# Waveform optimisation

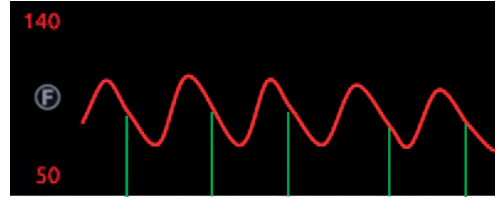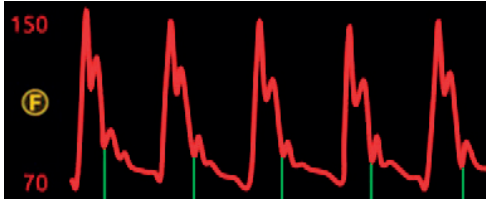## Mostcare Up

**VYGON**

## Step one: Check the signal quality of Mostcare Up





### Signs of underdamping
- Invasive Systolic pressure >> non-invasive
- Invasive Diastolic pressure < non-invasive
- dP/dt > 1.7 mmHg/ms (coloured red)
- Square wave test: >2 oscillations

### Possible solutions
- Touch the curves on the screen and set *Advanced Filter*
- Remove any additional transducer connections
- Consider damping device if available.

### Signs of overdamping
- Invasive Systolic pressure << non-invasive
- Invasive Diastolic pressure > non-invasive
- Less visible dicrotic notch
- Square wave test: sluggish or no oscillations

### Possible solutions
- Check for kinking of the arterial cannula (if radial, extend the wrist of the patient)
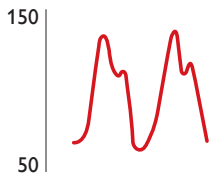- Flush the line
- Remove superfluous connections.

### Check the dP/dt max

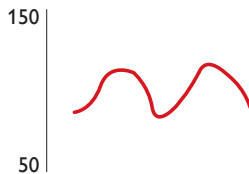If the dP/dt max value goes above 1.7mmHg/msec, it will be shown in red – check waveform and connections

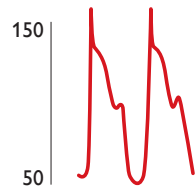$dP/dt_{max}$

**1.23** mmHg/ms

## Step two: Inspect the arterial waveform on the patient monitor


Normal


Overdamped


Underdamped

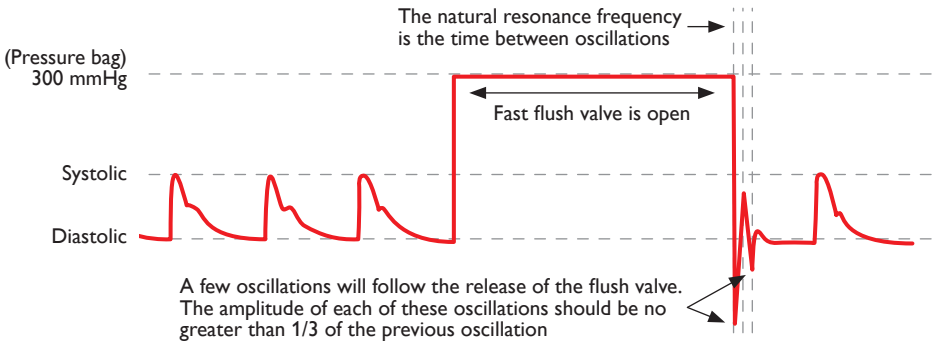If the arterial wave is over or underdamped:
- Check pressure bag is sufficiently inflated
- Eliminate air bubbles
- Remove additional stop cocks

- Avoid long compliant tubing / wait until the line has been softened by body temperature
- Exclude catheter tip occlusions – clots and kinks / use correct arterial catheter
- Perform square wave test.
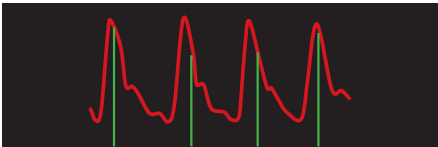
# Step three: Perform a square wave test



| Normal | Overdamped | Underdamped |

Pull the pigtail or squeeze the transducer sides to give a fast flush. There should be no more than 2 oscillations following a fast flush.

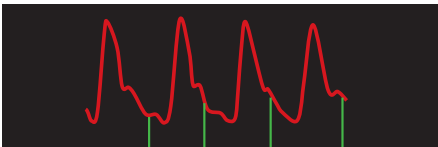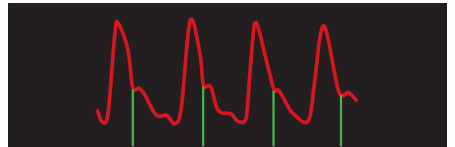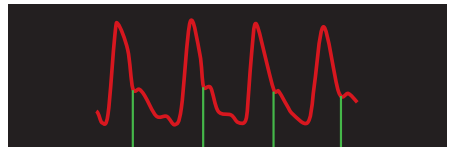## Square wave test of an adequately damped arterial waveform



The natural resonance frequency is the time between oscillations

(Pressure bag) 300 mmHg

Fast flush valve is open

Systolic

Diastolic

A few oscillations will follow the release of the flush valve. The amplitude of each of these oscillations should be no greater than 1/3 of the previous oscillation

# Step four: Check the dicrotic notch



If Mostcare Up tends to anticipate dicrotic notch



Touch the curve on the screen and press ➕ to adjust the dicrotic detection



If Mostcare Up tends to detect the dicrotic notch belatedly



Touch the curve on the screen and press ➖ to adjust the dicrotic detection