# G0009 Commissioning Procedures for SB121 Demountable Sidelifter

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## Contents



This topic applies to a PTO driven Hydraulic system.

### Chassis Loading & Finishing

Check specification for appropriate model. Ensure truck hydraulics are set up per the hydraulic schematic for the appropriate model:

1. Correct displacement pump is fitted for required flow at desired running speed of truck. Pressure rating and relief settings for this pump correspond to recommendations.
2. Correctly sized oil tank is fitted and plumbed to ensure uninhibited suction from bottom of tank.
3. Hydraulic pipework is run down the support frame or truck chassis to both crane positions.
4. Ensure hydraulic hoses cannot rub on each other or any other object and do not pass over battery or air cleaner access. Orientate elbow fittings square to horizontal or vertical wherever possible.
5. Tie oil tank isolating valve handles open with cable ties or similar to prevent unintentional shutting-off.
6. Ensure support frame or truck chassis mountings have been set up for the appropriate model, as per Steelbro Installation Advice for Trucks.
7. Ensure Stop Blocks are not fitted to the truck support frame and the Load Transfer Blocks are not fitted to the crane.
8. Load modules onto the supports and position cranes where required to ensure that the required positions can be achieved. Check twistlock spacings are correct both longitudinally and diagonally when in place.

Fit the required Load Transfer Blocks to the cranes with six M8x80 cap screws and shims to ensure a close fit to the underside of the support flanges. A maximum clearance of 1mm is recommended. If the modules are to be non-sliding then this can be a non-clearance fit.

1. The Side Guide Wear Pads are typically set up for the standard 1100mm or 1150mm width to outside of support flanges. These can be shimmed to accommodate excessive (> 2mm) variation in the fabricated support frame.

2. Fit the Inside Stop Blocks and ensure that each crane is pushed forward against them. Recheck twistlock spacings both longitudinally and diagonally. (Note that the tolerance on the container interface dimensions is typically ± 6mm longitudinally, ± 3mm transversely and ± 9mm diagonally)
3. Fit the Outside Stop Blocks on the top of the support plate with a minimal gap (<1mm) between the block and the crane base. These are each bolted down with four M12x50 cap screws.

Connect crane supply hoses to the modules:

1. Run electrical control cables from control/remote box to each of the individual crane junction boxes.
2. Once all hydraulics have been connected fill the oil tank to 3/4 full.

### Pre-Commissioning Checks

Prior to running the new Sidelifter the following checks should be made:

- Examine the Sidelifter, checking that the specification is as ordered.
- Check all exposed components (lights, handles, chains etc) have not been damaged during delivery or installation.
- Check the operation of the offside batten poles - if fitted.
- Check the alignment of the optical offside detection sensors - if fitted.
- Check the correct alignment of the optical container position sensor - if fitted.
- The chain slings have been matched to the cranes. If a tag has been fitted to the slings, check that the serial number matches that of the cranes, and the SWL is more than half the SWL of the appropriate model, i.e. SWL for SB300 slings are greater than 15000kg each.

It is recommended that the start-up procedure be carried out without the chains fitted:

- Check cylinder rods for damage or excess paint.
- Correct operation of all twistlock mechanisms.
- Check all greasing points have been greased, and the nipples are clear of paint. This will have been carried out at the factory during assembly, but it is advisable to still check this.
- All controls are labelled and function in agreement with decals.
- Ensure that the truck tyres are inflated to correct pressure, as this can affect the stability of the unit during lifting.
- Check all pipe and hose fittings are not loose. Note: it is very easy to miss a loose connection onto the Danfoss valve bank, and difficult to access all of these fittings when the cranes are stowed.
- Bleed / prime the PTO pump.
- Check that the PTO controls operate correctly from the cab.
- Check the oil tank level. It is recommended that commissioning should start with the tank ¾ full with all crane lifting modules and stabiliser legs parked in the stowed position.
- Electrical checks should be carried out by now, including the operation of the remote control and of work lamps, etc.

## Crane Start-Up

Beware that trapped air in the hydraulic system can result in sudden and unintentional movement of the cranes. When operating the cranes for the first time, operate each cylinder with care.

Keep non-involved people out of the commissioning area. Stand clear of hydraulic fittings and out of the reach of the crane arms and stabilisers.

1. Activate the PTO and run for a few minutes without operating any controls. This will allow the air to be purged from the majority of the hydraulic system (except the cylinders).
2. Check all fittings for leaks while the cranes are idle.
3. Check the hydraulic oil tank level and refill to ¾ full.

Using the remote control, or alternatively the manual over-ride levers perform the following operations to one crane only:

a) Extend the Stabiliser Tilt cylinder a small amount (200-300mm).

b) Fully retract the Stabiliser Tilt cylinder. - Note there may be a small delay before this begins to move, due to trapped air in the cylinder.

c) Note - while commissioning, avoid holding pressure at the end of any cylinder travel, as high system pressure with aerated oil is not recommended for the Danfoss valves.

d) Extend the Stabiliser Extension cylinder a small amount.

e) Fully retract the Stabiliser Extension cylinder.

f) Fully extend and retract the Stabiliser Extension cylinder.

g) Fully extend and retract the Stabiliser Tilt cylinder.

h) Extend the Bottom Lift cylinder a small amount.

i) Fully retract the Bottom Lift cylinder.

j) Extend the Top Lift cylinder a small amount.

k) Fully retract the Top Lift cylinder.

l) Fully extend and retract the Top Lift cylinder.

m) Fully extend and retract the Bottom Lift cylinder.

The majority of trapped air should be removed from the cylinders by this point. The operation of the crane will now be steady.

1. Recheck the hydraulic oil level and refill to ¾ full with the first newly commissioned crane back in the stowed position.
2. Using the remote control, or alternatively the manual over-ride levers repeat operations a-m above with the second crane only.
3. With both cranes tested and stowed, recheck the hydraulic oil level and refill to the correct operating level (about 40mm from top of sight glass).

4. Recycle all eight cylinders to fully extended and retracted in any order.
5. Stow both cranes and shutdown the system for half an hour allowing the aerated oil in the tank to clear.

### Crane Test Procedure

1. All safety precautions must be strictly followed
2. Before beginning lifting place marker cones and signs around the site, giving a 2m perimeter beyond the Sidelifter and container to be lifted.
3. Ensure the vehicle's brakes are applied and working.
4. Keep non-involved people out of the testing area.
5. When the load is being lifted above the chassis, ensure that the offside area is clear of people.
6. During the lift do not:

   move between the test weight and the trailer.

   move under the weight.

   allow any other person within the marked areas.
7. The Steelbro cranes and control system have been calibrated and tested prior to despatch from our factory. This should ensure reliable operation providing there has been no damage in transit & installation and the electrical & hydraulic connections have been correctly made as per the appropriate schematics provided. The operation of the arms has been synchronised in low speed. If any of these operations are not in accordance with the manual please enquire for help from your local agent or supplier.
8. Before lifting any weights perform a “dry run” with both cranes. Follow the procedure outlined in the operator's manual for lifting a container off the ground without connecting the chains to the container. This will provide some confirmation that the control system is working correctly and show most leaks.
9. Ensure the weight of the container is no heavier than the rated capacity of your particular model.

Ensure the truck is correctly positioned alongside the container with the twistlocks aligned and approximately 300mm clearance between the container and the vehicle.

1. Follow the procedure as outlined in the operator's manual for lifting a container off the ground. Stop at intervals and observe that there is no movement of the arms or stabilisers.
2. Check for leaks

## Model Specific Details

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| **Crane Details:** | SB121 |
| Maximum lifting capacity: | 12000 kg |
| **PTO Details:** | |
| Oil tank volume: minimum | 150 l |
| Low pressure filter flow: | 230 l/min |
| Low pressure filter filtration (absolute): | 25 micron |
| Recommended pump system | Sunfab with bypass |
| Flow rate | 60 l/min |
| Pressure | 280 bar |
| Truck Governor | All range |
| **Hydraulic:** | |
| High pressure filter flow: | 120 l/min |
| High pressure filter filtration (absolute): | 10 micron |
| **Electrical:** | |
| Current Draw @ 12V (Standard Night Lights 2 lights) | 15 A |
| Current Draw @ 12V (Special Night Lights 6 lights) | 23 A |
| Control System voltage: | 12 or 24 V |
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