

Granite Cutting Application

<https://www.hepcmotion.com/case-studies/granite-cutting-application/>

INDUSTRY	PRODUCT	COUNTRY	PROCESS
Mechanical Handling	HGS Gantry System	UK	Product Transfer

Task

Cutting large marble slabs while ensuring a precision smooth cut is a difficult task on its own, without the ongoing problem of airborne grinding dust that mixes with the coolant from the cutting wheel to form an abrasive paste. Only a system capable of performing in these arduous conditions will suffice.

The table-type stone cutting machine processes granite slabs up to 20mm thick using a 600 mm diameter wheel that has to remain rigid during the cutting cycle otherwise a poor quality cut would be evident. In addition to the 2m movement of the cutter, the cutter head requires a vertical motion to set the cut thickness and the table supporting the marble has to be positioned accurately to determine the slab width.

Solution

An HB25 rigid heavy duty beam supported only at the ends with vee slides positioned at the beam extremities for maximum offset load capacity and rigidity. One of the slides has an integral rack providing the driving element for the carriage saving on the need to fit a separate rack.

The vertical cut depth positioning is satisfied with a GV3 beam, providing the structure, with a V slide fitted and high capacity V bearings. The heavier loaded table movement uses heavy duty V slides and bearings.

Scope of Supply

HB25 L3000 with CHSS25 and CHSS25R slides fitted with 95mm diameter bearings for the cutter movement. GV3 SBL beam with 76mm wide slide and size 54 double row bearings for vertical motion. CHSS25 slides fitted directly to the machine frame and size 64 mm diameter bearings providing the table guidance.

Result

An ideal combination of V guides for all movements and an integral rack drive to save on assembly time for the cutter movement. The self wiping action of the V system is the only solution that will work unprotected and still provide the precision and rigidity for a smooth clean cut in the marble. Because

of the conditions the guidance systems operate with no lubrication relying on the self wiping action to clear the V of debris. In this application, with no lubrication, slide wear is inevitable eventually, but the bearings can be readjusted to take out any play that might have developed. This is a comforting benefit that provides a very long system life and enables this customer to concentrate on providing high quality marble surfaces typically seen in prestigious kitchens.