SES/SEM series
High-performance automatic screwdrivers with automatic feeding

Our high-performance SES/SEM series automatic screwdrivers enjoy intelligent functions that provide you with clear-cut benefits: the entire screwing unit does not move thanks to the integrated stroke movements, just the screwdriver tool moves up and down. This preserves the drive and sensors. The unit is designed for extremely high cycle times, since only small masses are moved. The screwdriver units can be used for all screwing positions and are therefore just as suited to stationary use as they are for operation on positioning systems and robots, in rotary table and transfer systems. The system recognizes errors and issues a NOK message. The connecting element is discharged at the same time so that the automatic screwing process is not interrupted.

THE ADVANTAGES AT ONE GLANCE:

+ Slim design, also suitable for narrow screwdriver spacings
+ Drive-preserving functionality thanks to the integrated lifting movements for a long service life
+ Sensor system is not moved due to the integrated stroke movement and thereby preserved
+ Tool change in 10 seconds without the need for additional tools
+ Quality enhancement due to verifiability of the screw connection
+ Virtually maintenance-free systems
+ Documentation of the tightening results
+ Bit stroke freely adjustable, nose piece is retained shortly before coming into contact with the component, thus avoiding damages to the component
+ Monitoring of the screw-in depth, torque and angle of rotation
+ Free selection of the drive: pneumatic, electric, with torque transducer etc.
## Automatic screwdrivers for screws

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>SES 1601</th>
<th>SES 2001</th>
<th>SES 2501</th>
<th>SES 3201</th>
<th>SEV 2001</th>
<th>SEV 2501</th>
<th>SEV 3201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw head Ø max.</td>
<td>7*</td>
<td>11*</td>
<td>15*</td>
<td>24*</td>
<td>10*</td>
<td>14*</td>
<td>23*</td>
</tr>
<tr>
<td>Screw size</td>
<td>M2 – M4*</td>
<td>M2 – M5*</td>
<td>M4 – M6*</td>
<td>M5 – M10*</td>
<td>M2 – M5*</td>
<td>M4 – M6*</td>
<td>M5 – M10*</td>
</tr>
<tr>
<td>Torque (Nm)</td>
<td>0.03–1.6</td>
<td>0.2–4.5</td>
<td>0.5–12</td>
<td>1.0–45</td>
<td>0.2–4.5</td>
<td>0.5–12</td>
<td>1.0–45</td>
</tr>
<tr>
<td>Feed stroke (mm);</td>
<td>15 or 30</td>
<td>25 or 50</td>
<td>35 or 70</td>
<td>50 or 100</td>
<td>approx. 80</td>
<td>approx. 80</td>
<td>approx. 80</td>
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<tr>
<td>depending on model</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vacuum version</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>A (mm)</td>
<td>25</td>
<td>30</td>
<td>38</td>
<td>50</td>
<td>56</td>
<td>62</td>
<td>72</td>
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<tr>
<td>B (mm)</td>
<td>42</td>
<td>58</td>
<td>68</td>
<td>86</td>
<td>80</td>
<td>95</td>
<td>110</td>
</tr>
<tr>
<td>C (mm)</td>
<td>55</td>
<td>73</td>
<td>87</td>
<td>111</td>
<td>97</td>
<td>114</td>
<td>135</td>
</tr>
</tbody>
</table>

* Standard; other sizes possible

### Modules

**SES**

1. Drive
2. Feedback indicator
3. Depth sensor
4. Clamping surface
5. Bit stroke setting
6. Feedback indicator, feed head
7. Locking pin for tool change
8. Feed head, adjustable
9. Feed tube
10. Feed arm
11. Nose piece
12. Screw loading control
13. Torque sensor

**SEV (Vacuum version)**

1. Drive
2. Feedback indicator
3. Depth sensor
4. Clamping surface
5. Stroke, suction pipe / insertion tool
6. Feed head
7. Locking pin for tool change
8. Vacuum connection
9. Feed tube
10. Feed arm
11. Nose piece
12. Torque sensor
Automatic nutrunners

Technical data

<table>
<thead>
<tr>
<th></th>
<th>SMZ 32</th>
<th>SEM-V 1601</th>
<th>SEM-V 2001</th>
<th>SEM-V 2501</th>
<th>SEM-V 3201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nut size (max.)</td>
<td>M8*</td>
<td>M4</td>
<td>M6</td>
<td>M8</td>
<td>M12</td>
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<tr>
<td>Torque (Nm)</td>
<td>1.0 – 45</td>
<td>0.03 – 1.6</td>
<td>0.2 – 4.5</td>
<td>0.5 – 12</td>
<td>1.0 – 45</td>
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<tr>
<td>Vacuum version</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Controlled centring needle</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
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<tr>
<td>Overstroke (mm)</td>
<td>50</td>
<td>approx. 40-60</td>
<td>approx. 60</td>
<td>approx. 80</td>
<td>approx. 100</td>
</tr>
<tr>
<td>A (mm)</td>
<td>50</td>
<td>25</td>
<td>30</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>B (mm)</td>
<td>82</td>
<td>42</td>
<td>58</td>
<td>68</td>
<td>86</td>
</tr>
<tr>
<td>C (mm)</td>
<td>189</td>
<td>55</td>
<td>73</td>
<td>87</td>
<td>111</td>
</tr>
</tbody>
</table>

* Standard; other sizes possible

Modules

SMZ 32 (with controlled centring needle)

1. Drive
2. Feedback indicator centring needle
3. End bearing, centring needle
4. Stroke adjustment, centring needle
5. Feedback indicator, home position
6. Depth sensor
7. Clamping surface
8. Clamp ring for position of the screw set
9. Nose piece
10. Feed tube
11. Nut module
12. Toothed belt drive
13. Torque sensor

SEM-V (Vacuum version)

1. Drive
2. Feedback indicator
3. Depth sensor
4. Clamping surface
5. Clamp ring for position of the screw set
6. Nose piece
7. Feed tube
8. Nut module
9. Vacuum connection
10. Torque sensor
Interfering edges
Interfering edges are single- or multi-sided contours or super-structures, which are found at the screw location or in close proximity (20 mm diameter and up to 1,000 mm in height). If you are not sure as to whether your component is designed for automated handling, we will be happy to help you in customizing the screw location.

Vacuum module function
The screwdriver tool is enclosed by a tube in which a vacuum is generated. It retains the screw and facilitates depositing at the screw location. The screwdriver tool extends and screws in the screw. The space requirement around the screw location is reduced significantly since the diameter of the tube is only approx. 1-2 mm larger than the screw head diameter.

User-friendly maintenance

+ Feed arm detachable without tools, important to eliminate interference with deformed screws
+ Simple adjustment of the depth sensor with adjusting wheel

Tool change in under 10 seconds
1. Push the protection cap downwards
2. Release quick fastener
3. Swivel out feed stroke
4. Replace tool

Controller
Depending on the requirement and selection of the drive, all conventional control parameters can be queried and evaluated, such as the torque, screw-in or rotational angle, torque threshold. All values can be saved and documented permanently via a PC software. This facilitates extensive evaluations as well as a PCA (process capability analysis) of the system. We would be happy to assist you in creating a MCA (machine capability analysis).

Drive
+ Open drive concept
+ All brands possible
+ Optionally with angle drive for reducing the space requirement
+ With or without torque transducer and rotational angle measurement

Vacuum data of all models are available under www.stoeger.com/en/downloads.html under file “automatic screwdrivers”

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