
3.2 Safety aspects of running the B39	
4. Maintenance	page 9
4.1 Service general	
4.2 External oil system	
4.3 Spare parts	
5. Documentation	page 10
5.1 Installation of coupling	
5.2 Drawing: B39054	

## 1. Technical data

### 1.1 Specification Gearbox B39054

Layout:	A Gearbox for 890 kW power.
Drive configuration:	Drive shaft A, 4750 rpm, Shaft B 1800 rpm. Ratio: 2.63:1 (Possible ratio: 3.17:1- 1.29:1)
Dimensions:	LxWxH: 860x590x825 mm (excl couplings)
Weight:	430 kg (excl couplings)
Ambient temp:	-20°C to +80°C
Orientation of Gearbox:	According to layout drawing "B39054 sheet1".
Material in housing:	Cast iron SS0125
Material in gears:	Steel

### 1.2 Description oil system

Lubrication system:	Circulating oil system. Integrated oil pump
Oil blocking system:	Lip sealing package on all shaft ends
Oil pressure:	4.5 Bar abs
Oil flow:	15.1 lit/min
Oil reservoir volume:	23.0 lit + external devices
Lubrication oil type:	Statoil Mereta 68 or similar
Max oil temp. injected:	60°C
Oil filter requirement:	15µm (Not necessary if the oil system not contain particle larger than 15 my. The gear box has one magnetic plug).
Max pressure drop in cooler:	0.3 Bar
Pressure gage:	Recommended to indicate pressure below 2 Bar abs at injection point.

## 2. Installation

### 2.1 Functional description

The Gearbox B39 used to connect expander/compressor with generator/motor. Between the units shall coupling be used. The B39 have one internal oil tank and oil pump but not any oil cooler. For that reason B39 have two connections “Oil out to cooler” and “Oil injection from Cooler” se Drawing B39054.

### 2.2 Transportation and handling

Please take the following precautions when transporting and handling the B39 during installation:

- The B39 must be transported standing fixed with mounting feet. The Lifting eye shall be used when the B39 needs to be lifted.

The lifting eye on the Gearbox can **only** be used to lifting the Gearbox B39 and not other units or frames.

- Always cover the B39 connections in order to prevent water, dust and debris to enter the B39 and cause damage.
- Do NOT remove the protective covers from the connections until the expander is mounted in place and the oil piping will be fitted.

### 2.3 Lubrication oil system

Please acknowledge the following instructions and warnings to avoid injury.

An external oil cooler system is required in order to ensure proper operation of gears, drive shaft seal and bearings. B39 have two connections “Oil out to cooler” and “Oil injection from Cooler”. The position of this connections, see picture 2.2.2 and documentation in chapter 5.2.

The following functions are essential:

- Oil cooler
- Oil pressure guard if necessary
- Oil temperature guard
- Oil filter if necessary

The Gearbox B39 has following components integrated:

- Oil sump being vented to atmosphere
- Oil pump for pressure 4.5 Bar atm
- Over flow valve for specified pressure
- Magnetic plug in sump

## **2.4 Checklist before initial start up**

Please acknowledge the following checklist before attempting to start up the B39:

- 1 Check the oil level in the oil sump. A minimum of 23 litres +external pipes and cooler.
- 2 Check that it is oil in cooler and pipes.
- 3 Check that the oil connections are correctly and properly secured.  
See picture 2.2.2
- 4 Check that all couplings are correctly and properly mounted and assembled.  
See picture 2.2.3

### 3. Start up and operational instructions

#### 3.1 Start up and shut down procedure

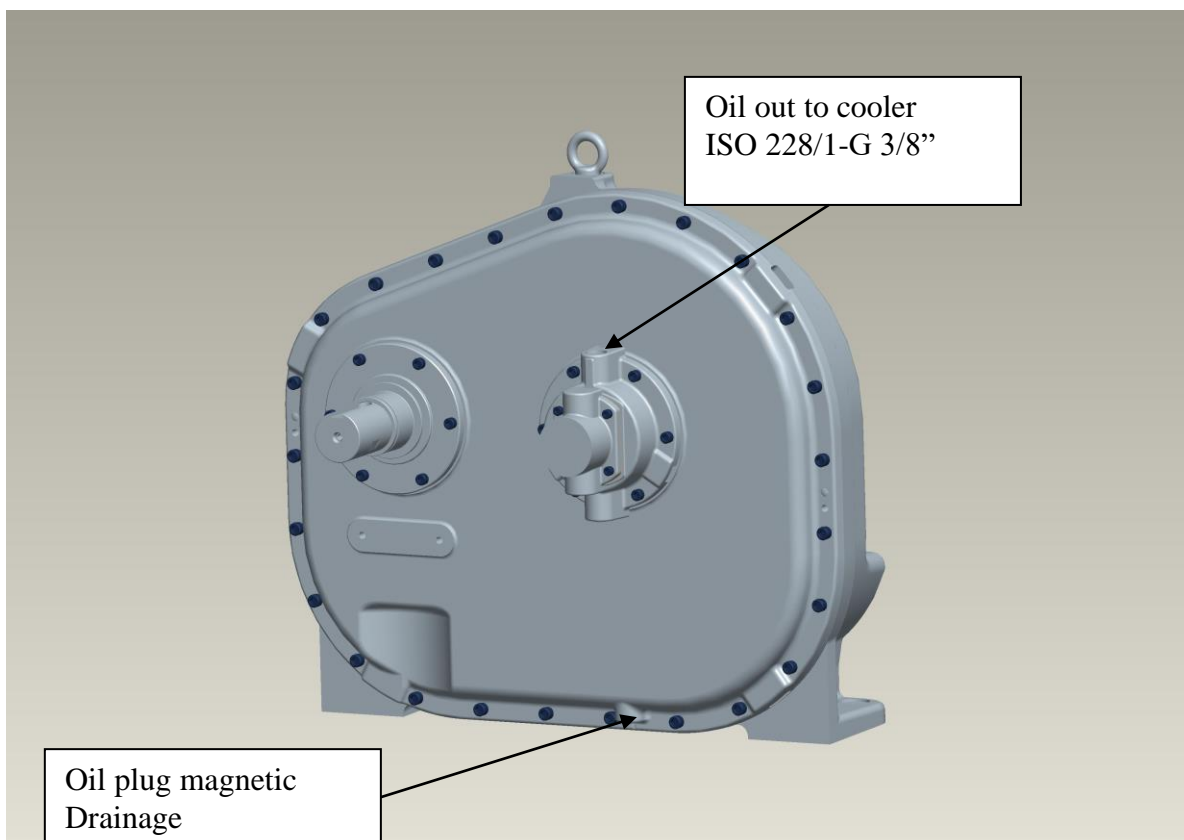
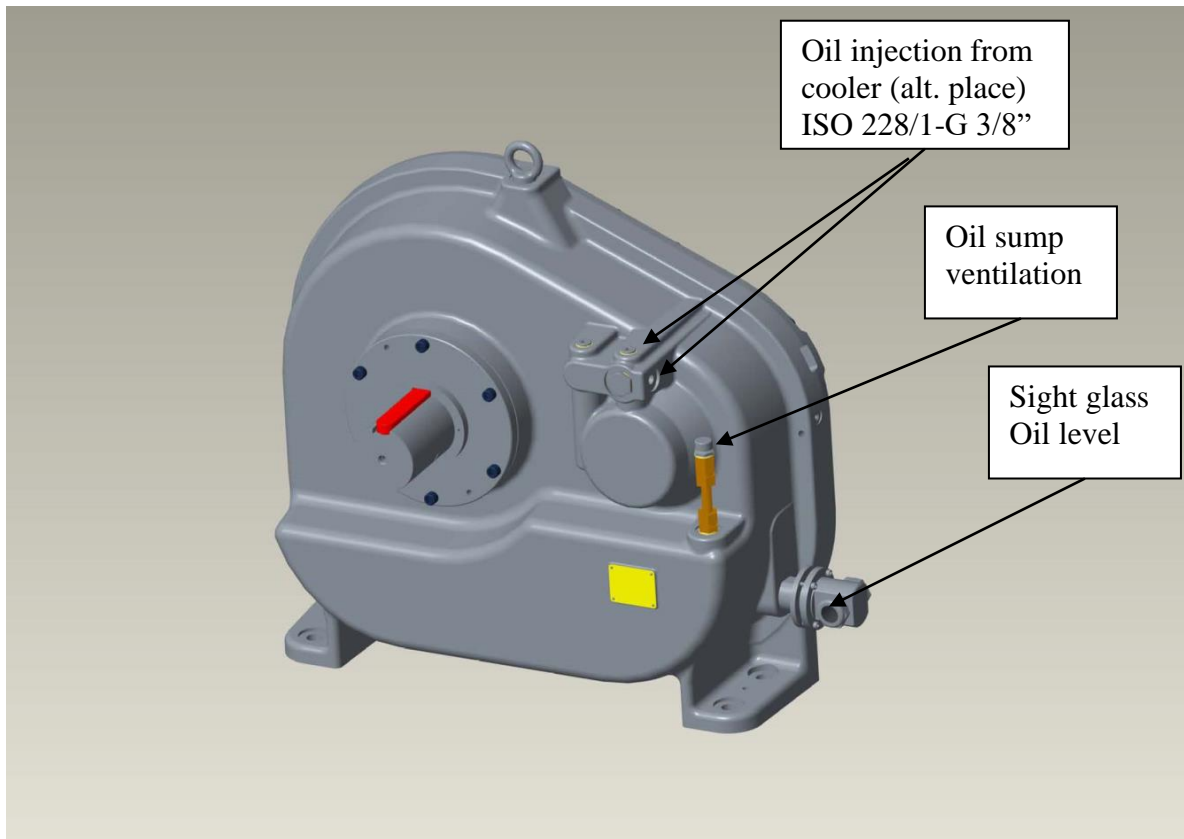
- Prime the pump with oil before start if B39 have been stationary for > 1 month.
- Oil pressure is to be applied immediately after the B39 is started.
- The acceleration up to nominal speed should be swift without unnecessary delay.
- Do not run continuously at operating speeds below 1000 rpm on shaft A.
- Check the oil pressure at inlets of the B39 immediately after start up.
- Please inspect the B39 and the oil system after the first test run and check for oil leakages.
- When the oil pressure is removed the unit must be stopped without delay.
- **Do not operate B39 without applied oil pressure!**
- Max allowed operating speed is 5000 rpm for shaft A

#### 3.2 Safety aspects of running the Gearbox B39

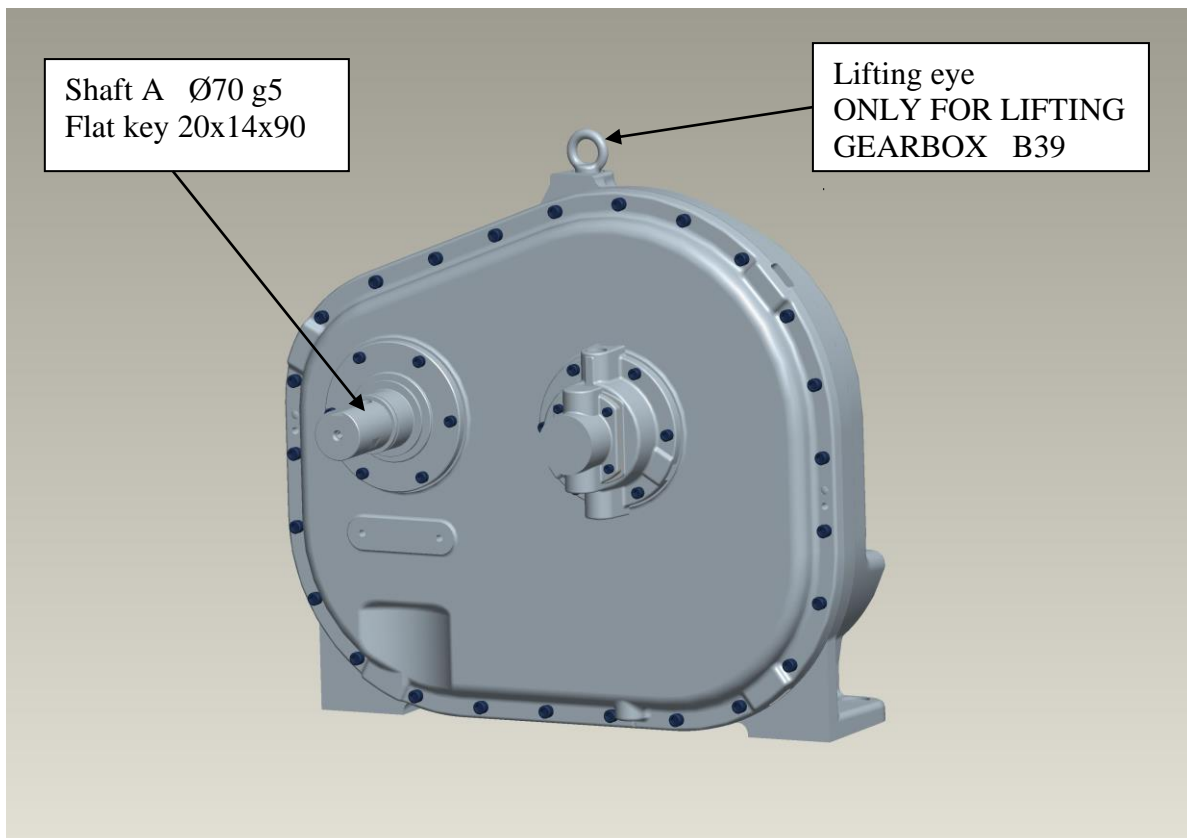
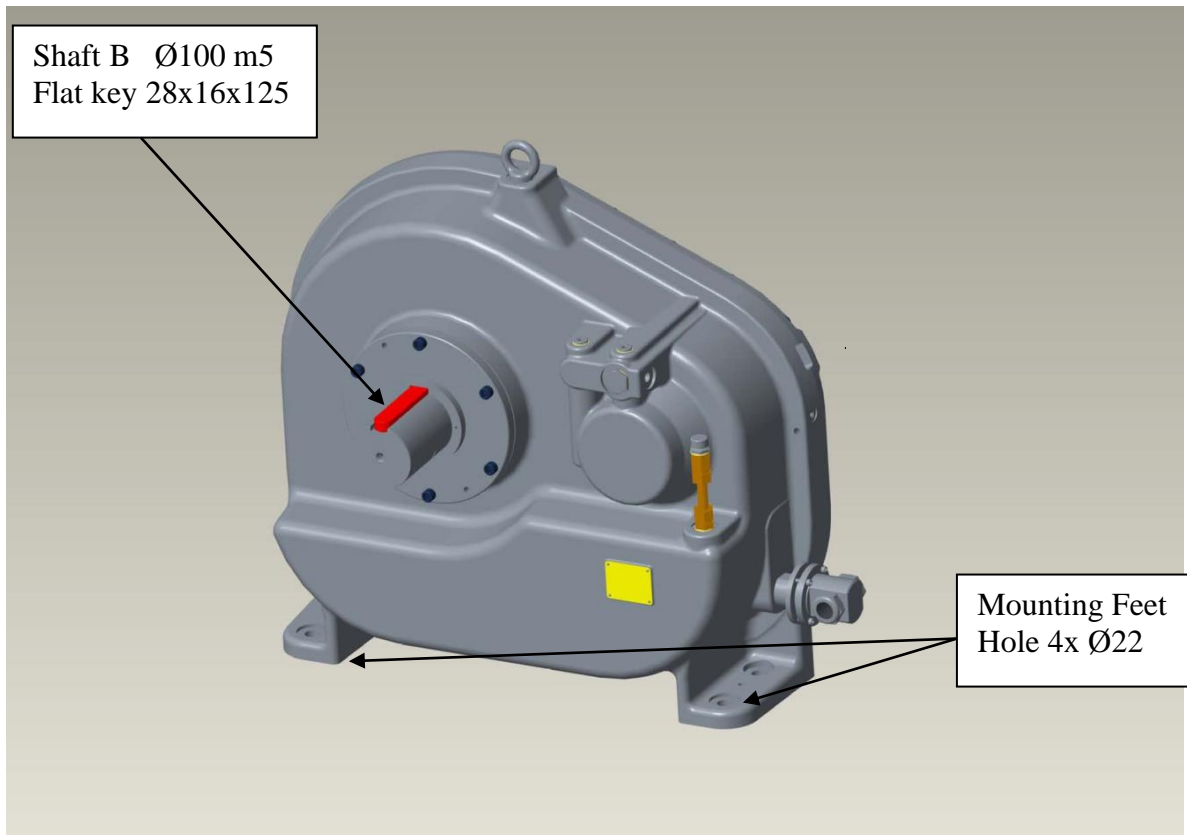
Please acknowledge the following instructions and warnings to avoid injury.

- Hot surfaces: Make sure that appropriate precautions are taken to avoid any kind of injuries related to contact with hot surfaces. The surface temperature of the B39 stage may exceed 80°C during operation and will stay warm for a long period after the B39 has been stopped.
- Noise: Make sure that appropriate precautions are taken to avoid any kind of injuries related to the noise generated by the B39. Exposure to the noise levels from the B39 without wearing noise protection will result in permanent hearing dysfunction.
- Damage: Always make sure to mount protection covers around the couplings to prevent personal injury.
- Toxic oil: Make sure that appropriate precautions are taken to avoid any unnecessary contact with any oil traces on the B39 or the lubrication oil system. Use protective gloves at all time.

Picture 2.2.2 Oil connections and information



Picture 2.2.3 Gearbox with shafts information





## **4. Maintenance**

### **4.1 Service general**

Please follow the recommendations below:

Service interval:                      Gearbox B39:                      Every 17.500 hours or 3 years  
with ever comes first \*

For service of B39 change the oil and clean the oil plug (or change oil filter).

\* For other service please contact SRM for authorized service personal.

### **4.2 External oil system**

Oil change interval:                      OEM Responsibility

Filter change interval:                      OEM Responsibility

### **4.3 Spare parts**

Original spare parts will be provided by SRM's authorized service personal.

## 5. Documentation

### 5.1 Installation of coupling

The couplings for Gearbox B39 are designed for key shaft and locking screws.

Move the unit (Expander/Generator) to line the shaft, see separate document for the coupling.

The distance between the two coupling parts on shafts shall have (140 mm) enough space for mounting the spacer.

There is not any place reserved for speed sensor on gearbox.

Line the shafts before mounting the couplings.

**NOTE! Positions marked as “Not included” are not included in B39 package. The couplings must be order separately.**

