

How To Make A Wide Angle Ir Non Contact Bumper



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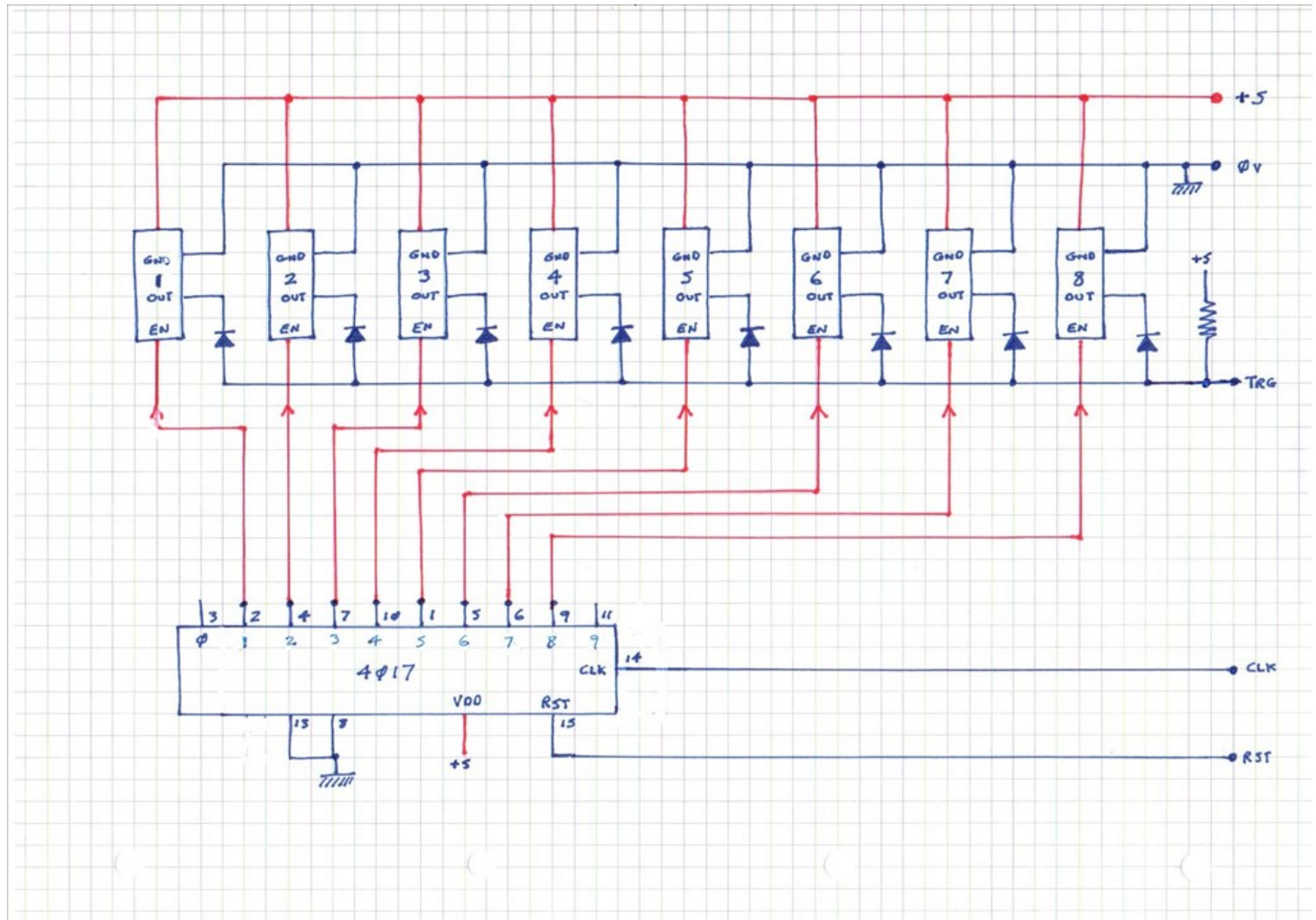
Step 1



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The neat thing about this IR bumper is that it will detect most objects in front of it without any scanning like using a rotating servo plus ranger so no moving parts and its very fast. It also reports back the position of smaller objects and also the rough width of close obstructions.

Here is the circuit diagram



It uses the Pololu 10 cm ranger modules <https://www.pololu.com/product/1134>

The forward detection range is 2 cm to 10 cm but its also possible to get another module that does 5 cm to 15 cm.

The design does not need to have 8 detectors (as shown) it would work with any number up to 9 but with lower numbers the detect gaps would get bigger. When building the cct you need to modify the IR modules so that the ENABLE line is broken out, this is detailed on the products web page.

The bumper requires 3 port lines on the EZB these are RST (output), CLK (output) and TRG (input)

How it works is first you reset the 4017 (decade counter) so the counter output = 0 which has no sensor attached.