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% An example of getting shock stand off distance using matlab. You may need
to modify this.
function delta = standoff(fid)



A = imread(fid);

B = rgb2gray(A);
B = im2double(B);

Bfilt2 = medfilt2(B, [5 5]);

[R C] = size(B);

D = zeros(R,1);
for i = 1:R
    D(i) = find(Bfilt2(i,100:end) <= .3,1,'first') + 100;
end

d1 = find(Bfilt2(100:end,445) <= 0.2,1,'first') + 100;
d2 = find(Bfilt2(d1:end,445) >= 0.3,1,'first') + d1;
diameter = d2 - d1;

mid = round((d2+d1)/2);
[~, standoff] = max(Bfilt2(mid,D(mid):end));

delta = standoff/diameter;
```