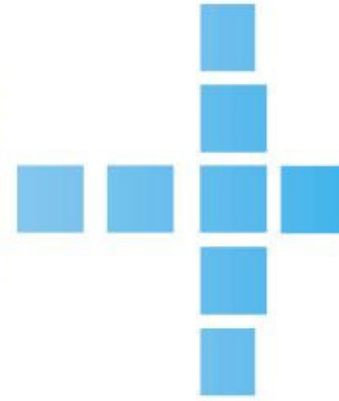


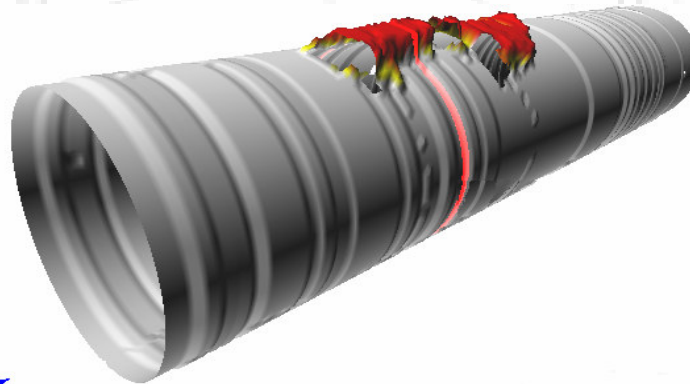
CLEARLINE

PROFILER



Hardware Training V5.5.6

12-0 Carbon/Fiberglass tub



Laminate approx 2-0 mm

kevlar laminate

over

joint filler

epoxy filler

DWG NO 440 C 06

15/03/2002

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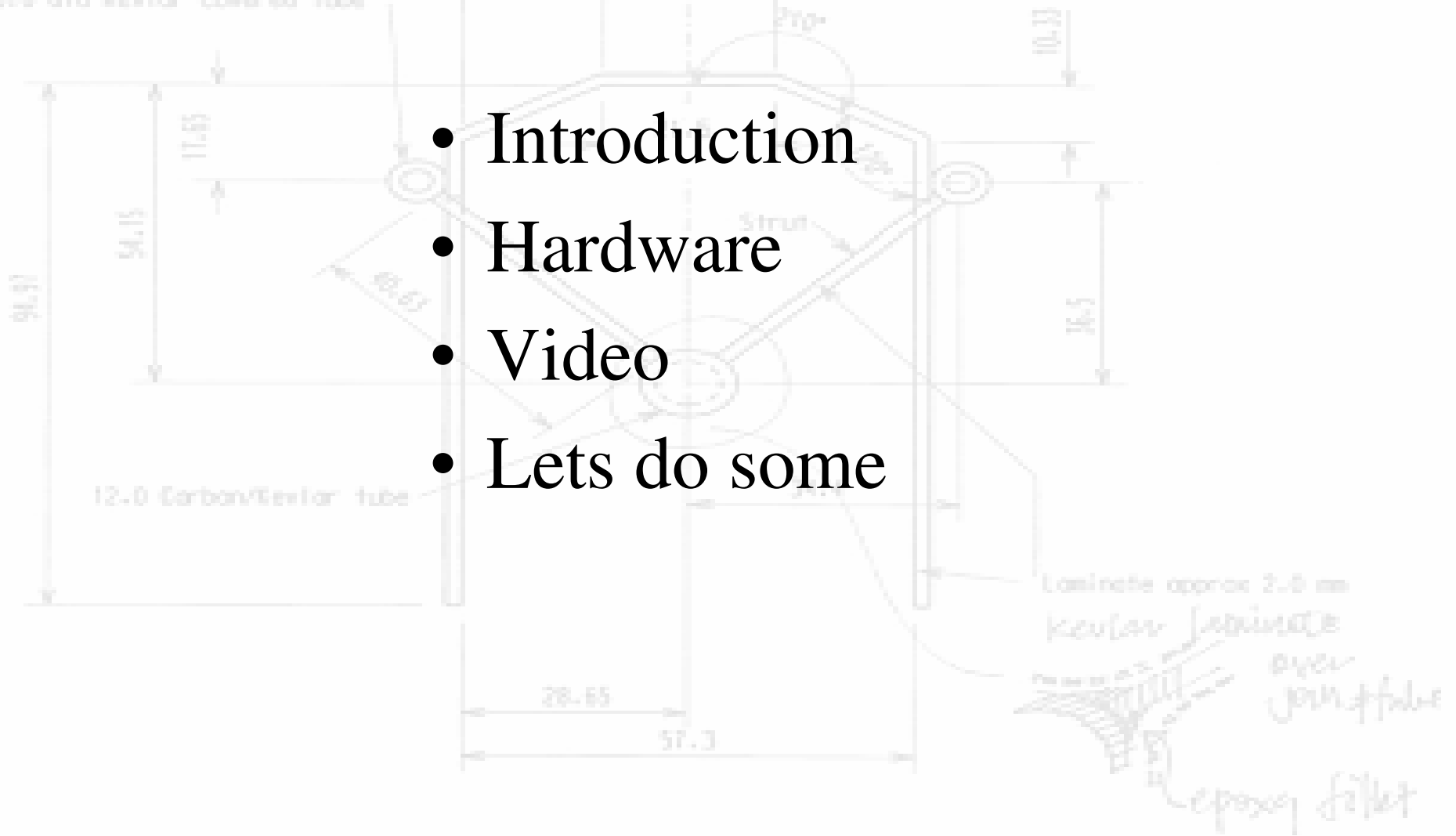
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SYSTEMS



Hardware Training Outline

8.0 dia Kevlar covered tube

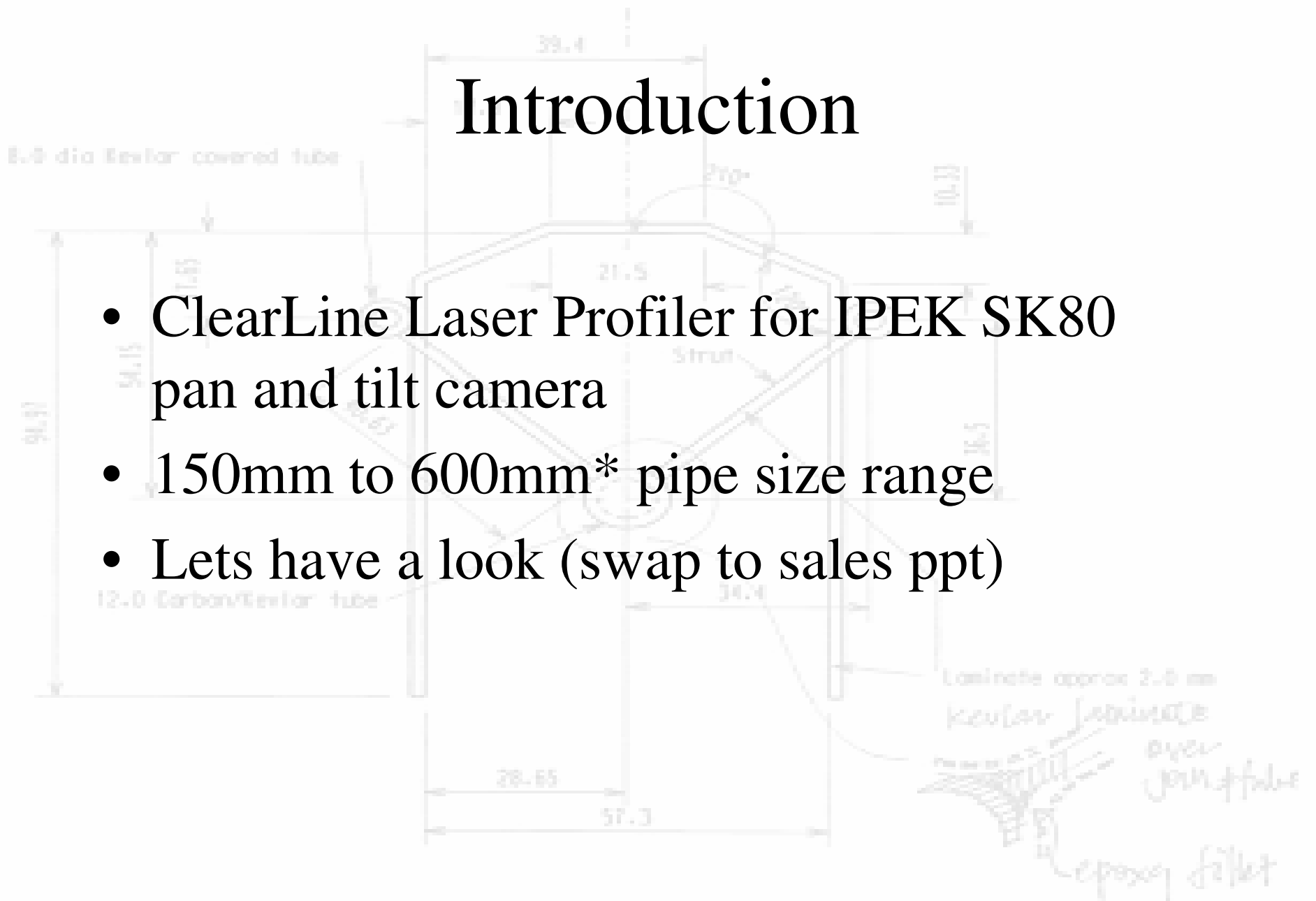


- Introduction
- Hardware
- Video
- Lets do some



Introduction

- ClearLine Laser Profiler for IPEK SK80 pan and tilt camera
- 150mm to 600mm* pipe size range
- Lets have a look (swap to sales ppt)



Hardware

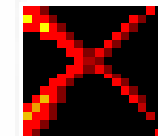
- Components
 - SO unit – (note registration number)
 - Laser Head – (note registration number)
 - Pipe size attachments
 - Pipe size/ measurements Calibrator
 - Charger
 - Hand Book
 - Chess board



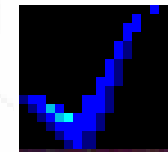
Laser Safety

After Each Use

• Inspect LaserHead casing and window for damage (LaserHead is completely sealed and cannot be opened). Unit should not have any cracks, fogging in the window, be distorted, have any loose parts or be able to be pulled apart. If any such damage is found, contact the manufacturer and DO NOT use. Danger: 50mW Class 3b laser is present in the interior.



**DO NOT
SCREW
FROM
CAP**



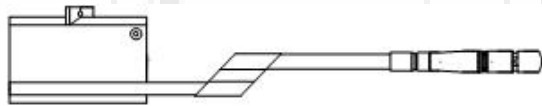
Hardware setup

- Attach Snap-On unit
- Estimate pipe size, attach relevant extension.
- Configure camera to be centre of pipe
 - Change the wheels
 - Pan and tilt will ruin Profile inspection
- Attach Laser Head (ensure suspension fitting attached)
- Ready for insertion?

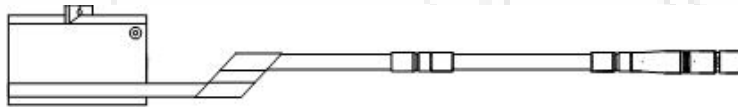


8.0 dia Kevlar covered tube

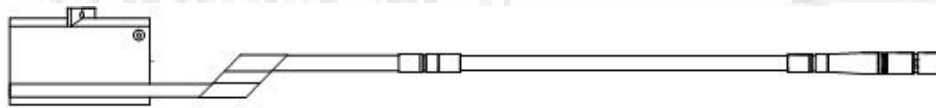
150-260mm



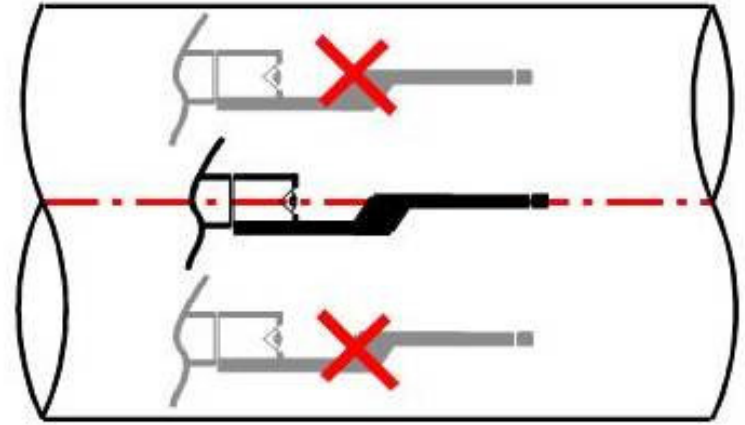
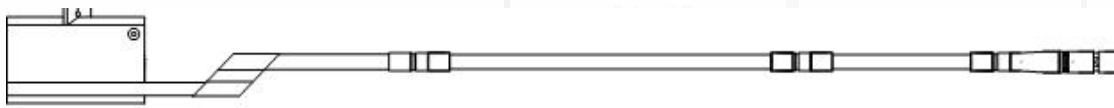
260-375mm



375- 490mm



490-600mm



94.0

12.0 Carbon/Kevlar tube

17.9

39.4

21.5

Strut

34.4

Laminate approx 2.0 mm

Kevlar laminate

over
joint/fibre

epoxy filled



Insertion

- Check pipe not more than 1/3 full
- Switch to full power
- Insert into pipe – its tuff but care please
- Camera to Home setting
- Turn lights off and
 - Check ring size < $\frac{3}{4}$ screen?
 - No, Extract and add or remove attachments
 - Is the laser too bright?
 - Yes, Extract and reduce laser power
- Ready for inspection/ profiling



Video process - DVD, video, MPEG, AVI

8.8 dia Bestar covered tube

Video header



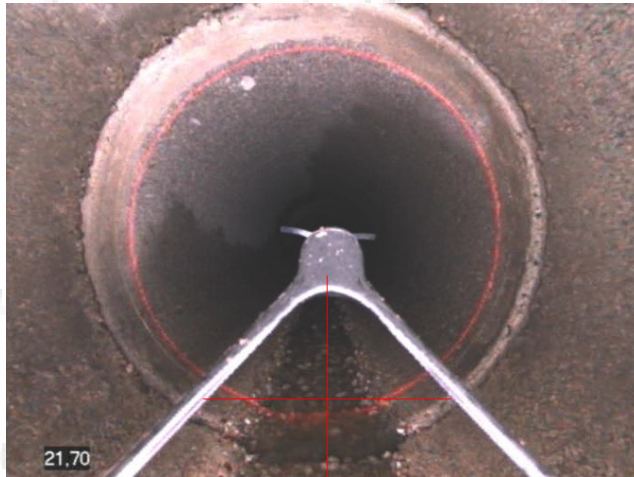
Normal CCTV Video



Lights off
Profiler Video



Profiler
Calibration



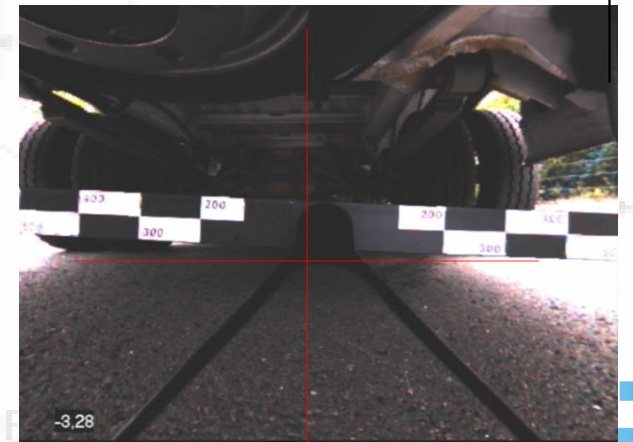
MH 1 to MH 2

54 spinner lane - new market

oh so fresh sewage company

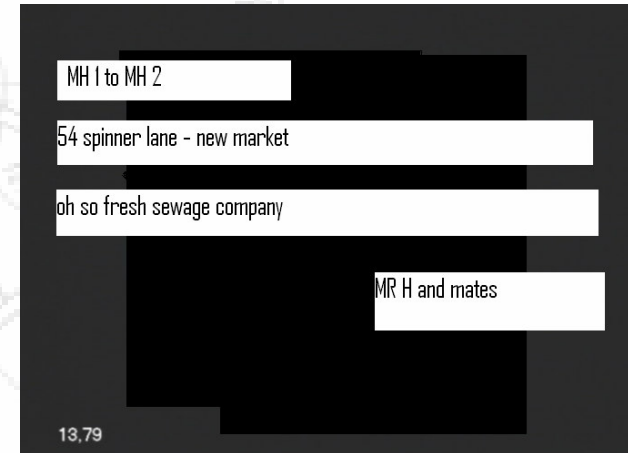
MR H and mates

13.79



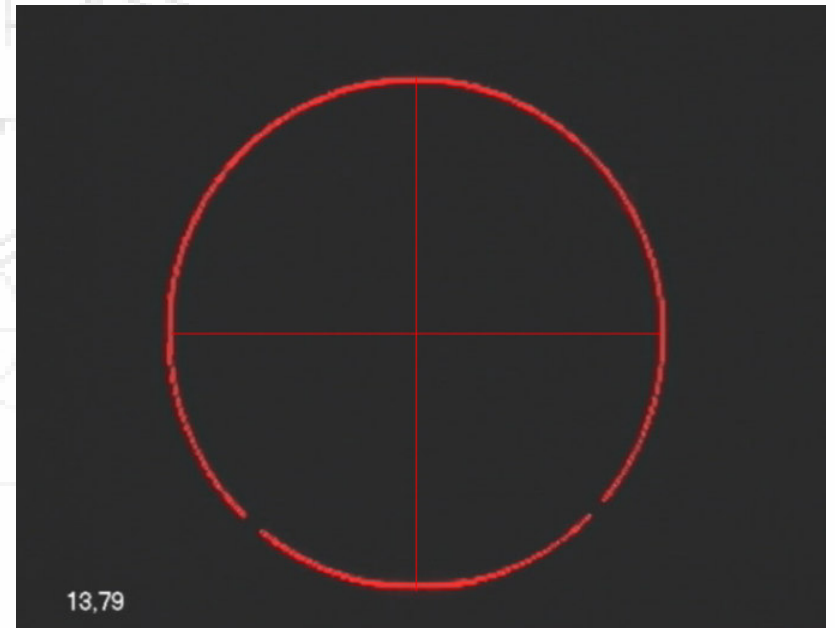
CCTV inspection recording

- Enter Header
- CCTV inspection as per normal to end of pipeline.
 - ☺ Writing on screen
 - ☺ Pan and Tilt
 - ☺ Forward/ Reverse
 - ☺ Stop the camera
 - ☺ Wincan entry

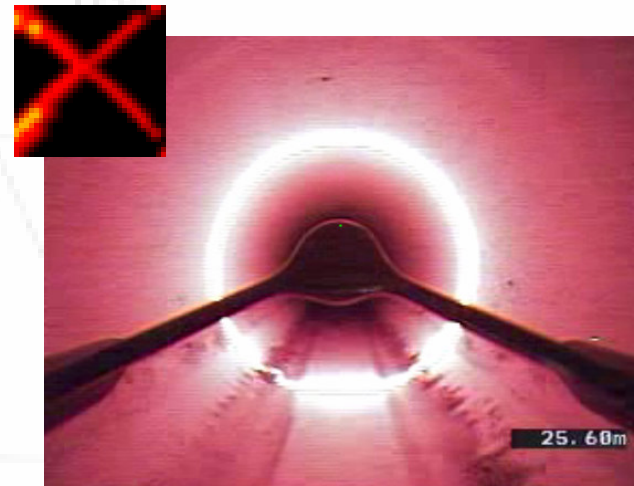
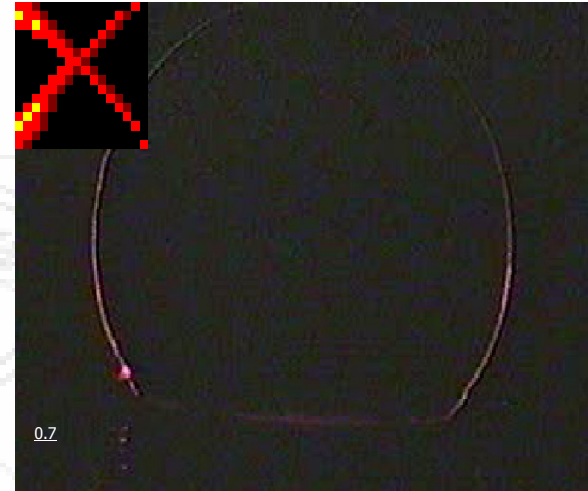
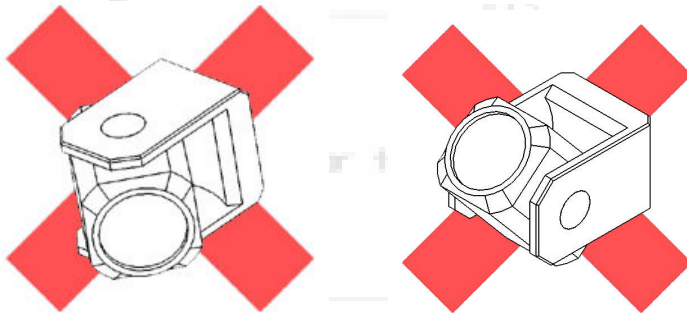
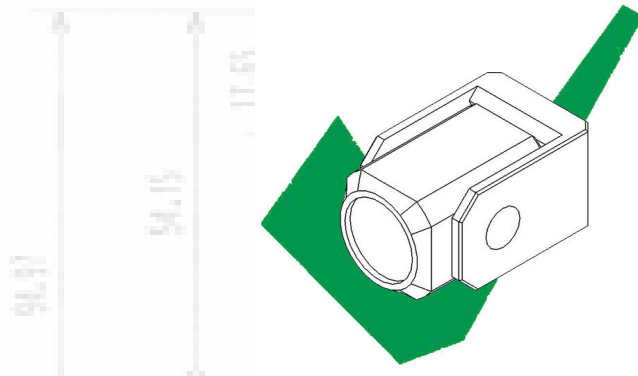


Profiling Recording

- PauseAdd to end of CCTV video
- $\frac{3}{4}$ screen or less
- Lights off
- Focus / iris
- Camera to home setting
- NO SCREEN WRITING
- Distance counter only
- Reverse at constant speed



8.8 dia Restlar covered tube



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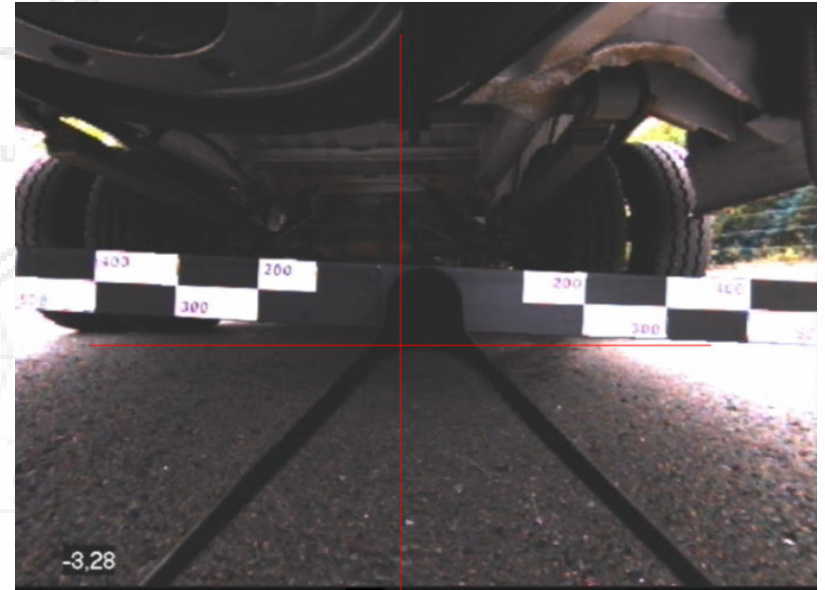
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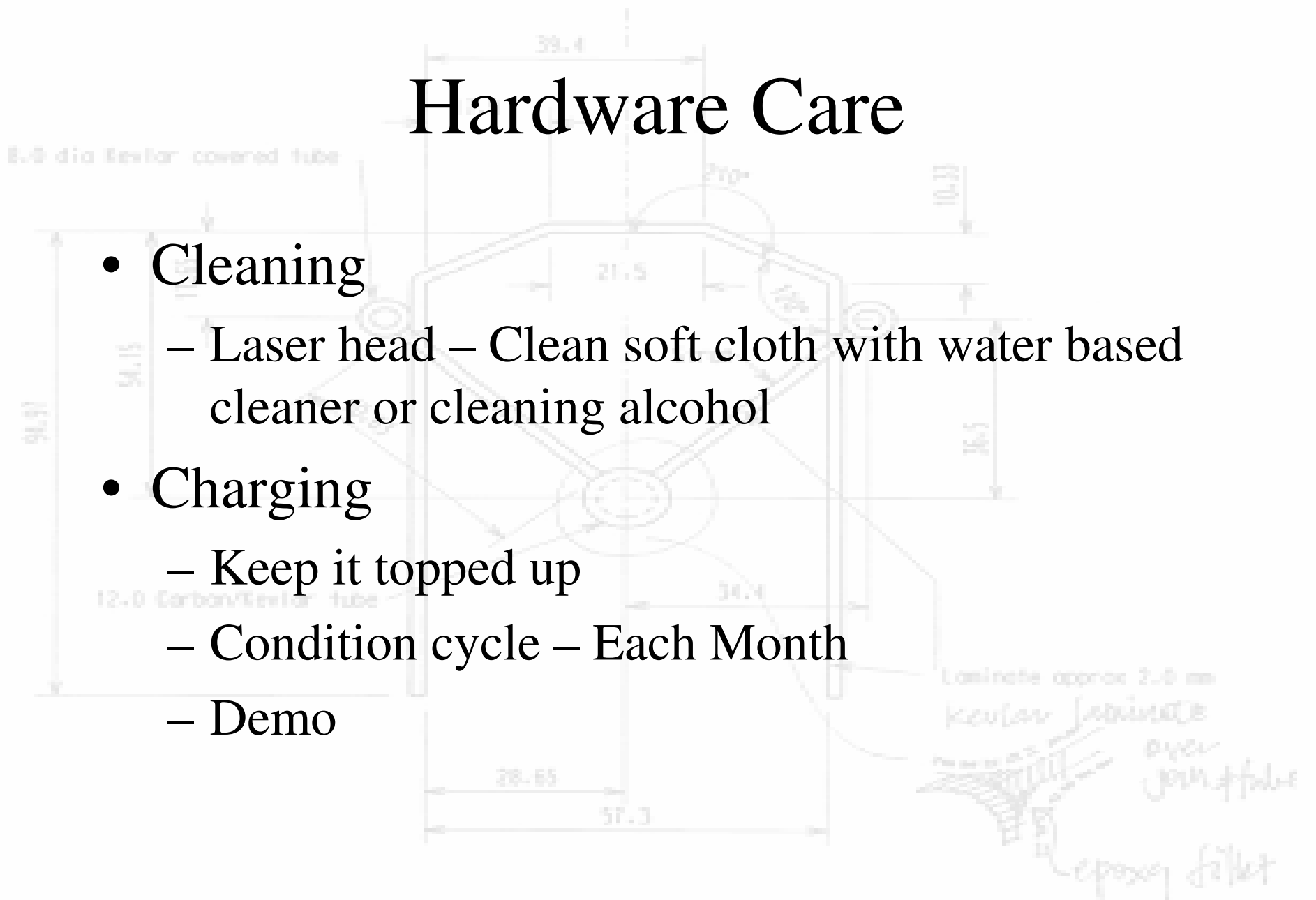
Calibration

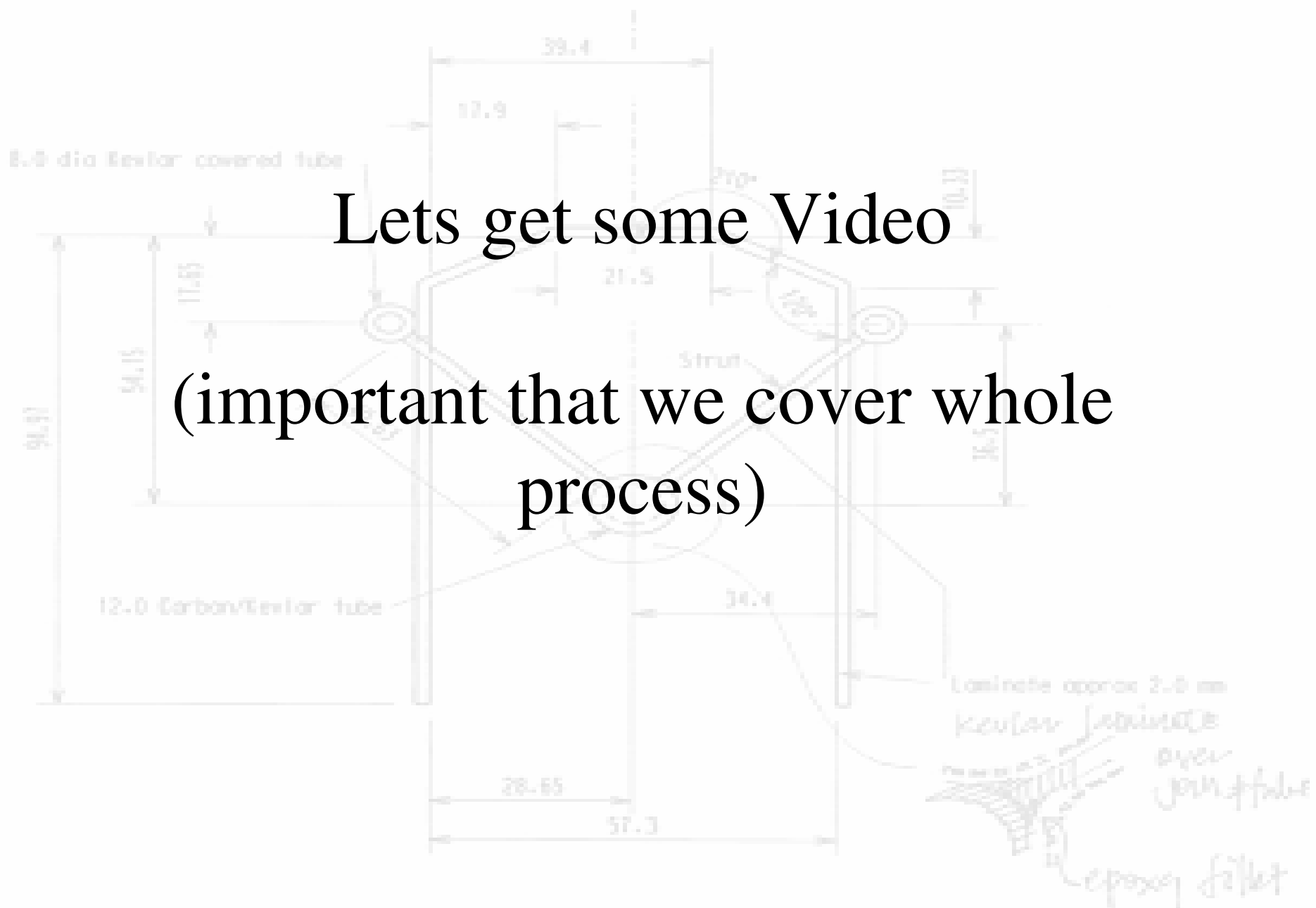
- Add to end of Profiler Video
- Above Ground
- Focus / iris
- Camera to home setting
- Do for every profile
- Vertical and horizontal – 10 seconds of each
- Under the truck if you have to



Hardware Care

- Cleaning
 - Laser head – Clean soft cloth with water based cleaner or cleaning alcohol
- Charging
 - Keep it topped up
 - Condition cycle – Each Month
 - Demo





Lets get some Video
(important that we cover whole
process)



Advanced

- Topics

- Chess board

- Lens distortion and fec files – what to give us what to get back Manual measurements

- Software operation - advanced start

- Report interpretation

- Triple laser

- Pipes cleaned for accurate dimensioning

- Image moving off screen

- Software install

