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SensoControl®

Operating Instruction
ServiceJunior

Please read carefully before use!

Contents

1 Introduction

The **ServiceJunior** is a digital manometer featuring a MIN/MAX display function.
Full scale (FS) accuracy is ± 0.5% based on the upper limit of the measurement range.
Dynamic pressure peaks are measured at a scanning rate of 10 ms (100 measurement values/second). The MIN/Max memory is continuously updated and rewritten.

1.1 Notes on safety/production selection

The correct functioning of the **ServiceJunior** can only be guaranteed when the specifications detailed in these operation instructions are adhered to.
In particular, specifications relating to the permitted upper limit of the measurement range as well as the permissible temperature range must be observed.

Serious malfunctions leading to personal injury or damage to property can result from using the chosen product in applications that do not comply with the specifications or from disregarding the operating instructions.
In particular, incorrect mounting of the manometer and the corresponding adapter can cause the manometer to be torn.

For repairs or calibration of the measurement instruments, please contact a Parker sales branch.

1.2 Device versions and range of delivery

Device versions/ Range of delivery		
Basic setting to unit **"bar"** Pressure port ½" BSPP (pressure gauge) Delivery includes rubber protection 2 x batteries 1,5 VDC (Mignon)		
Range		
-1,00…+16,00 bar	0…60,0 bar	0…400,0 bar

2 Commissioning

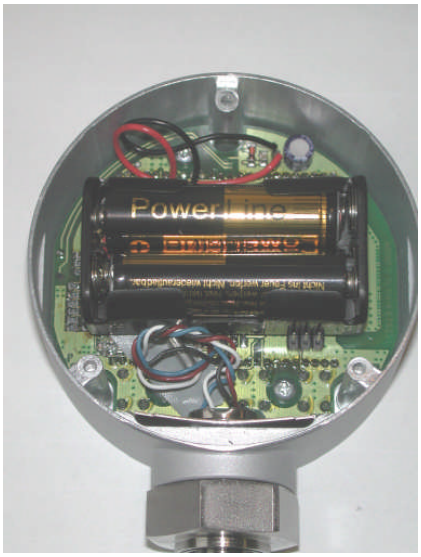
The **ServiceJunior** is supplied with batteries fitted. The device is operational as soon as it is turned on.

2.1 Replacing the batteries

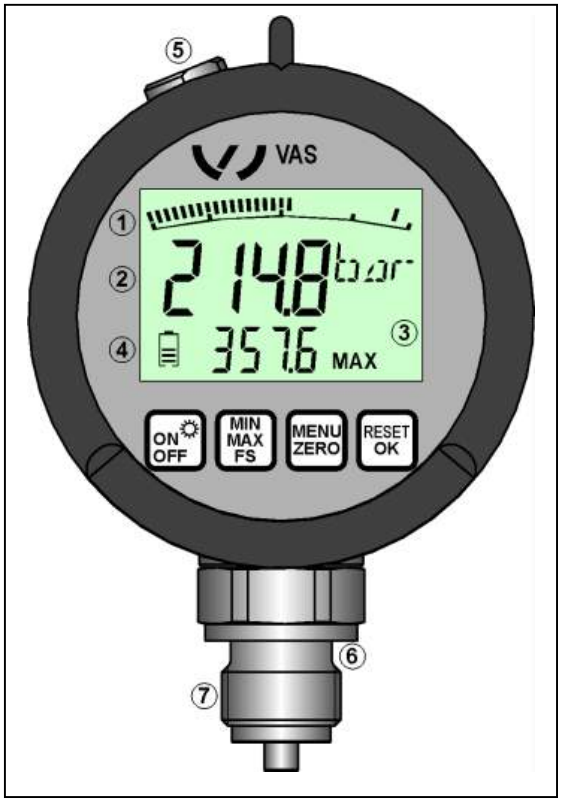
Caution!
Turn off the device before replacing the batteries. Open the battery compartment. Insert the new batteries as depicted. Ensure correct polarity of the batteries.

Batteries: 2 x 1.5 V (LR6 - AA)

When in continuous operation (without light), the service life of the batteries is 1,500 hours. A battery symbol permanently displays the actual battery status.



3 Functions and keys



Display

- 4 ½ digit LCD with back light function
- Displays measurement values and menu functions

① 'bar graph' with peak & hold function
② Actual value display (15 mm)
③ MIN/MAX or Full Scale (FS) (8 mm)
④ Battery status
⑤ Analogue output
⑥ ED sealing
⑦ Pressure port

Keys

Key		Function
ON OFF	**ON/OFF** ☼	Turns the device on/off. Press 2 s Turns on the back light function (stays on for 30 s)
MIN MAX FS	**MIN** **MAX** **FS**	Selects display unit: MIN/MAX or FS Minimum value Pressure peak Displays the upper limit of the scale (e.g. 400 bar)
MENU ZERO	**MENU** **ZERO**	Press for 2 sec. Changes the unit. Auto Power Off – on/off. Zero point calibration.
RESET OK	**RESET** **OK**	Erases MIN and MAX values from the memory Confirms the MENU functions

3.1 Display Mode

The actual pressure (ACT) is indicated in the display mode. The ACT measured value is displayed in the corresponding unit. The MIN, MAX or FS values is indicated in the lower part of the display.

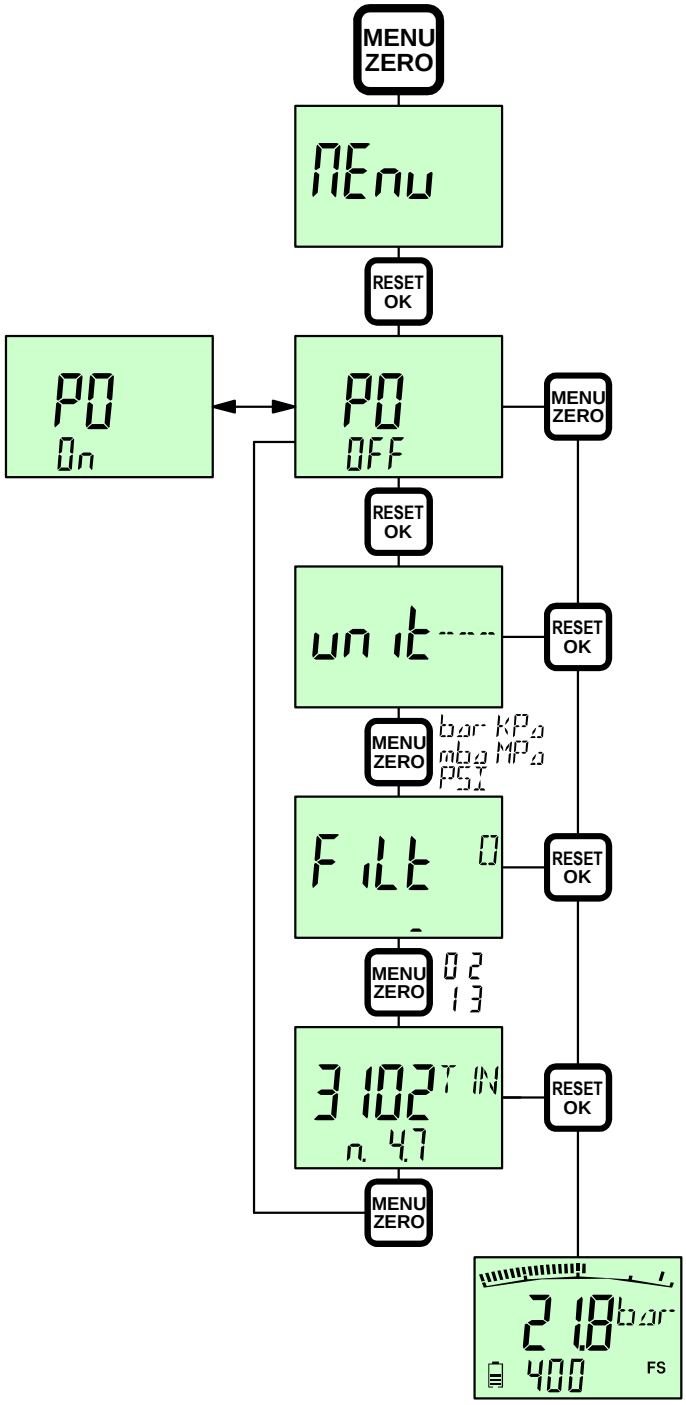
Display	Description
bar-graph	Graphic indication of the actual pressure. A pressure peak is indicated by means of a pixel (graduation mark). The indicated value is refreshed at intervals of 50 ms (20 measurements/sec).
ACT	Indicates the actual pressure. The indicated value is refreshed at intervals of 300 ms (3 times/sec).
MIN/MAX	Indicates the MIN, MAX or FS value according to setting. The indicated value is refreshed at intervals of 300 ms (3 times/sec).
FS	Upper limit of the scale (e.g. 400 bar)
Units	Indicates the chosen unit
Battery	Indicates battery status (5 segments)
x10	Indicated value (actual indication and MIN/MAX indication) x10.

3.2 Menu Functions

Following set ups can be done within the MENU Function:

- Automatic switch off enable/disabled
- Selection of engineering units (bar/mbar/PSI/kPa/MPa)

By pressing the MENU key (2 s) the desired function appears. Skip to next function by pressing MENU again. Confirmation by pressing the “OK“ key.
The **ServiceJunior** returns into the display mode.



4 Connection to the hydraulics

According to the VAS test kits, the ServiceJunior comes with a male ½" BSP pressure gauge port (hex size = 27 mm). It is made out of stainless steel and will be sealed by an ED sealing ring. In combination with the recommended sealing type the pressure port is compatible with following fluids/ media:

Fluid/ Media	Sealing
Diesel	NBR/FKM (Viton®)
Gasoline	FKM (Viton®)
Hydraulic-Oil	NBR/FKM (Viton®)
Air (4bar)	NBR/FKM (Viton®)

Observe specified torques when fitting the ServiceJunior

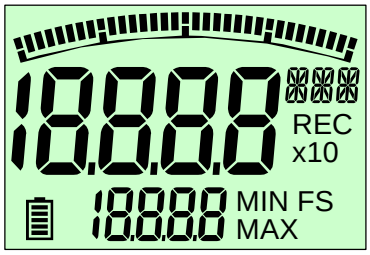
The hex size of the pressure connection is 27 mm	
Pressure port	Torque
½"BSPP pressure gauge	35 Nm

When fitting directly, please ensure the **ServiceJunior** can be rotated freely.

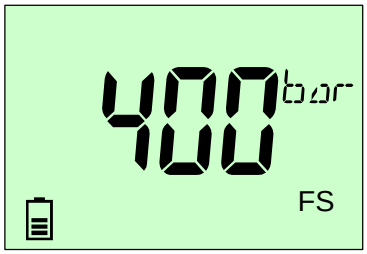
5 Operating the ServiceJunior

5.1 Turning on (ON)

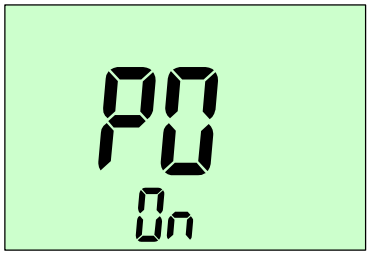
Press



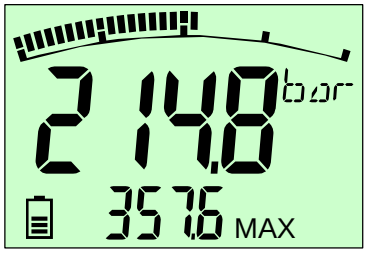
Self test running



Indication of full-scale range (FS)
Unit (**bar**) SCJN-xxx-01
Unit (**PSI**) SCJR-xxx-02



Auto Power Off function is active.
Power Off activates automatically switch off after 5 min.
This function can be altered in **MENU**.



Display mode.
ACT value displayed
MAX peak

5.2 Turn off (OFF)

Press once (briefly)

5.3 Turn on back light

Press the key (2 s)

The back light illumination will be switched off after 30 s.

5.4 MIN/MAX Display

The additional display line can be switched to MIN/MAX or FS format.
The scroll function indicates MIN/MAX after the other.

To measure pressure peaks the MIN/MAX Function is in use. The MIN/MAX memory saves the highest (MAX) and the lowest (MIN) reading. Switching off the instrument, the MIN/MAX memory will be erased.
When running different pressure tests one after another, the MIN/MAX memory should be deleted (**RESET**) after every test cycle.

MIN/MAX and FS value is indicated in the display

5.5 FS Full Scale Display

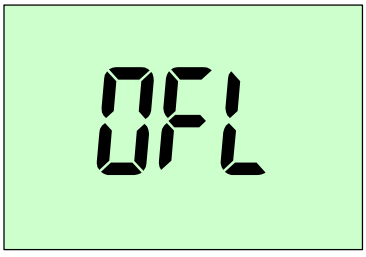
Displaying the upper limit of the scale (FS) is designed to increase readability of the bar-graph function. The upper limit of the measurement range is indicated numerically.
FS is indicated in sequence after MIN and MAX.

FS value is indicated in the display

5.6 Erasing the MIN/MAX values

Erases MIN/MAX values

5.7 OFL Display



This indicates that the applied pressure is outside given full scale range.

If the message will remain displayed, while the **ServiceJunior** is pressure less, please consult a Parker Hannifin Sales Office.

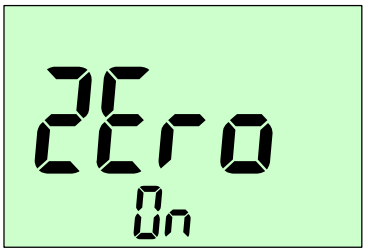
5.8 Zero Point correction (ZERO)

The zero point can be corrected manually should undesired deviations occur when no system pressure is being applied (atmospheric pressure).

The zero point correction sets the current ACT value to zero. In order exclude erroneous measurements, ensure **no system pressure** is being applied when carrying out this function.

MENU
ZERO

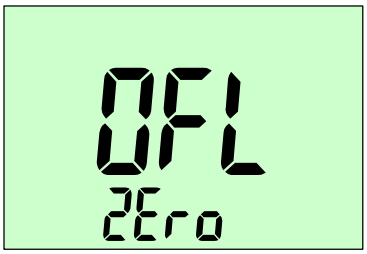
Press ZERO key (briefly)



RESET
OK

This initiates the zero point correction. The **ACT** (actual) value is indicated in the display as 0.0 bar.
The correction remains active until the device is turned off.

OFL/ZEro are displayed for 3 seconds if the measured pressure (0 bar) is greater than 5% of the measurement range.



Zero point correction cannot be carried out.
Please ensure that **no system pressure** is being applied.

5.9 Resetting the zero point correction

ON
OFF

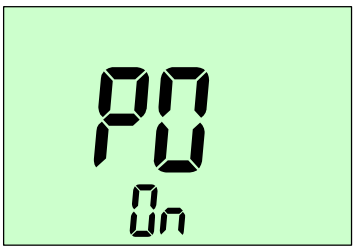
Turn off the device. Zero point correction is no longer active when the device is turned off and on again.

5.10 Automatic Power Off

MENU ZERO Press for 2 s

Depending on the device configuration, two different displays are possible:

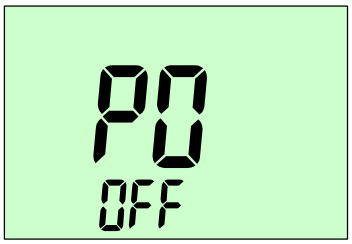
Auto Power Off



PO On

When RESET OK is pressed, the Auto Power Off is enabled.
The device will switch off after 5 min.

Continuous operations



PO OFF

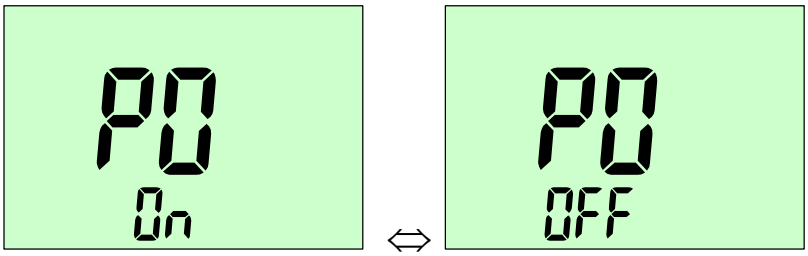
When RESET OK is pressed, the device must be turned off manually.

The settings Auto Power Off or Continuous operations remain stored and are active when the device is turned off and on again.

5.11 Changing the Unit

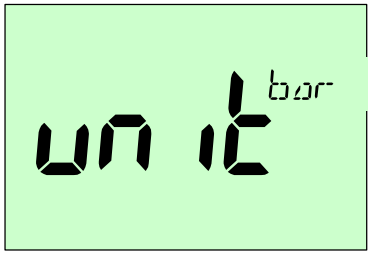
MENU ZERO

Press for 2 s



MENU ZERO

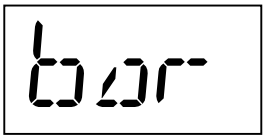
Press to skip

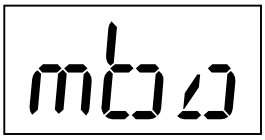


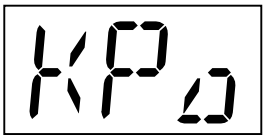
MENU ZERO Press once (briefly)

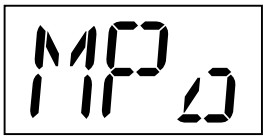
The next unit is indicated.

RESET OK Confirm unit selection



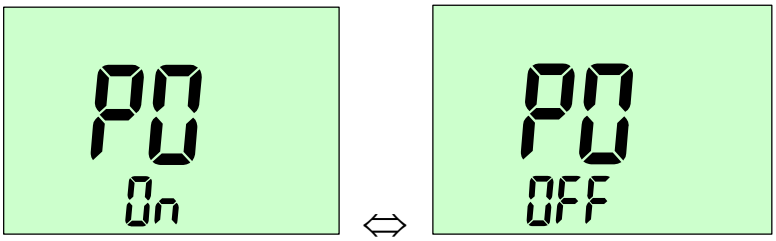




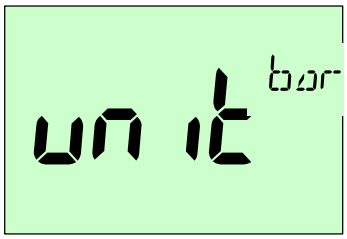


5.12 Filter Settings

MENU ZERO Press 2 s

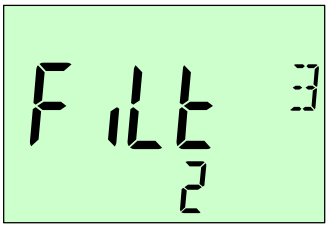


MENU ZERO Press



MENU ZERO Press

The filter function will smooth the actual read out shown on the display.
Following setup can be done:
Initially, the actual setting will be displayed:



MENU ZERO Press once (briefly)

Filter selection is indicated.

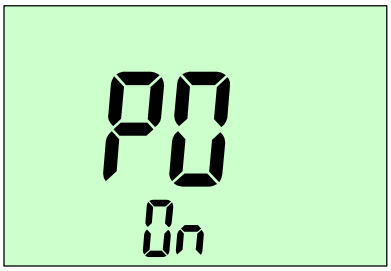
RESET OK Confirm filter configuration

0 = No Filter function 1 = Filter Level 1 2 = Filter Level 2 3 = Filter Level 3

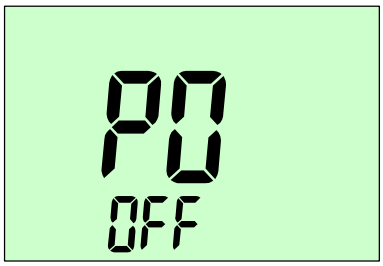
5.13 Display Serial Number

MENU ZERO

Press 2sec.

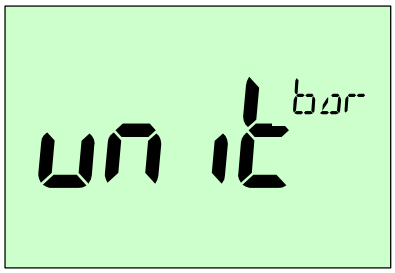


⇔



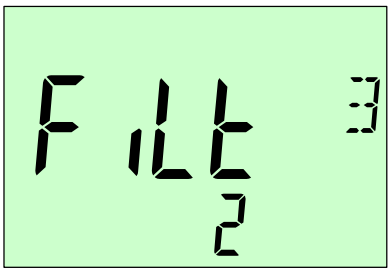
MENU ZERO

Press



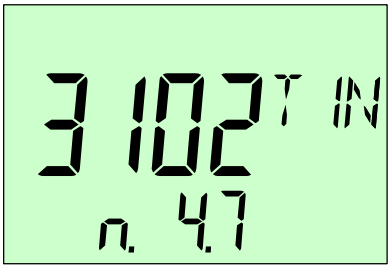
MENU ZERO

Press



MENU ZERO

Press



Display of serial number (1. line)
Display of software version (2. line)

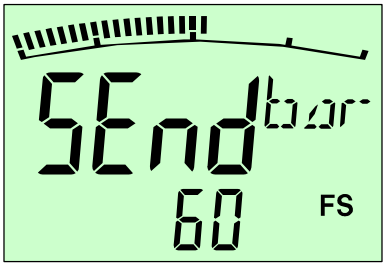
RESET OK

Press

5.14 Connect with VAS Tester

When the ServiceJunior is connected to the VAS tester, the actual display will be switched off. The bar-graph indicator is still in operation.

The described filter function (5.11) is not active now and need to be set up at the VAS tester device. Following display appears:



6 Technical Data

<table>
<tr><td>Version</td><td>Digital pressure gauge with ACT - MIN and MAX Display
bar graph display (33 segments) with peak and hold function
4 ½ digit LC display (15 mm) with back light illumination
Battery powered with low power electronic system
Life time cycle 1,500 h (No back light function)
Pressure port stainless steel 1.4404
½” BSPP ISO 1179-2 (pressure port gauge EN837)</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Input</td><td>Ceramic Sensor Cell (relative -1 ... 16 bar)
Strain Gauge Cell (relative 0 ... 60/0 … 400 bar)
Scan rate 10 ms
Class: 0,5
Resolution 12 bit = 4,096 steps</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Housing</td><td>Ø = 79 mm; T = 33 mm
Zinc Die Cast with Rubber Protection TPE</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Weight</td><td>540 g</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Parts in contact with media Sensor Cell</td><td>Stainless Steel 1.4534/1.4404/Ceramic/NBR (-1…+16 bar)
Stainless Steel 1.4534/1.4404/FKM (Viton®) (0...60/0…400 bar)</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Suitable fluids/media</td><td>
<table>
<tr><td>Media/Sealing</td><td>NBR</td><td>FKM (Viton®)</td></tr>
<tr><td>Patrol</td><td></td><td>×</td></tr>
<tr><td>Diesel</td><td>×</td><td>×</td></tr>
<tr><td>Water</td><td>×</td><td></td></tr>
<tr><td>Air (up to 16 bar)
(no oxygene)</td><td>×</td><td>×</td></tr>
<tr><td>Hydraulic oils</td><td>×</td><td>×</td></tr>
<tr><td>ATF oils</td><td>×</td><td>×</td></tr>
</table>
</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Power supply</td><td>Battery 2 x1,5 VDC (LR6 –AA) Alkaline (Mignon)</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Ambient conditions</td><td>
<table>
<tr><td>Operating temperature</td><td>-10…+50 °C</td></tr>
<tr><td>Fluid temperature</td><td>-20…+80°C</td></tr>
<tr><td>Storage temperature</td><td>-20…+60°C</td></tr>
<tr><td>Rel. humidity</td><td>< 85%</td></tr>
<tr><td>Protection</td><td>EN 60529 (IP 65)</td></tr>
<tr><td>Vibration</td><td>IEC 60068-2-6 5g</td></tr>
<tr><td>Shock</td><td>IEC 60068-2-27 25g</td></tr>
<tr><td>Reliability Cycles (10^6)</td><td>100</td></tr>
</table>
</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Connect with VAS tester</td><td>Via analogue output with connecting cable</td></tr>
</table>

Digital Pressure Gauge ServiceJunior

VAS	Measuring range	Overload-pressure P_{max}	Burst-pressure	Step	Tolerance (± absolute)		Sealing
					typ.	max.	
6551	-1,00…16,0 bar	32 bar	48 bar	10 mbar	± 40 mbar	± 80 mbar	NBR
6330, 6550	0…60,0 bar	120 bar	500 bar	0,1 bar	± 0,15 bar	± 0,3 bar	FKM (Viton®)
6394	0…400,0 bar	800 bar	1.700 bar	0,1 bar	± 1,0 bar	± 2,0 bar	FKM (Viton®)

Burst pressures related to tests without assembled adapters.
Exceeding the maximum overload values (P_{max}) may lead to malfunctions and may even destroy the **ServiceJunior**.

The **ServiceJunior** meets the guidelines of the European Community (EU).
It is confirmed that this product is approved acc. to following standards:

CE

DIN / EN 61000-6-2
DIN / EN 61000-6-3

Technical subject to change February 2010