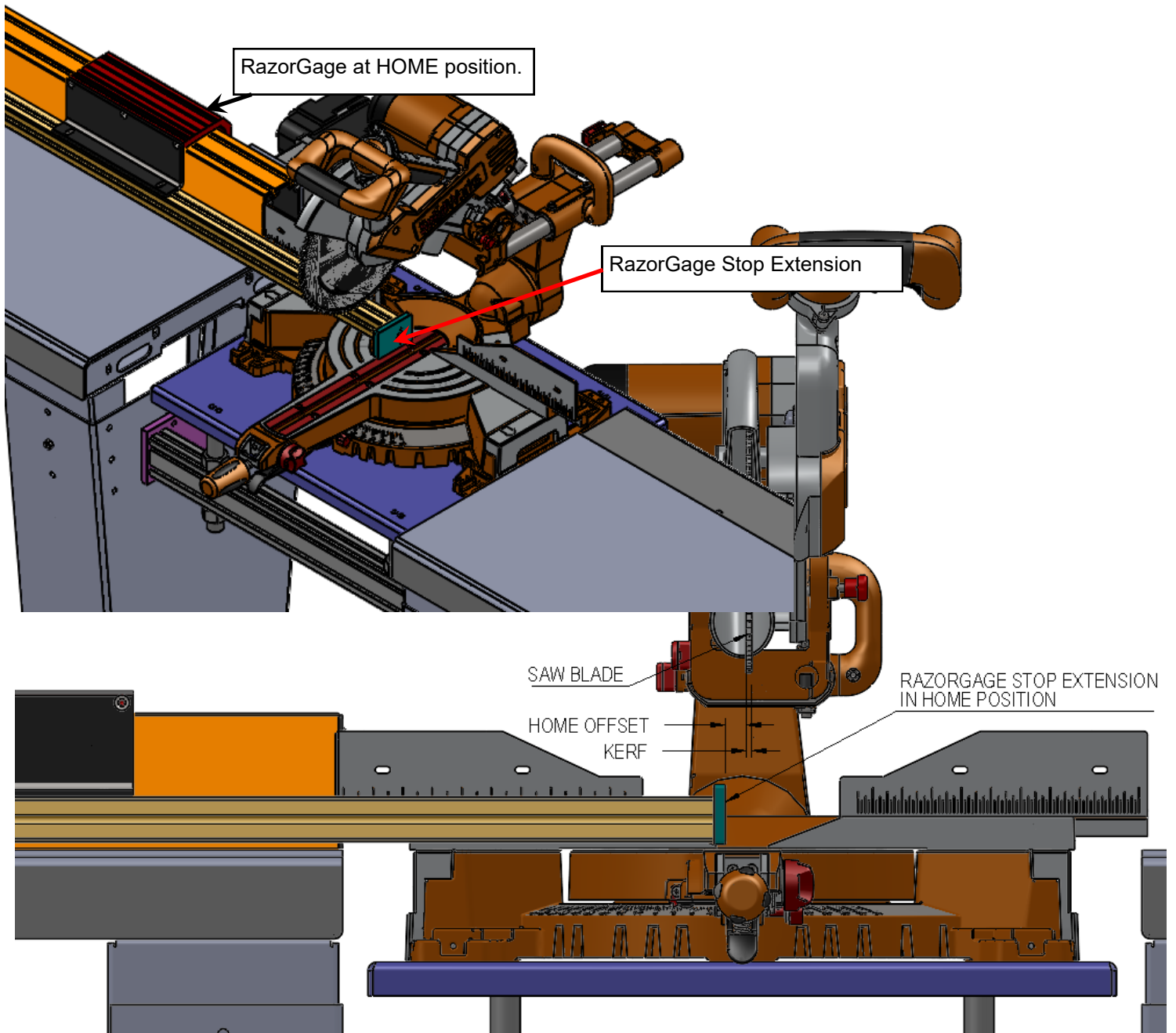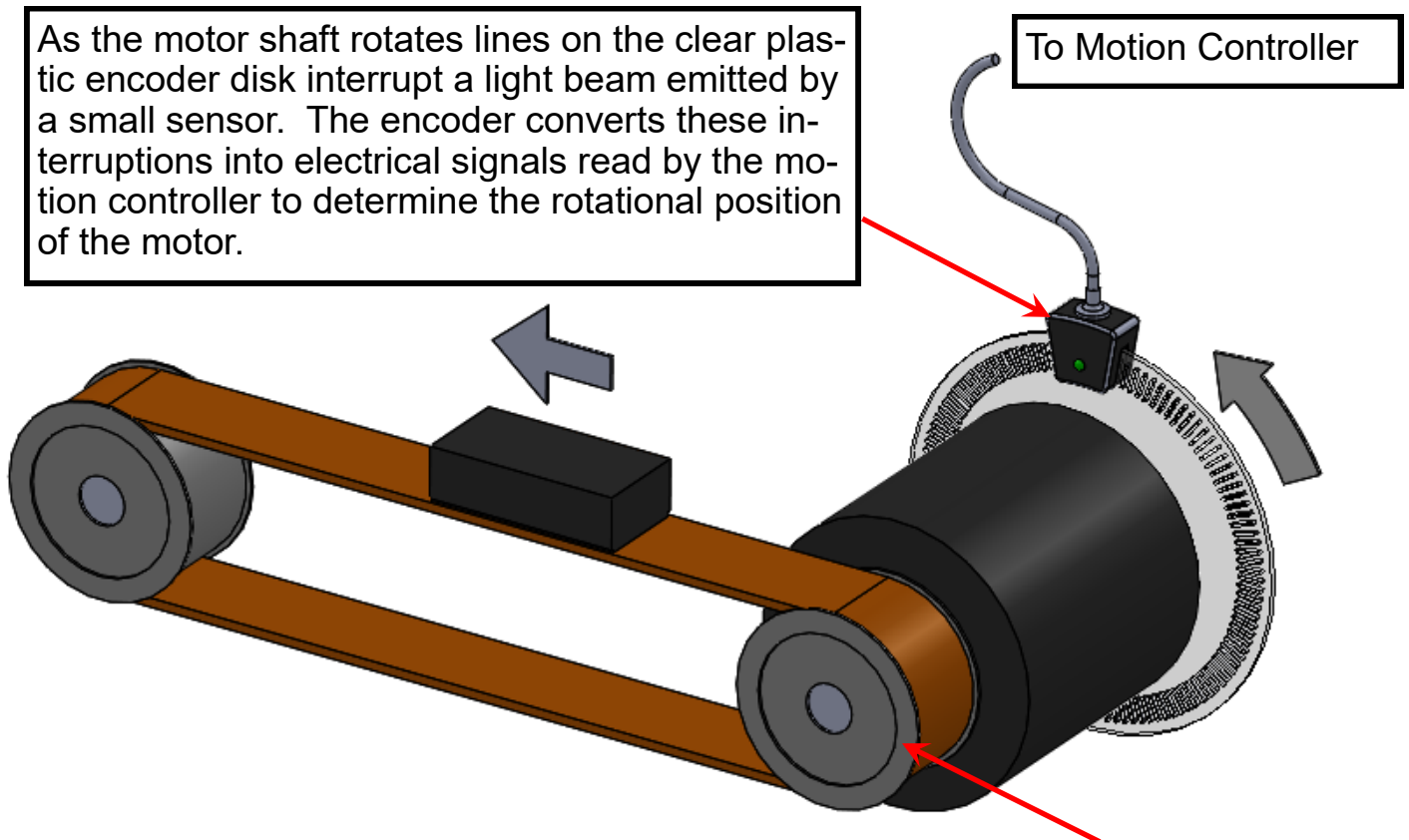## HOME OFFSET

On the RazorGage, the OFFSET parameter describes the distance from the face of the stop extension to the nearest face of the saw blade when the carriage is in the HOME position. When the motion controller puts the positioner through the homing sequence, the carriage ends up in a position some distance from the saw. If a part were cut at that position it would be a certain length. That length represents the distance from the stop face to the saw blade when the RazorGage is in its HOME position. We call that distance the OFFSET. If you are using the positioner as a STOP (not a PUSHER) and all parts are off by the same amount regardless of part length, then the problem is almost certainly the OFFSET. If you are using the RazorGage as PUSHER, then the OFFSET parameter only affects the leading edge trim cut. All other parts are made as the result of a move relative to the last position so once the saw has actually cut the stock, all subsequent parts are unaffected by the OFFSET.

RazorGage at HOME position.

RazorGage Stop Extension

SAW BLADE

HOME OFFSET

KERF

RAZORGAGE STOP EXTENSION IN HOME POSITION

SCALE FACTOR

Virtually all programmable motion devices currently in use utilize a motor that drives a load and an encoder mounted on the rear motor shaft extension that generates electrical signals read by the motion controller to detect motor rotation. The SCALE FACTOR in the RazorGage SETUP SCREEN describes the number of encoder counts that result from the motor moving the linear carriage a linear distance of one inch.

As the motor shaft rotates lines on the clear plastic encoder disk interrupt a light beam emitted by a small sensor. The encoder converts these interruptions into electrical signals read by the motion controller to determine the rotational position of the motor.

To Motion Controller

Rotation of the motor results in linear motion of the carriage. Since the motion controller is tasked with ensuring the accurate linear positioning of the carriage, it must know the number of encoder signals that result from a unit of linear movement. In the RazorGage software, we use inches as our base unit of linear measure so the SCALE FACTOR represents the number of encoder signals per inch of linear travel.

Since the scale factor represents the number of encoder signals per inch, its affect on linear position accuracy is increased with the number of inches traveled. Therefore, a small inaccuracy in the scale factor may not be noticeable in the first inch traveled but will grow as the number of inches traveled increases. On your saw system, a scale factor issue will manifest itself with parts of shorter length being more accurate than the length of longer parts.

KERF

Kerf only matters when you are using a positioner to push material through a saw. It is not a factor when using the positioner as a stop. When the RazorGage pushes a piece of stock through a saw, the finished part ends up on the side of the saw opposite the pusher. Therefore , to achieve a specified length, the pusher must push the stock a distance equal to that length plus the saw kerf. If the kerf is not accurate, then every part length will be off by exactly the same amount, regardless of part length. A 1 inch part will be off by the same amount as a 20 foot part. If you're using the RazorGage as a pusher and all parts are off by the same amount regardless of length, then the problem is almost certainly the kerf.

SAW BLADE

HOME OFFSET

KERF

HOME OFFSET

SAW BLADE

HOME OFFSET

KERF

RAZORGAGE STOP EXTENSION
IN HOME POSITION