

# I/S-2K adjustment procedure for APQS machines with REV2.x software

The REV 2.x revisions of the I/S-2K software provide adjustment means to set the needle speed, the needle positioner's up and down positions, the needle return position of the regulated stitch and the constant speed range. The SELECTOR DIAL is used to select the adjustment modes:



## SELECTOR DIAL POSITION

minimum (B1)

12 o'clock

maximum (100%)

## ADJUSTMENT MODE

[needle speed](#)

[needle positions](#)

[precision stitch position](#)  
(REV 2.2 and higher)

[constant speed range](#)



The LASER pushbutton is used to select between incrementing (red light on) and decrementing (red light off) an adjusted parameter.

To enter the adjustment mode, hold the RED BUTTON down while powering up the unit.



## A. NEEDLE SPEED ADJUSTMENTS

In this mode the needle speed for the needle positioner can be adjusted.

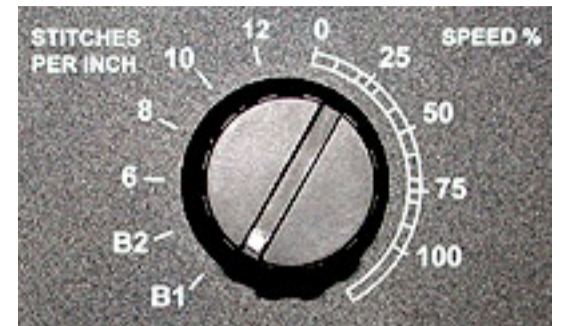
Note that the needle positioner speed adjustment will change parameters that affect the

needle top position and the constant speed range, so it should be performed first.


## NEEDLE POSITIONER SPEED


1. Turn the SELECTOR DIAL to its minimum (B1) position.



2. Push and hold down . A needle positioning step (up or down) will be made.




1. Check the speed and strength of the needle movement. The proper setting should provide just enough strength to stitch through the fabric going down and pull out going up without jamming. Avoid setting the needle speed too high, for it may cause the needle to run over its top and bottom position.

2. If the speed and strength are sufficient, release , the adjustment is completed.


3. If the speed and strength are not sufficient, while still holding  down, turn off the red LASER light if the speed needs to be decreased, turn it on if increasing is necessary.

4. While still holding  down, hit . A beep will indicate that the speed was increased/decreased and the new value was stored in the computer's memory. A missing beep indicates that a high/low limit was reached.

5. Release  and repeat the procedure from Step 2 until the desired speed is reached.

## REGULATED STITCHING SPEED





Does not apply to Needle Positioner

1. With the SELECTOR DIAL still at the minimum (B1) position push and hold down . A fast single stitch will be made.

2. Check the speed of the stitch. The speed should be as high as possible without causing double stitching.



1. If the speed is acceptable, release , the adjustment is completed.

2. If the speed is not acceptable, while still holding  down, turn off the red LASER light if the speed needs to be decreased, turn it on if increasing is necessary.
3. While still holding  down hit . A beep will indicate that the speed was increased/decreased and the new value was stored in the computer's memory. A missing beep indicates that a high/low limit was reached.
4. Release  and repeat the procedure from Step 1 until the desired speed is reached.

## B. NEEDLE POSITION ADJUSTMENTS

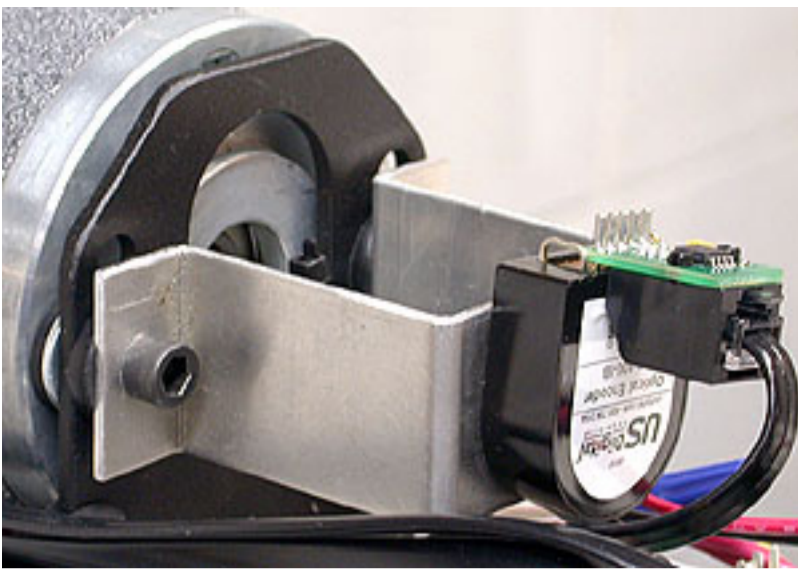
A major improvement in the REV2.0 software makes it possible to eliminate the mechanical timing and set the regulated stitch return position by software, similarly to the needle up/down positions.

The needle position sensor's timing is set at the time of the installation, there is no need to re-time the sensor. It is recommended, however, to check the proper timing before the needle position adjustment takes place.

To check the sensor timing:

1. While watching the green light above the DOWN button turn the handwheel to the right direction **very slowly** until the light comes on. If the light just flashes, turn the handwheel backward until the light is on again. With fine adjustments of the handwheel the green light can be constantly turned on.
2. If the green light stays on when the point of needle is just touches the fabric on its way down, the timing is correct, you can proceed to the UP/DOWN POSITION ADJUSTMENT.
3. If the green light is turned on when the needle is not at the desired position, the SENSOR ALIGNMENT procedure should be followed.


## SENSOR ALIGNMENT



On the APQS machines the needle position sensor can be found under the top cover, mounted on the secondary shaft of the motor.

1. Remove the top cover.
2. Turn the handwheel to the right direction until the point of the needle just touches the fabric on its way down.
3. Loosen up the nut holding the sensor to the bracket.
4. Turn the body of the sensor **very slowly** watching the green light above the DOWN button. If the light just flashes, turn the body of the sensor backward until the light is on again. With fine adjustments of the sensor the green light can be constantly turned on.
5. When the green light stays on the sensor is aligned properly. Tighten the sensor mounting nut.
6. Replace the top cover.

## UP/DOWN POSITION ADJUSTMENT

1. Turn the SELECTOR DIAL to the 12 o'clock position.
2. Push and hold down . A needle positioning step (up or down) will be made.

**To differentiate between the "up" and "down" positions a beep will sound when the needle is supposed to be at the "up" position.**









1. Check the up or down position of the needle.

When adjusting the "up" position, the take-up lever should be above the lower green mark to release the thread from the hook.



When adjusting the "down" position, the needle should stop at its lowest position.




2. If the up(down) position is correct, release , and go to Step 1 to check the other position.
3. If the up(down) position is not acceptable, turn on the red LASER light if the handwheel needs to be turned counter clockwise, turn off the light if the handwheel needs to be turned clockwise to reach the desired up (down) position.
4. While still holding  down hit . A beep will indicate that the new position was stored in the computer's memory.
5. Release  and repeat the procedure until the desired needle positions are reached.

Note that in some cases excessive overrun and occasional double stitching may occur during the up/down position adjustment. This may be due to unnecessary high needle positioner speed. In such cases a repeated [needle positioner speed adjustment](#) is necessary to eliminate the effect.

## NEEDLE RETURN POSITION ADJUSTMENT





Does not apply to Needle Positioner

1. With the SELECTOR DIAL still at the 12 o'clock position push and hold down . A fast single stitch will be made.
2. Check the needle return position.



The needle should return to the top position with the take-up lever between the green marks, closer to the lower mark.




1. If the needle return position is correct, release  , the adjustment is completed.
2. If the position is not acceptable, turn on the red LASER light if the handwheel needs to be turned counter clockwise, turn off the light if the handwheel needs to be turned clockwise to reach the desired needle return position.
3. While still holding  down hit  . A beep will indicate that the new position was stored in the computer's memory.
4. Release  and repeat the procedure until the desired needle return position is reached.

Note that in some cases double stitching may occur during the needle return position adjustment. This may indicate that the sensor is out of alignment. In such cases a repeated [sensor alignment](#) is necessary to eliminate the effect.

## PRECISION NEEDLE RETURN POSITION ADJUSTMENT

Does not apply to Needle Positioner


Only REV 2.2 and higher




1. Turn the SELECTOR DIAL to its maximum (100%) position.
2. Push and hold down  . A reduced speed (precision) single stitch will be made.
3. Check the needle return position.




The needle should return to the top position with the take-up lever between the green marks, closer to the lower mark.













1. If the needle return position is correct, release  , the adjustment is completed.
2. If the position is not acceptable, turn on the red LASER light if the handwheel needs to be turned counter clockwise, turn off the light if the handwheel needs to be turned clockwise to reach the desired needle return position.

3. While still holding  down hit . A beep will indicate that the new position was stored in the computer's memory.
4. Release  and repeat the procedure until the desired needle return position is reached.

### C. CONSTANT SPEED RANGE ADJUSTMENT

1. With the SELECTOR DIAL still at its maximum (100%) position push and hold down . The motor will start running continuously with the fastest constant speed.



1. Check the full speed range by turning the SELECTOR dial while holding  down.  
**Note that  should be held down continuously during the whole procedure.**
2. If the maximum speed needs adjustment, while still holding  down, turn off the red LASER light if the speed needs to be decreased, turn it on if increasing is necessary.
3. While still holding  down hit . A beep will indicate that the speed was increased/decreased. Repeat the procedure from Step 2 until the desired maximum speed is reached.
4. While still holding  down turn the SELECTOR DIAL to its minimum (B1) position. This is the slowest speed.
5. If the slowest speed needs adjustment, while still holding  down, turn off the red LASER light if the speed needs to be decreased, turn it on if increasing is necessary.
6. While still holding  down hit . A beep will indicate that the speed was increased/decreased. Repeat the procedure from Step 7 until the desired slowest speed is reached.
7. When both the slowest and maximum speed are acceptable release  to save the adjusted speed range in the computer's memory.

**After the adjustments are made the power should be turned off and on again to start the unit in normal operating mode.**

