EASy Reference Guide
S38SX

The EASy system monitors the position of the placing boom and outriggers. If the machine senses a problem it will display a warning message on the Vector panel and sound the horn. It is important to follow the instructions on the screen. Most warning messages can be acknowledged with the QUIT and CLEAR buttons. Once a message is acknowledged, operation of the placing boom can be continued. Reference your operation manual for a complete list of fault messages.

Safety Shutdown Fault
If you receive a serious fault that effects the safe operation of the machine, the placing boom will stop, remote box will be disabled and the horn will sound. The message !Safety Shutdown! is displayed and the machine is placed in E-Stop mode. Clear the E-stop and immediately fold up the placing boom in accordance to the Emergency Operation procedure in your operational manual.

EASy Setup - Outrigger moves

When setting up the machine, ensure that after the front outriggers are extended, you secure them with the outrigger lock.

While pumping concrete, it is possible for the outriggers to move slightly and trip the stabilization sensor. When this happens you will receive the following message on the Vector panel, "Check outriggers !." To remedy this fault, you can either reposition the outrigger or bypass the outrigger sensor.

Reposition outrigger
Put the concrete pump in the neutral position. Place the local/remote switch in the local position. Ensure that all personal are clear of the machine. Press the outrigger button while activating the outrigger handle. Extend
the outrigger into proper setup position. The warning message will go away and you can resume pumping concrete.

**Bypass Outrigger Sensors**

If you don't want to reposition the outrigger, press the CLEAR button as instructed on the screen. The warning message will go away and the outrigger sensors will be bypassed - meaning the machine will no longer monitor the position of the outriggers. The placing boom will still be limited to the selected working range.

If you bypass the outrigger sensors, you are responsible for maintaining the setup of your machine, ensure the outriggers are not moved until the after boom is folded up and placed in the cradle.

If you try and move the boom with the "Check outriggers!" warning message displayed, you will receive another fault message "! Machine Safety Stop! Machine not correctly stabilized!" A horn will sound and the boom will stop moving. To continue moving the boom press the QUIT button once. The warning horn will shut-off, but the message will still appear. Press the QUIT button again to clear the fault message. The boom can now be operated normally.

**Temporary Truck Shutdown.**

At times you may want to setup the machine and then shut the truck off while you wait for concrete.

With the machine properly setup, shut the truck engine off. When you are ready to resume, turn the truck engine back on. The Vector control panel will power up. You will receive the following warning "! Machine Safety Stop! Boom is Not in Cradle!" Press the QUIT button once to silence the horn, press the QUIT button again to clear the fault message.

The next message to appear is "Is the unit supported by all outriggers?" Since we have already properly set up the machine, all we have to do is press the outrigger buttons on both sides of the unit for 5 seconds - or until you hear the horn beep. The machine is now ready to operate.
Setup Tip
Extending Outriggers - EASy 180/200
We recommend when setting up in EASy 180/200 mode, to extend the outriggers and lower the feet on the working side first. When the working side outriggers are fully extended, secure the front outrigger with the outrigger lock.

Figure 3
Fully extend outriggers on the working side

Extend the front outrigger on the non-working side until you hear the horn beep twice. Lower the outrigger feet and level to within 3 degrees.

Figure 4
Front outrigger extended on the non-working side

NOTE: Extend the outriggers as much as possible on the non-working side, even if it's a couple of feet, it will add to the stability of the machine.
Unfolding the Boom

Before unfolding boom section 4 (joint D), boom section 5 (joint E) must be opened at least 40°, to avoid a collision between boom sections 3 and 5. Please refer to “Boom unfolding procedure” on page 5 to properly unfold the boom.

⚠️ WARNING Observe the placing boom constantly and avoid contact with obstructions.

Figure 5
Observe the boom at all times to avoid collisions

Boom Joints

Figure 6
Location of boom joints

<table>
<thead>
<tr>
<th>Joint E</th>
<th>Joint D</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>✗</td>
</tr>
<tr>
<td>40°</td>
<td>✗</td>
</tr>
<tr>
<td>41°</td>
<td>✓</td>
</tr>
<tr>
<td>&lt; 40°</td>
<td></td>
</tr>
<tr>
<td>&gt; 150°</td>
<td></td>
</tr>
<tr>
<td>&gt; 150°</td>
<td></td>
</tr>
</tbody>
</table>

Joint “D” dependence on joint “E”
The boom sensor system will not allow joint D to be moved until joint E has been opened 41°.

If you attempt to move joint D before joint E is opened of ≥ 41°, the horn will sound and a warning will be displayed on the radio remote.

Figure 7
Joint E opened 41°, Joint D allowed to move.

Joint “E” dependence on joint “D”
The boom sensor system prevents boom joint “E” from opening less than an angle of 40° as long as boom joint “D” has an opening angle of < 150°.

If joint "D" has an opening angle of > 150°or boom section 3 is in full contact with section 4, joint “E” can be folded together at an angle of less than 40°.

Figure 8
E - unlocked
E - locked
Boom unfolding procedure
To properly unfold the boom, follow these steps:

1. Raise boom section 1

*Figure 9*
Raise boom section 1

*Figure 10*
Slew boom into the working area

*Figure 11*
Fold out boom section 2

*Figure 12*
Fold out boom section 3

*Figure 13*
Fold out boom section 5 a minimum of 40°

*Figure 14*
With boom section 5 unfolded greater than 40°, joint D is unlocked and can be unfolded.
Calculating the Outrigger Load

After you find an appropriate spot to set up the unit, you must provide a stable base for the outriggers. If the site you have chosen does not have stable soil conditions, select a different site. Under no circumstances should you compromise the stability of the unit by setting up on unstable soil.

The following chart can be used as a guideline to help you determine the load-bearing capacity of various soil types. If you do not know what type of soil is on your job site, the site manager may be able to tell you.

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin ground</td>
<td>22</td>
</tr>
<tr>
<td>Asphalt</td>
<td>29</td>
</tr>
<tr>
<td>Compressed, crushed stone</td>
<td>36</td>
</tr>
<tr>
<td>Clay/silt soil, firm</td>
<td>43</td>
</tr>
<tr>
<td>Mixed granular soil</td>
<td>51</td>
</tr>
<tr>
<td>Firm, compacted gravel</td>
<td>58</td>
</tr>
<tr>
<td>Firm, compacted gravel (more compacted)</td>
<td>72</td>
</tr>
<tr>
<td>Firm, compacted gravel (more compacted, class V)</td>
<td>109</td>
</tr>
<tr>
<td>Brittle, weathered rock</td>
<td>145</td>
</tr>
</tbody>
</table>

To determine the load your outriggers will impose on the soil, divide the total force of the outrigger (shown on a decal on the outrigger leg) by the number of square inches of soil contact:

\[
\text{Soil pressure (PSI)} = \frac{\text{total outrigger force (lbs)}}{\text{area of soil contact (sq. in.)}}
\]

\[
\frac{43,800 \text{ (lbs)}}{70 \text{ (sq. in.)}} = 626 \text{ (PSI)}
\]

As you can see from the Soil Type chart, the steel pads are not big enough to be used by themselves on any of the soil types listed. This is why the unit comes equipped with dunnage pads. The pads are approximately 24” by 24” (576 sq in.). Now divide the maximum force of 43,800 by 576:

\[
\frac{43,800 \text{ (lbs)}}{576 \text{ (sq. in.)}} = 76 \text{ (PSI)}
\]

The pressure of 76 PSI is suitable for firm, compacted gravel (more compacted, class V). If you had to set up on virgin ground, asphalt, or one of the other soil types listed, you would need to use additional cribbing.

Figure 15
Outrigger load decal (located on outrigger leg)

Figure 16
Dunnage Pads provided with unit.
How to calculate cribbing needs

Cribbing requirements for setting up on Asphalt with a 43,800 pound outrigger load.

We have already calculated the pressure being exerted by the dunnage pad alone is 76 PSI (dividing 43,800 by 576 the size of the dunnage pad in square inches.)

76 PSI exceeds the capacity of the asphalt, which is 29 PSI, the outrigger would sink.

Cribbing must be used to increase the surface area over which the force is applied. To determine the dimensions “A” of the cribbing required, divide the Total Force (43,800) by the soil capacity (29).

\[
\frac{43,800 \text{ (lbs)}}{29 \text{ (PSI)}} = 1510 \text{ (sq. in.)}
\]

The result (1510) is the surface area, expressed in square inches, required to support the outrigger. Consult the table below and select a cribbing size slightly larger than required. In this example, we recommend a Cribbing size of 40” X 40” (1600 sq. in.).

<table>
<thead>
<tr>
<th>Square inch surface required</th>
<th>Dimension “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>20 x 20</td>
</tr>
<tr>
<td>625</td>
<td>25 x 25</td>
</tr>
<tr>
<td>900</td>
<td>30 x 30</td>
</tr>
<tr>
<td>1225</td>
<td>35 x 35</td>
</tr>
<tr>
<td>1600</td>
<td>40 x 40</td>
</tr>
<tr>
<td>2025</td>
<td>45 x 45</td>
</tr>
<tr>
<td>2500</td>
<td>50 x 50</td>
</tr>
</tbody>
</table>

You can also take the square root of 1510, which is 38.8. Rounding up to 40, we would need 40” x 40” of cribbing to support the weight of the outrigger. If we use 10 pieces of 4 x 4 timbers (actual width of 3.5” square) measuring 40” long we get the following:

4” square timber X 10 pieces = 40 sq. in.

40 sq. in. X 40” long timbers = 1600 sq. in.

1600 sq. in. would be just enough cribbing to support the outrigger on asphalt.

The same procedure can be used for any soil surface, just be sure to use the correct soil capacity pressure capacity.