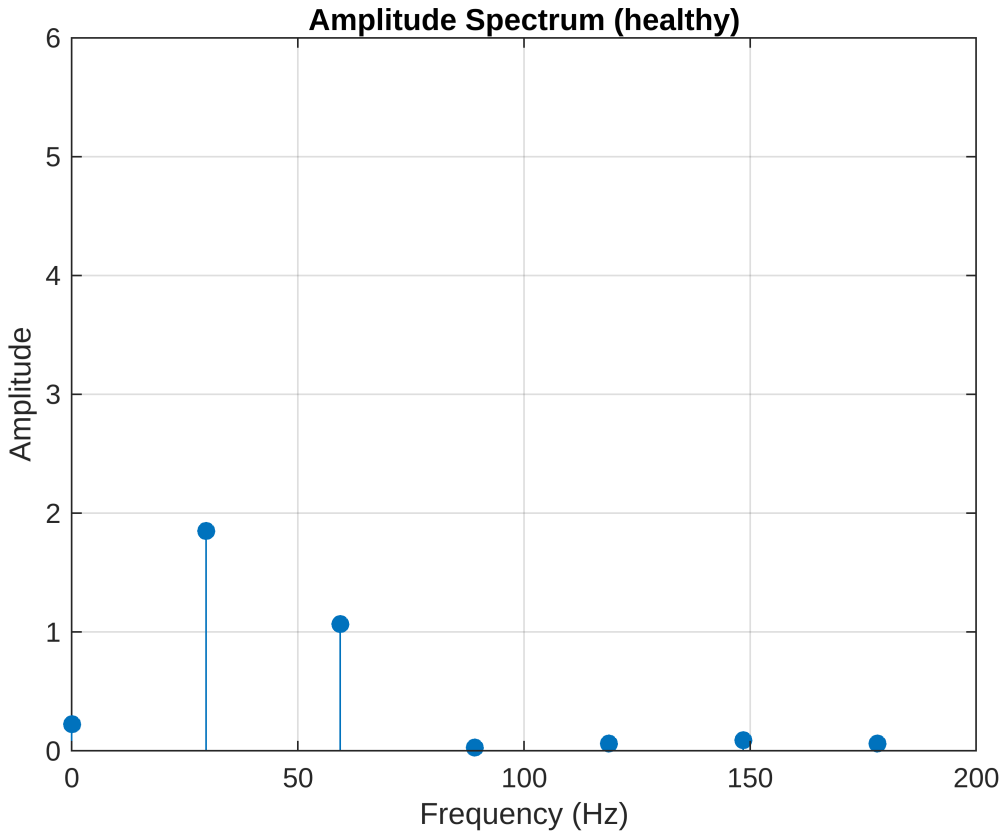
```
% healthy motor
data= readtable('r0b_torque10_exp01_vibration_every_8th_row.xlsx');

vibData = data.Vib_base;
Fs = 7600/8;
N = 32;
X = fft(vibData,N);    % N point DFT
f = (0:N-1)*(Fs/N);

P1 = abs(X(1:floor(N/2)+1))/(45);
f1 = f(1:floor(N/2)+1);

figure;
stem(f1, P1, "filled")
axis([0 200 0  6])
xlabel('Frequency (Hz)')
ylabel('Amplitude')
title('Amplitude Spectrum (healthy)')
grid on;
```

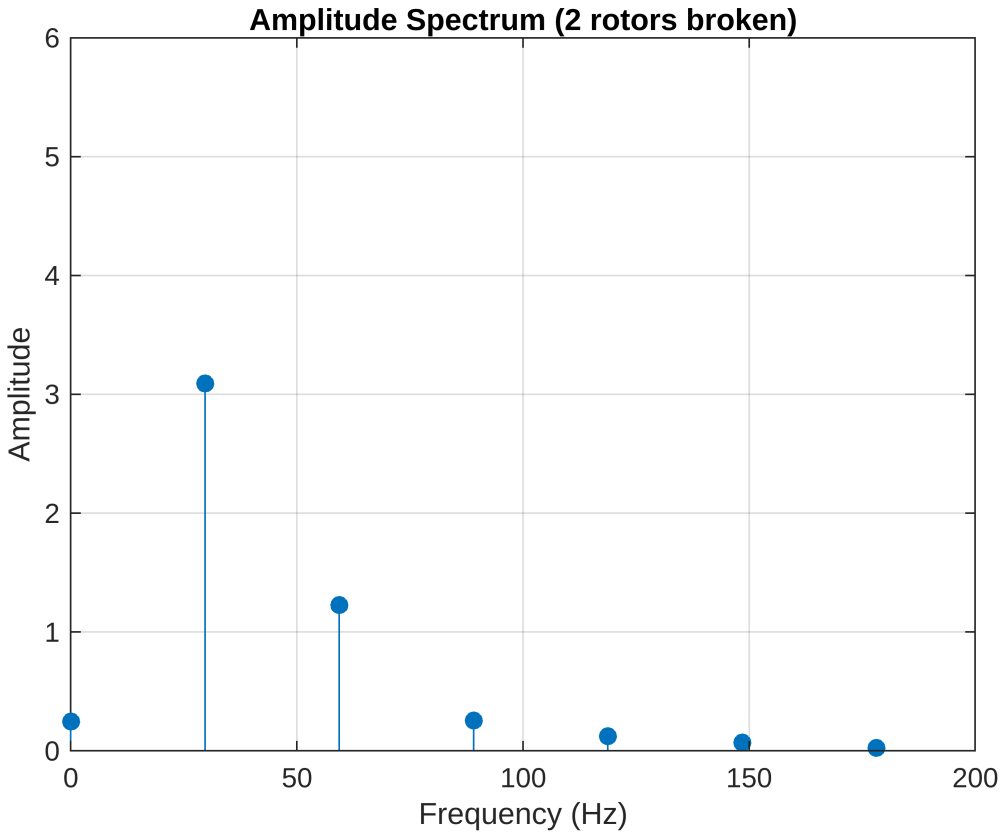



```
% 2 bar broken
data= readtable('r2b_torque10_exp01_vibration_every_8th_row.xlsx');
```

```
vibData = data.Vib_base;
Fs = 7600/8;
N = 32;
X = fft(vibData,N);      % N point DFT
f = (0:N-1)*(Fs/N);

P1 = abs(X(1:floor(N/2)+1))/(45);
f1 = f(1:floor(N/2)+1);

figure;
stem(f1, P1, "filled")
axis([0 200 0  6])
xlabel('Frequency (Hz)')
ylabel('Amplitude')
title('Amplitude Spectrum (2 rotors broken)')
grid on;
```




```
%  4 bar broken
data= readtable('r4b_torque10_exp01_vibration_every_8th_row.xlsx');

vibData = data.Vib_base;
Fs = 7600/8;
N = 32;
```

```
X = fft(vibData,N);          % N point DFT
f = (0:N-1)*(Fs/N);

P1 = abs(X(1:floor(N/2)+1))/(45);
f1 = f(1:floor(N/2)+1);

figure;
stem(f1, P1, "filled")
axis([0 200 0  6])
xlabel('Frequency (Hz)')
ylabel('Amplitude')
title('Amplitude Spectrum (4 rotors broken)')
grid on;
```