

## 12.2.4 Replacing sensors S1, S2, S3 and S4

### 12.2.4.1 Wiring of sensors in ISO 30 versions

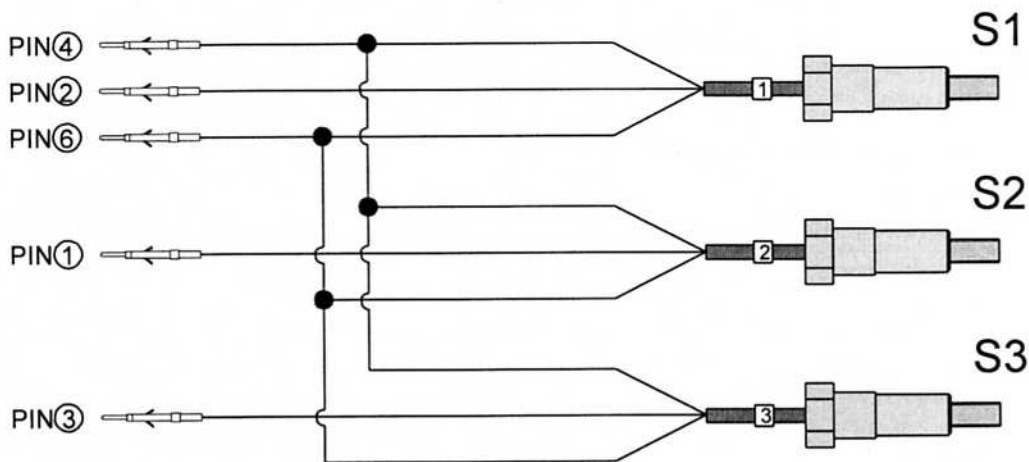


Figure 12.12 Connection of sensors in ISO 30 electro-spindles to the pins of the signals connector (see section 9.6.2)

### 12.2.4.2 Wiring of sensors in HSK versions

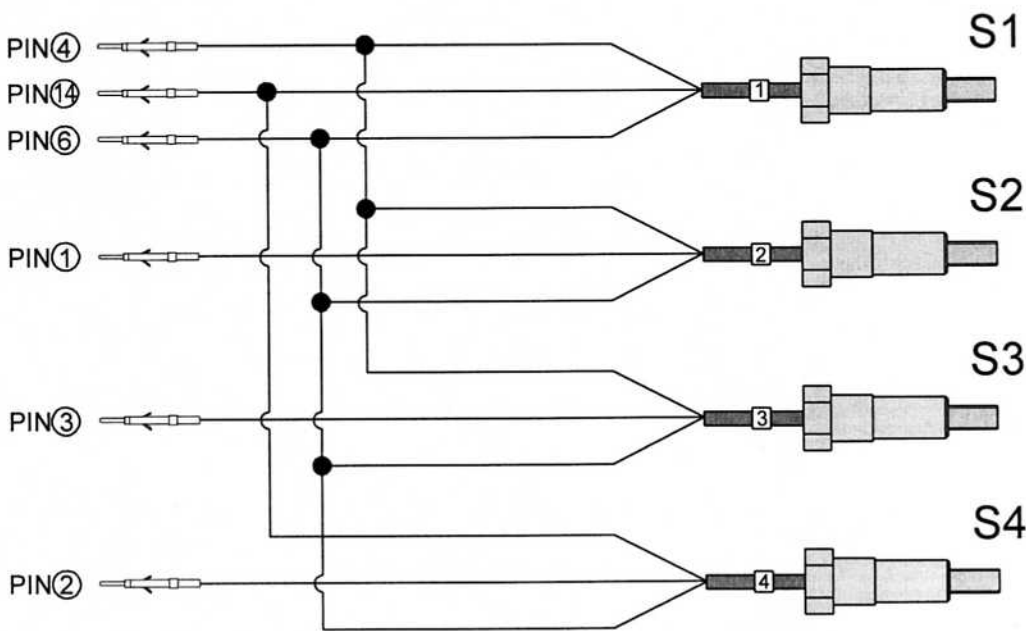


Figure 12.13 Connection of sensors in HSK electro-spindles to the pins of the signals connector (see section 9.6.3)



**NOTE FOR HSK VERSIONS:** The output to pin "14" must not be used for machine control purposes, but only to identify which sensor in the <S1+S4> set is faulty in case of malfunction, and to calibrate sensor S1 as instructed in sections 12.2.4.8 and 12.2.4.10 .

**12.2.4.3 Accessing the sensors**

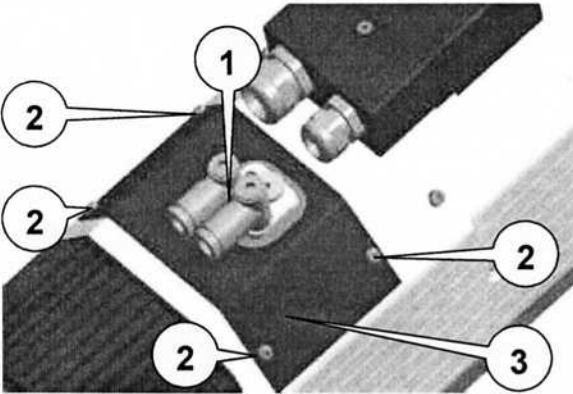


Figure 12.14

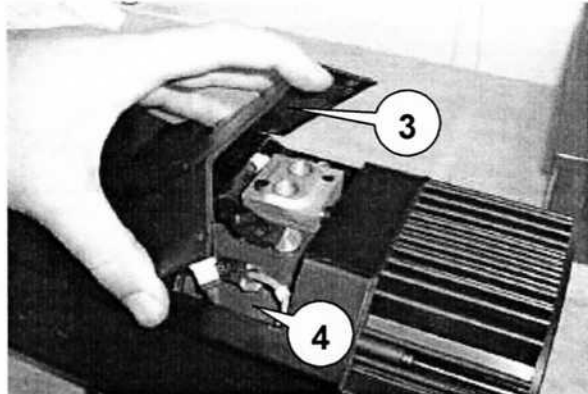


Figure 12.15

1 PAIR OF QUICK-FIT UNIONS	3 COVER OF SENSOR COMPARTMENT
2 SCREWS	4 SENSOR COMPARTMENT

- Disconnect the air hoses from the quick-fit unions 1, and turn the quick-fit unions to face the nose of the spindle.
- Remove the screws 2 from the cover 3.
- Remove the cover 3 to access the sensor compartment 4, taking care not to damage the cover seal.

**12.2.4.4 Location of sensors**

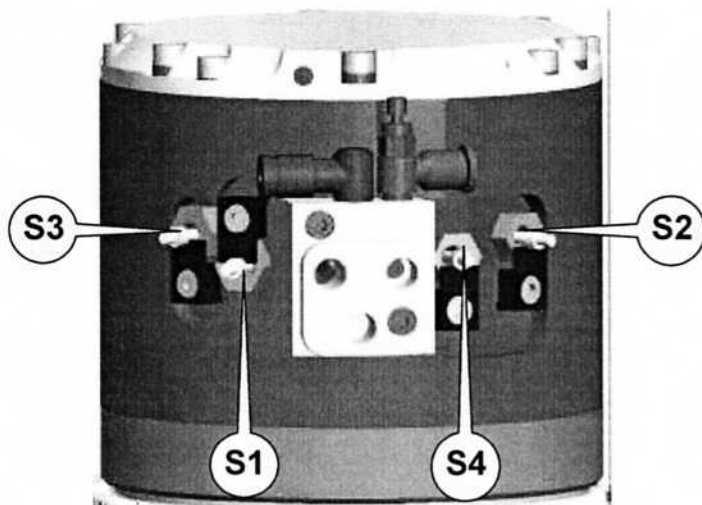



Figure 12.16 Identification of the sensors

### 12.2.4.5 The sensor assembly

 **The sensors are identified by a numbered cable tag. Take care not to mix up the sensors. This could damage moving parts of the electro-spindle.**

The sensors are pre-fitted in calibrated seats to enable them to be quickly fitted to the electro-spindle at the correct depth. For this reason always make absolutely sure what sensor you need to replace. The cables of the sensors installed in the electro-spindle and of those provided as spares are all tagged with a number ring to facilitate identification (Figure 12.17).

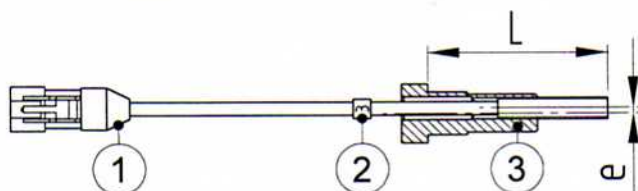


Figure 12.17 Sensor assembly

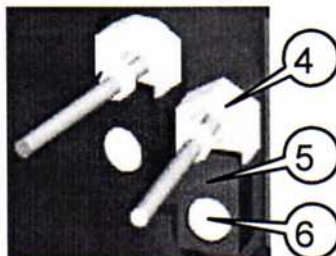



Figure 12.18


1	Electrical connector	e	Adjustment eccentric
2	Cable number ring	4	Sensor
3	Calibrated seat and sensor	5	Sensor fixing bracket
L	Calibrated depth	6	Allen screw


### 12.2.4.6 Replacing a sensor assembly

Refer to figures Figure 12.17 and Figure 12.18, and proceed as follows to replace the sensors.

1. Remove screw (6) securing the bracket (5) of the sensor to be replaced (4).
2. Pull the faulty sensor out from its housing and disconnect its electrical connector (1).
3. Fit the replacement sensor in the housing and connect the electrical connector.
4. Replace bracket (5) and replace and tighten screw (6). Do not fully tighten yet. Leave it loose enough to turn the sensor for calibration as described in sections 12.2.4.7 , 12.2.4.8 and 12.2.4.10 .
5. After you have calibrated the sensor, tighten the fixing screw to maintain the calibration setting.

 **Perform as many tests as possible using all available tool holders to verify the effectiveness of the new sensor calibration.**

 **Warning: Incorrect sensor calibration can lead to electro-spindle malfunctions.**

 **When reading sections from 12.2.4.7 to 12.2.4.10 on sensor calibration, always refer to the position numbers in Figure 12.17 and Figure 12.18.**

