

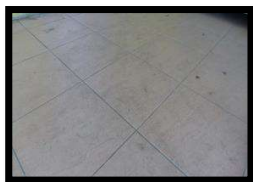
KnockBot – Hollowness Inspection Robot

Designed to be a construction floor hollowness detection robot that leverage on the hollowness detection technology developed by Nisshinbo Singapore Pte. Ltd. It is a fully autonomous robot that can generate a floor hollowness map report which would indicate the position and severity of hollowness.



SIZE AND WEIGHT	
EXTERNAL DIMENSIONS	500 x 500 x 429 mm (L x W x H)
TOTAL WEIGHT	~30kg (without battery)
GROUND CLEARANCE	27.5 mm
SPEED AND PERFORMANCE	
MAX SPEED	0.8 m/s
DRIVE CONFIGURATION	2-Independently driven hub wheels
CLIMBING ANGLE	≤5°
OPERATING ENVIRONMENT	Indoor
BATTERY AND POWER SYSTEM	
BATTERY CHEMISTRY	LiFePO4
MODEL NUMBER	G-BPM2426
POWER SUPPLY	24 VDC
RUNTIME	20 Hours max
CHARGE TIME	≤ 1.5 Hours
CHARGING METHOD	External battery charging
BATTERY CAPACITY	24V 26AH
SENSORS	
LIDAR	1 at center of mobile base (range of 25 m)
BUMPER	4 (Front, Back, Left, Right)
3D CAMERA	1
ULTRASONIC SENSORS	4 on mobile base (2 facing front, 2 facing 45 degrees left and right)
APPLICATION INTERFACE	
USER MODE	User interface via Mini Laptop: Teleoperation <ul style="list-style-type: none"> • Mobile Base Motion (manual) • Hammer Operation Control (manual) Full-autonomous <ul style="list-style-type: none"> • Mobile Base Motion (automatic) • Hammer Operation Control (automatic)
MAP BUILDING	Yes (Manual teaching)
MAXIMUM MAP BUILDING AREA	200m x 200m
MAP DEFINITION	5cm
SOFTWARE	
OPERATING SYSTEM	Ubuntu 18.04
ROS VERSION	Melodic

Where KnockBot can be used



Ceramic Tile Floor



Marble Floor



Cement Floor

IN COLLABORATION WITH

