



STIS

Operating Instructions

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General Safety Information

1. Introduction

Dear Customer,

You have purchased a product that conforms to the latest state of the art. Please make sure to install, use and maintain it as detailed in these operating instructions to provide you with many years of reliable use.

The product as supplied meets all functional and quality requirements. In order to maintain its state and ensure risk-free operation, you as the fitter and / or user will need to read and understand these instructions.

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1.1. Copyright

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1.2. Intended use

The STIS is intended to be used for inflation and deflation of the tires of commercial vehicles or private expedition vehicles with compressed air supply from the vehicle compressor or a stationary compressor while the vehicle is stationary and, if necessary, with the engine running. Pneumatic tools may be operated additionally using the separate coupling connector on the control box. Any other use is not permitted and may cause damage to the product. Do not inflate any other items.

Components of the system may not be transported in an unsecured state in or on the vehicle. Do not modify the product. Always follow the safety instructions!

1.3. Disclaimer

Defects caused by failure to comply with these operating instructions will invalidate the warranty. ti.systems GmbH takes no responsibility for consequential damage incurred as a result.

2. Safety Instructions and Warnings

2.1. Basic safety instructions

- When carrying out work on the product, always secure the vehicle against rolling away or tipping over. Switch the engine off.
- When carrying out work on the product, always secure the product against unintentional restarting. If necessary, switch off the product and / or disconnect it from the power supply.
- Always ensure secure positioning of the product when carrying out work which cannot be performed from the ground. Use steps and grips or handles where available. If necessary, use suitable aids.
- The product, or its parts, are permanently or temporarily under pressure.
- Hoses or pipes which come uncoupled under pressure may whip and cause serious injury. When carrying out work on the product, always ensure that the product and its parts are not under pressure. If work without pressure is not possible, take the recommended safety precautions and wear the recommended personal protective equipment (PPE). Keep other people away from the danger zone.

- The operating controls of the product should be easy to access and allow operation without risk of contact with hot, sharpedged or moving parts.
- Always fit the product and /or components in such a way that the controls / indicators and safety information of the vehicle and /or other devices are not obstructed.
- The visibility range of the driver must not be obstructed by fitted system components.
- Before using the product, familiarise yourself with its features and operation. Always follow these operating instructions.
- Do not use this product to inflate or deflate tires that are not in good condition.
- When inflating tires always keep away from the danger zone. Always follow the safety instructions of the tire manufacturer.
- Always ensure that the tire pressure is within the minimum and maximum range permitted by the tire manufacturer taking account of the current wheel / axle loads and the expected driving speed of your vehicle.
- In case of additional stresses due to dynamic wheel / axle load shifts (e. g. when driving on inclines or slopes, heavy pulling, heavy accessory equipment), adjust the tire pressure in accordance with the manufacturer's instructions.
- Damaged parts may affect the operational safety of the product and / or cause serious injury and therefore must be immediately replaced with original parts.
- Never operate defect products and / or components.

2.2. Types and meaning of safety information

DANGER

DANGER indicates a risk that **WILL** result in serious injury or death if not observed.

WARNING

WARNING indicates a risk that **MAY** result in serious injury or death if not observed.

CAUTION

CAUTION indicates a risk that **MAY** cause minor injury.

NOTE

NOTE indicates a risk that **MAY** cause material damage or malfunctioning of the product, the vehicle or other equipment.

Some processes need to be carried out in several steps. Where any of these steps involves a risk, the safety advice is included directly in its instructions.

The safety advice always precedes the risky step and is printed in normal type using a signal word in bold and capitals.

Example:

1. NOTE: Please note this information. It warns of a risk involved in the next step.

2. Risky step.

Product description

The STIS comprises the central control box, hose depots for each wheel and plug nipples on the tire valves as well as connecting tubes from the control box to the hose depots and the air brake circuit.

The control box must be supplied with compressed air for tire inflation from the vehicle (brake system priority circuit).

Product safety Instructions and Warnings

The control box must be easy to access and operate without risk of contact with hot, sharp-edged or moving parts.

NOTE

Always replace damaged parts immediately.

DANGER

Do not operate defect components. Hoses or pipes which come uncoupled under pressure may whip and cause serious injury. Exercise caution when using pressure lines.

Installation

NOTE

Do not install lines with a tight radius to prevent excessive bending and resultant malfunctioning of the system. Avoid sharp edges, hot parts (exhaust manifold, etc.). Keep lines well away from moving parts (drive shaft, etc.).

When installing the hose depots to the wing, do not stretch the coiled hoses excessively to reach the tire valves. If the vehicle is used for navigation of wade, position the hose depots horizontally to prevent them from scooping water.

Fit the control box preferably in horizontal position to the underside of the housing using the preassembled vibration dampers.

The supply connection to the control box must be made in accordance with the vehicle manufacturer's instructions.

Operation / Use

1. Pre-setting the tire pressure

Open the stop cock on the control box if it is in closed position.



Turn the black knob to set the tire pressure. Turn left to reduce the pressure and right to increase the pressure. If the coiled hose is not connected, the gauge always shows the current pre-set pressure; this pressure is also applied in all coiled hoses of the hose depots.

NOTE

Do not attempt to set the inflation pressure with the coiled hoses connected. Due to the large line widths, the system pressure immediately drops to the current tire pressure resulting in insufficient counter pressure for pressure setting (above the current tire pressure).

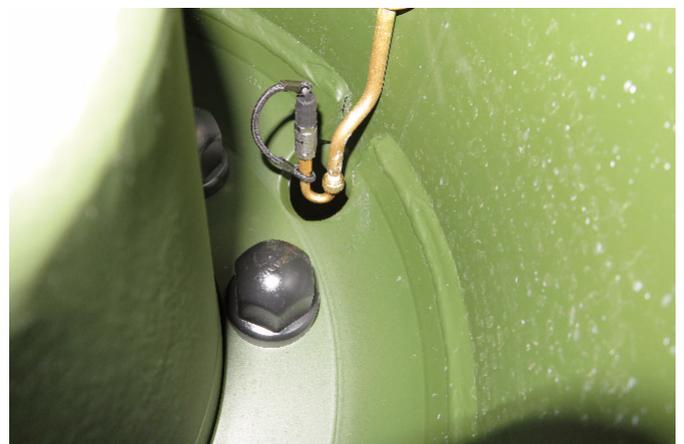


2. Opening the hose depots and connecting the coiled hoses to the tires

Unhook the snap hook to open the hose depot.



Pull the cap off the tire plug nipple valve.



Pull the coiled hose out of the hose depot and connect it to the tire plug valve.



Go round the vehicle and connect all coiled hoses to the tires in the same manner.



NOTE

When the coiled hose connector is connected to the tire valve, the release pin in the connector opens the plug nipple on the tire valve. The tire is now connected to the control box, which automatically starts the adjustment process.

The tire pressure is adjusted as follows: If the actual tire pressure is above the pre-set pressure, the control box deflates all tires down to the pre-set pressure. Conversely, the box inflates the tires until they have reached the pre-set pressure. If the tires have different pressures when the adjustment process is started, the control box adjusts all pressures to the same setting. See chapter 5 for different pressure settings by axle.

3. End of tire pressure adjustment

The end of tire pressure adjustment is indicated as follows:

- a) When deflating: During the deflation process, the gauge indicates the pre-set value by approximation; the loud discharge noise at the control box increasingly softens towards the end of the process. The end of pressure adjustment is reached once the hissing is barely audible. Slight counter-rotation of the pressure controller stops the hissing altogether.
- b) When inflating: When the coiled hoses are connected, the gauge display drops to the current tire pressure; it then continuously indicates the slowly rising pressure in all tires until the pre-set pressure – and the end of adjustment – is reached.

NOTE

The main control valve in the control box operates purely pneumatically and reduces its width towards the end of adjustment. This means that adjustment of the last 2/10 – 3/10 bar takes longer for larger tires, e. g. 24R21, than the rest of the adjustment process. At the same time, the controller for pressure setting works with a slight lead of around 2/10 bar. This means that counter-rotation at the end of the adjustment process tends to adjust the pressure precisely to the actual setting.

4. Storing the coiled hoses

All air flow to or from the tire stops when the control box has reached the pre-set pressure. The box now keeps the set pressure constant in all lines. Go around the vehicle now, disconnect all hoses letting them retract back into the stores and replace the caps of the stores and tires valves.



NOTE

If the coiled hoses are connected for longer periods in high outside temperatures in desert regions, the coil may not automatically retract back into the store, as the outside diameter will have marginally increased. In this case, twist the coil slightly in winding direction to return it into the hose depot.

It is generally recommended to close the stop cock again after the adjustment process to prevent any creeping air loss in the tire inflation system.



If the vehicle has previously been driven through muddy water, it is advisable to set the control pressure initially below the current tire pressure to activate the main control valve so it lets pressure off via the potentially soiled silencer and cleans the filter element.



5. Different pressure settings by axle

To set different pressures by axle, follow these two steps:

When inflating, first connect all vehicle tires and adjust them to the lower pressure to be set. Now disconnect all lines, store the hoses of the “finished” tires, pre-set the higher inflation pressure of the other tires and reconnect the coiled hoses to these tires.

When deflating, deflate all tires to the higher value, then disconnect the “finished” tires and store the hoses. Then pre-set the lower pressure on the control box for the remaining tires.

6. Conventional tire pressure check

The tire pressure can still be checked and adjusted in the conventional way by connecting the supplied adapter to the tire valve plug nipple.



7. External air supply

The supply connection on the control box has a compressed air connector for connection of pneumatic equipment (e.g. impact screwdrivers) or an external compressor. Always open the stop cock before use.



DANGER

This is always under full pressure from the air brake system!

Potential Faults and Troubleshooting

Tires do not inflate

- Pressure in the supply system is lower than the current tire pressure or too low to overflow the priority circuit of the brake system

fill brake air reservoir

- Stop cock closed
- Coiled hoses not properly connected to tire valves

open stop cock

connect properly

- Main control valve defect

replace valve in the workshop

- Pressure controller defect

replace controller in the workshop

Tires do not deflate

- Filter element of silencer excessively soiled
- Coiled hoses not properly connected to tire valves

clean up silencer

connect properly

- Main control valve defect

replace valve in the workshop

- Pressure controller defect

replace controller in the workshop

- Valve inserts still in tire valves

remove the inserts from the tire valves and mount ti.systems connectors properly

Disposal

If the system fails to work properly and can no longer be repaired, please dispose of the product in compliance with the applicable legal requirements.

Technical data

Maximum operating pressure: 12.5 bar

Adjustment range: 0.5 bar $p \leq 10$ bar

Thermal application range: -40°C – +70°C

Fording ability: yes