
```
clear
clc
```

Input

```
cycles = 1; %How many times will the simulation loop
intL_h = 38.41; %mm of intake lobe height
%exhL_h = 38.30; %mm of exhaust lobe height
intDia = 32; %mm of exhaust cam diameter
%exhDia = 32;
OldTheta = 53;
NewTheta = 63;
```

Plotting Intake Cycles

```
revolutions = cycles * 360;

for i = 1:5:revolutions %units in degrees.

    figure(1);
    %Plotting the intake lobe circular shaft center
    intL_xc = intDia/2 * cosd(1:360);
    intL_yc = intDia/2 * sind(1:360);
    plot(intL_xc, intL_yc, 'k', 'LineWidth', 2);
    hold on

    % Intake lobe animation

    %Define the lobes initial arc shape
    intL_x = intDia/2 * cosd(1:180);
    intL_y = intL_h * sind(1:180);

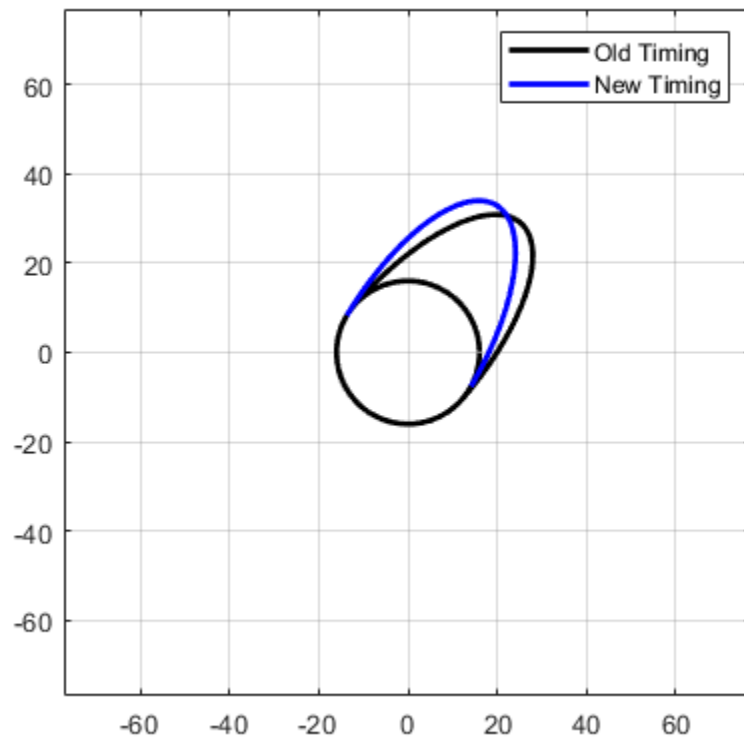
    %Change the lobe arc shapes position as a function of time

    %Theta 1
    time1 = i + OldTheta;
    posIntX1 = intL_y * cosd(time1) + intL_x * sind(time1);
    posIntY1 = intL_y * sind(time1) - intL_x * cosd(time1);
    plot(posIntX1, posIntY1, 'k', 'LineWidth', 2);

    %Theta 2
    time2 = i + NewTheta;
    posIntX2 = intL_y * cosd(time2) + intL_x * sind(time2);
    posIntY2 = intL_y * sind(time2) - intL_x * cosd(time2);
    plot(posIntX2, posIntY2, 'b', 'LineWidth', 2);

    hold off
    grid on
    axis equal
    axis([-intL_h*2 intL_h*2 -intL_h*2 intL_h*2])
    legend(' ', 'Old Timing', 'New Timing')
```

end



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