

Parallel Process Line (PPL)



Line overview

WASER INFEED

WASHER

INSPECTION STATION

DOUBLE SHUTTLE

SAM INFEED

SPACER APLICATOR

SAM OUTFEED

GRID STATION

INFEED DOUBLE SHUTTLE

DUAL GAS PRESS

OUTFEED SINGLE SHUTTLE

SECONDARY SEALER

OUTFEED INSPECTION

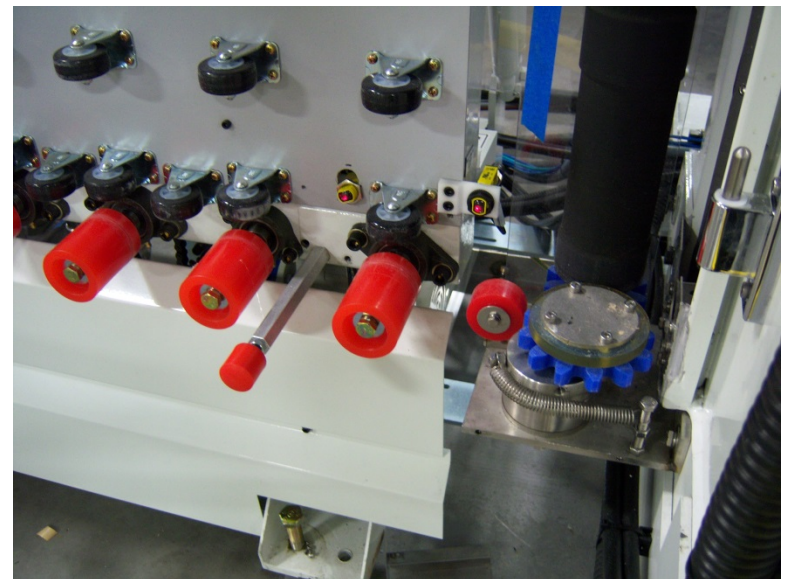
Automation

Automation has been achieved by various means including mechanical, pneumatic, electrical, electronic devices and computers, usually in combination. This document will help point out such devices to help you understand what makes your line perform.

Infeed washer

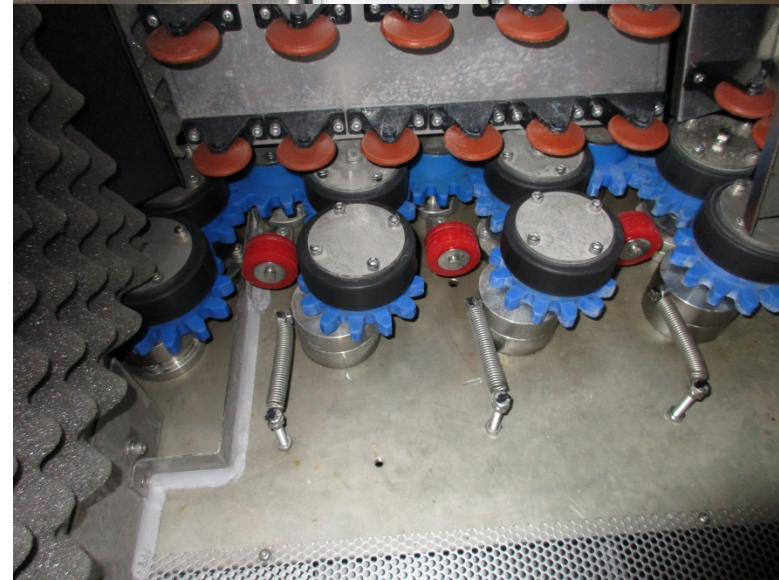
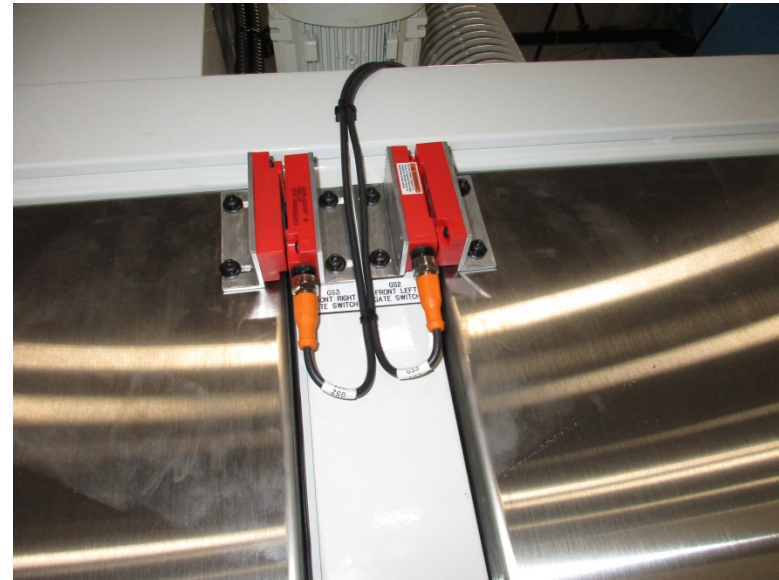
Product detect eyes

Sensors for monitoring water temp, level and quality

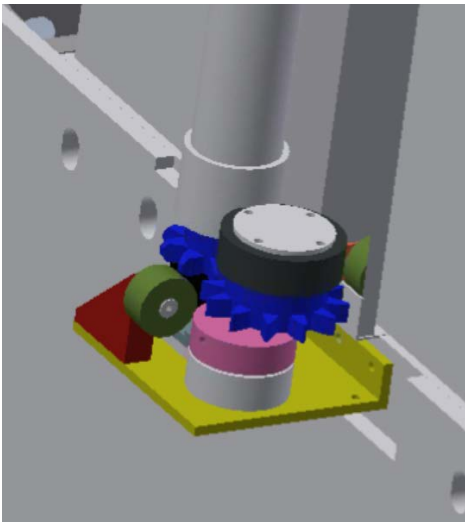


Washer

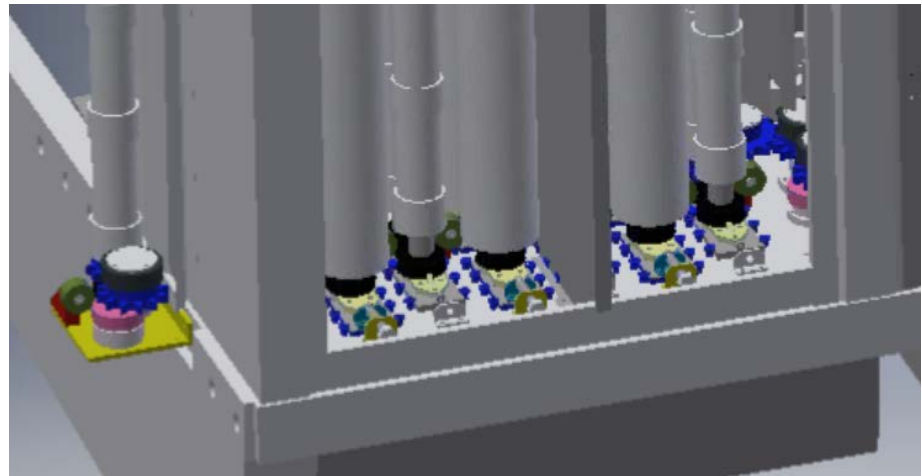
Safety door interlock
Drive components



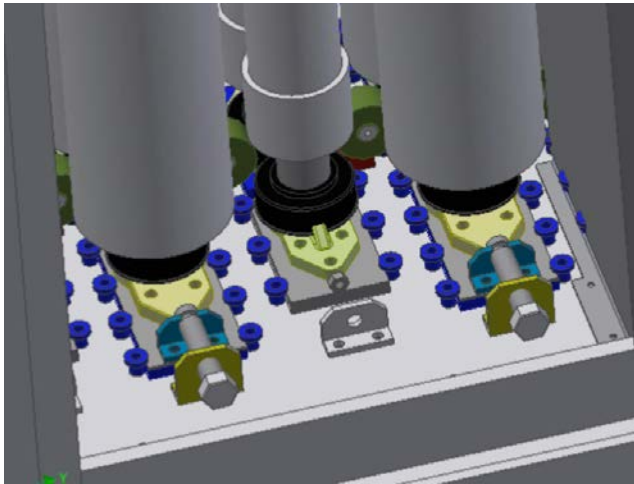
Exposed View of Washer Top / Belt Drive System



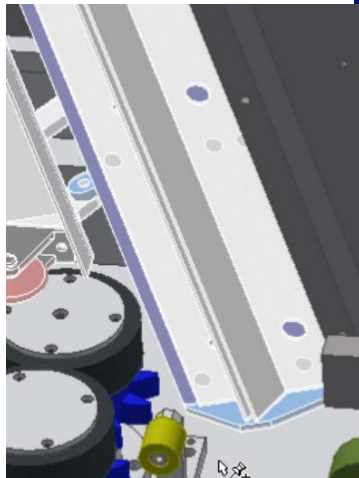
Washer Infeed Pinch
Roller



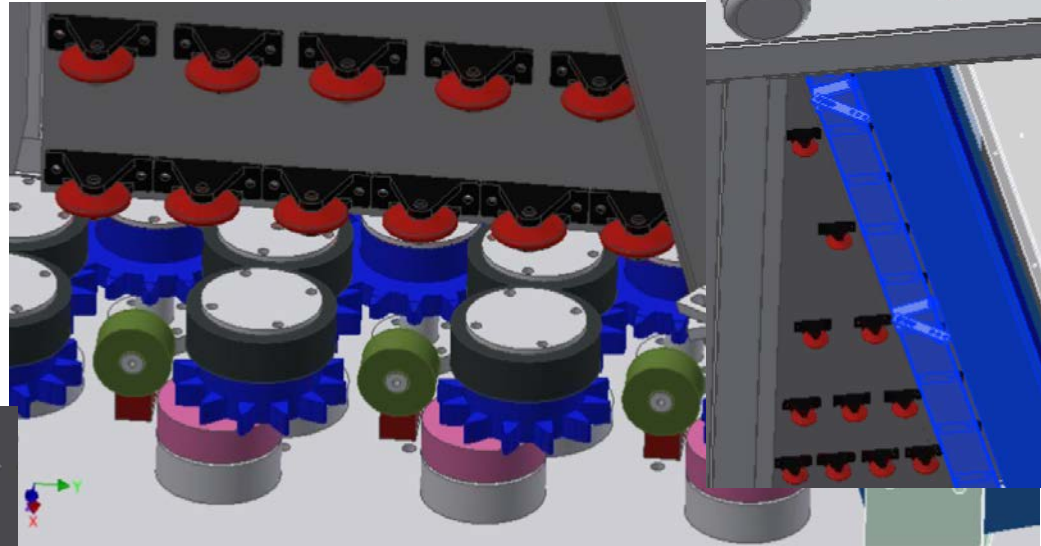
Exposed View Washer
Brush Adjust and Spring
Tension Pinch Roller



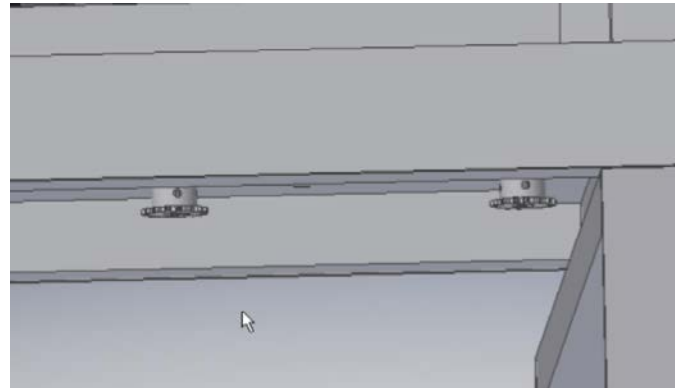
Wash Side / Brush
Adjust



Exposed View of
Air Knife

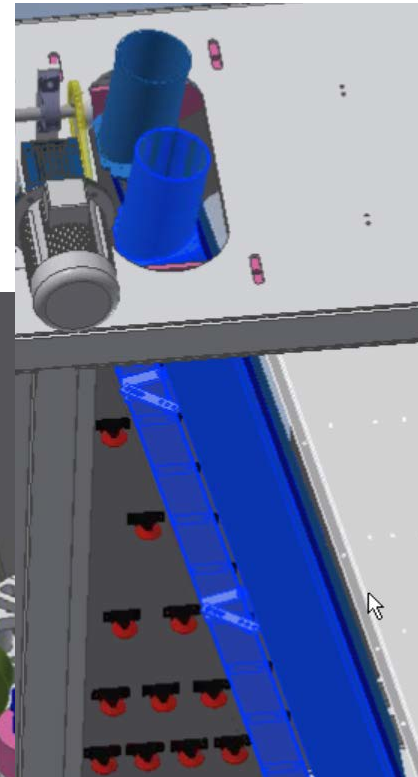


Dryer Side Pinch
Rollers



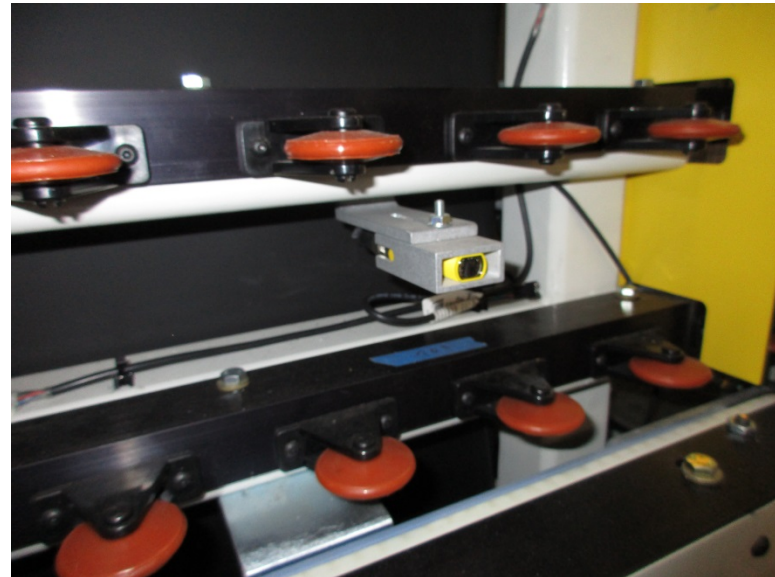
Drive Sprockets
for Final Pinch
Rollers / Dryer
Side

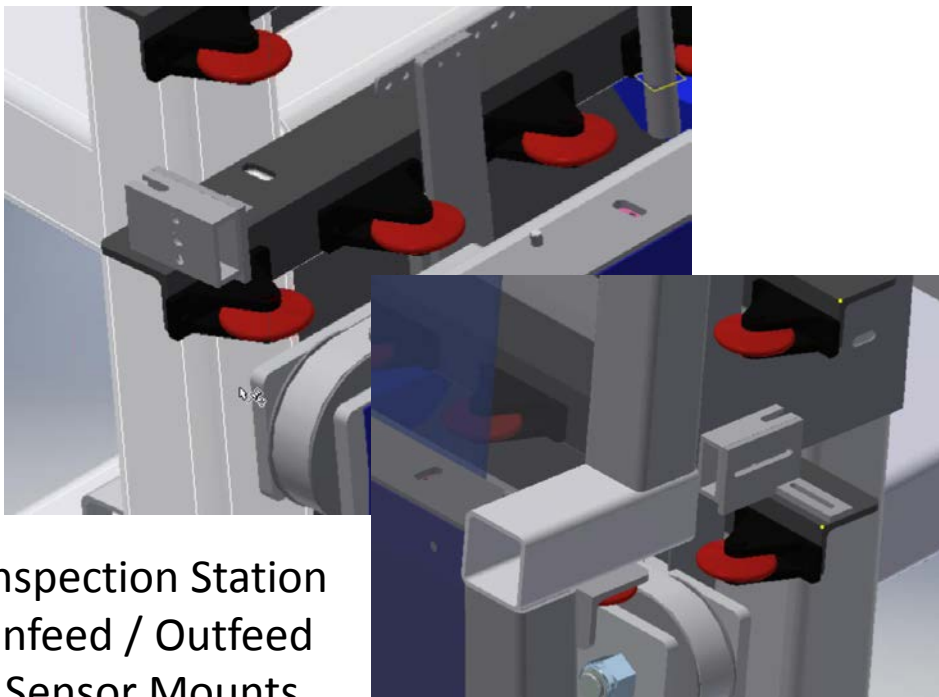
Air Knife /
Blower Inlet



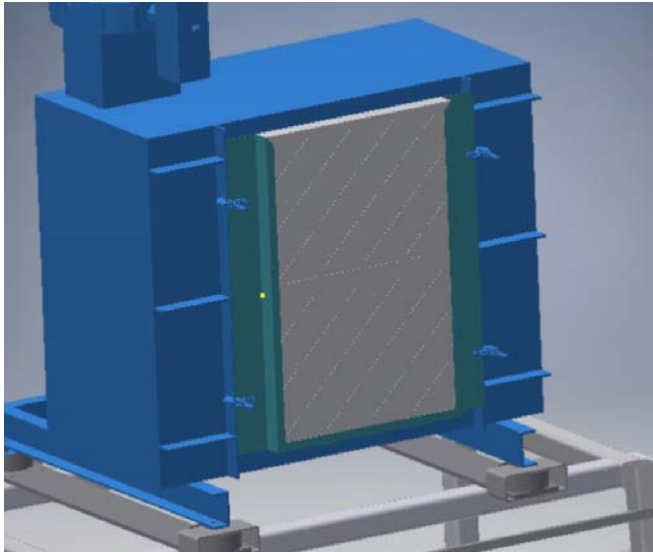
Inspection station

Infeed and outfeed product detect eyes
Conveyor drive

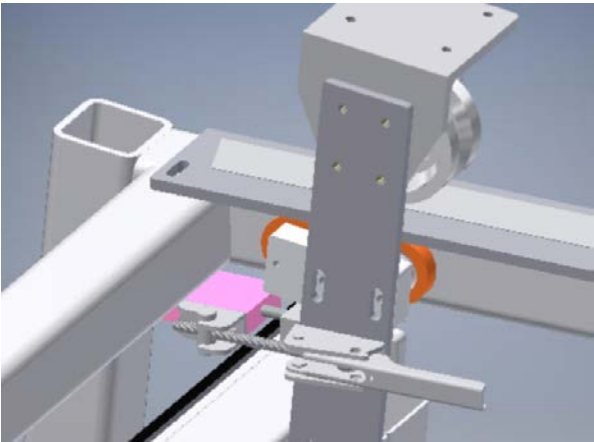




Inspection Station
Infeed / Outfeed
Sensor Mounts



Air Knife Blower / Filters

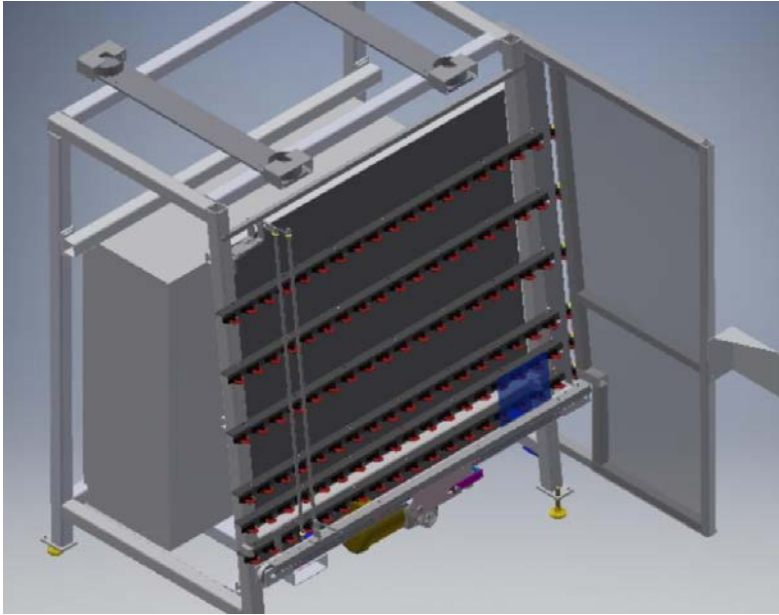


Back Lane Access Turn-
buckles



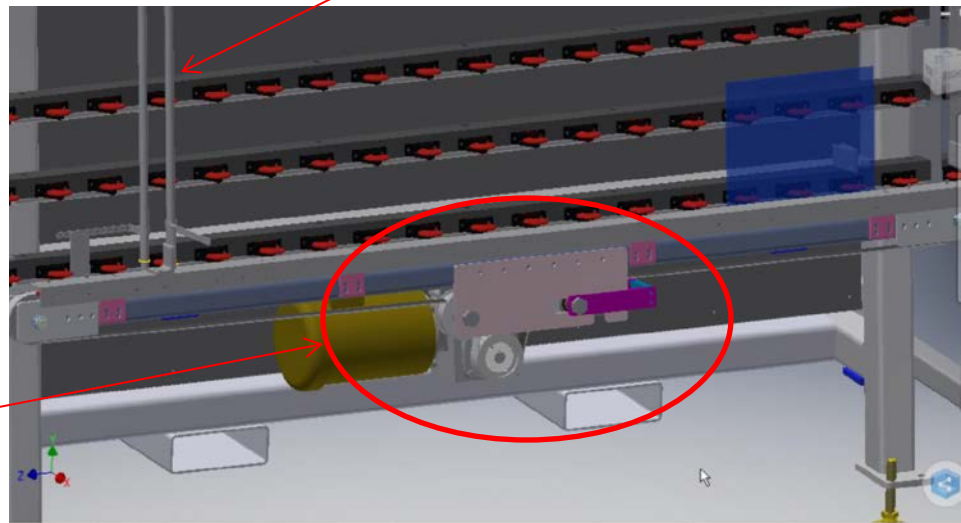
SAM Infeed Drive
System

Back Lane Caster
(For Manual Access)



Inspection station

Static bars on infeed
of inspection station



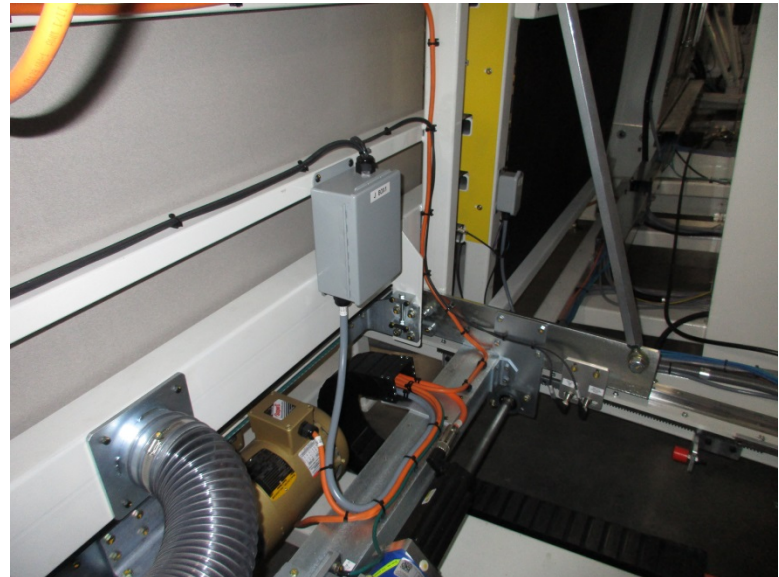
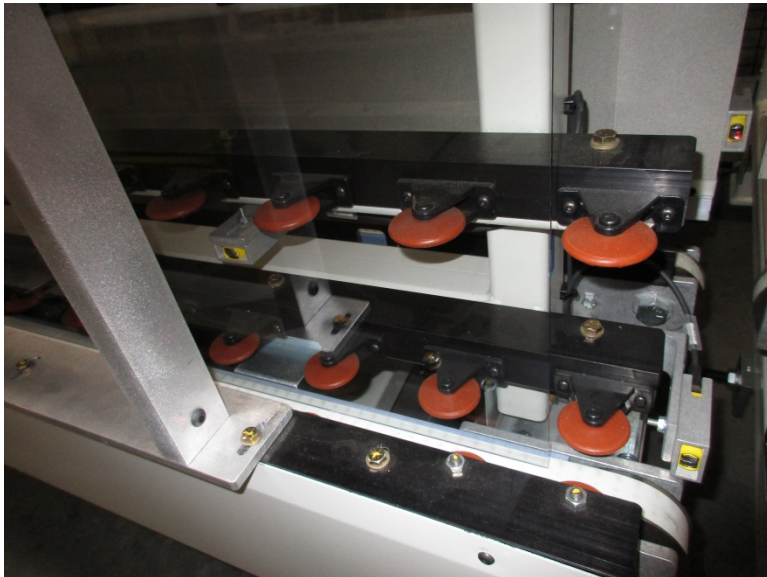
Conveyor belt
tensioning on
inspection station

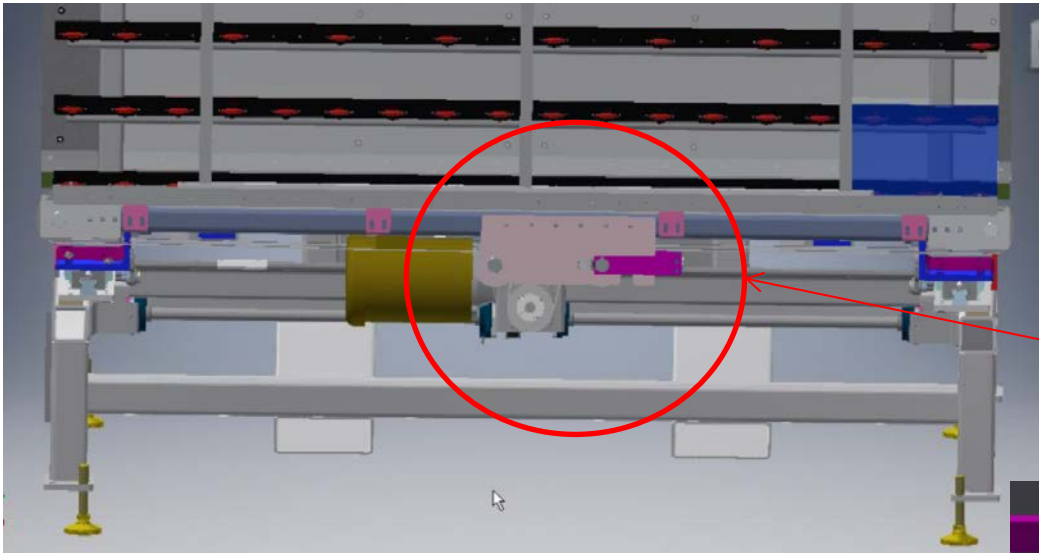
Double shuttle

Home and over travel prox

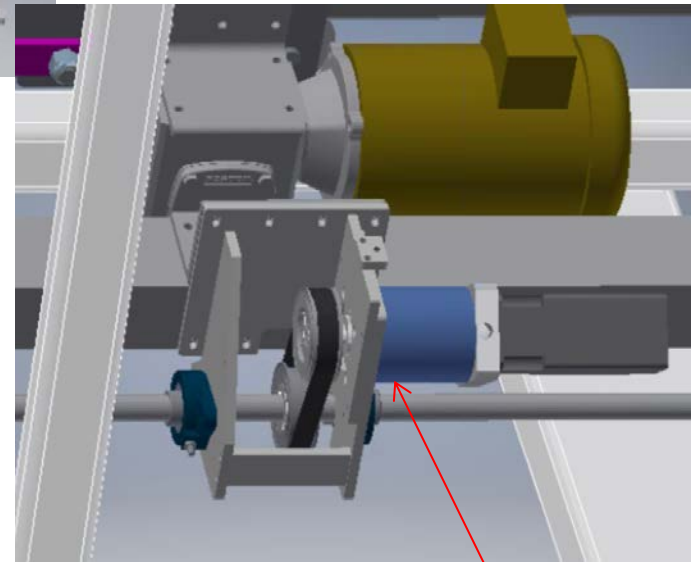
Conveyor drive

Product detect eyes

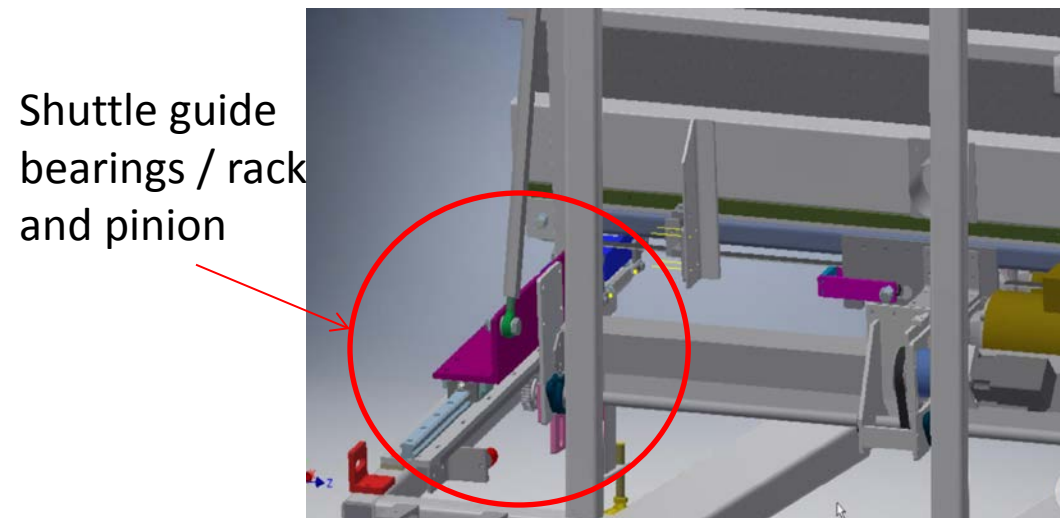




Conveyor belt
tensioning on
shuttle



Shuttle servo drive

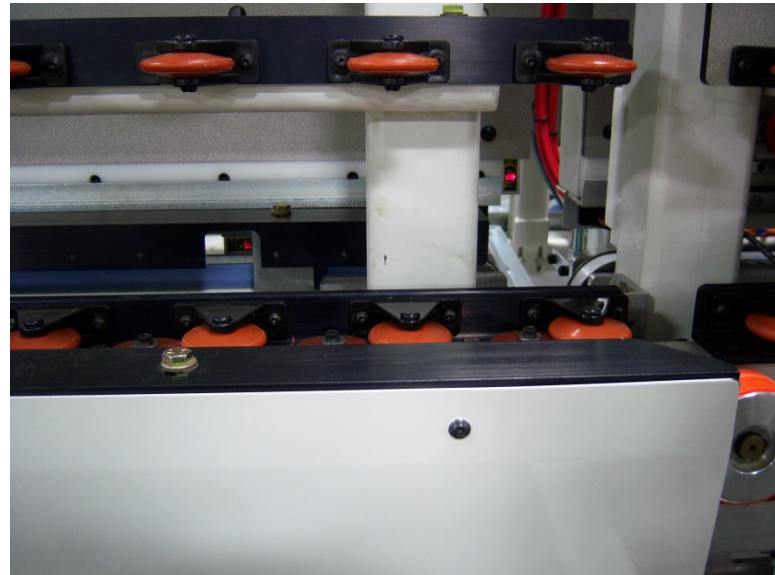


Shuttle guide
bearings / rack
and pinion

Infeed spacer applicator

Back lane closed prox

Product detect eyes



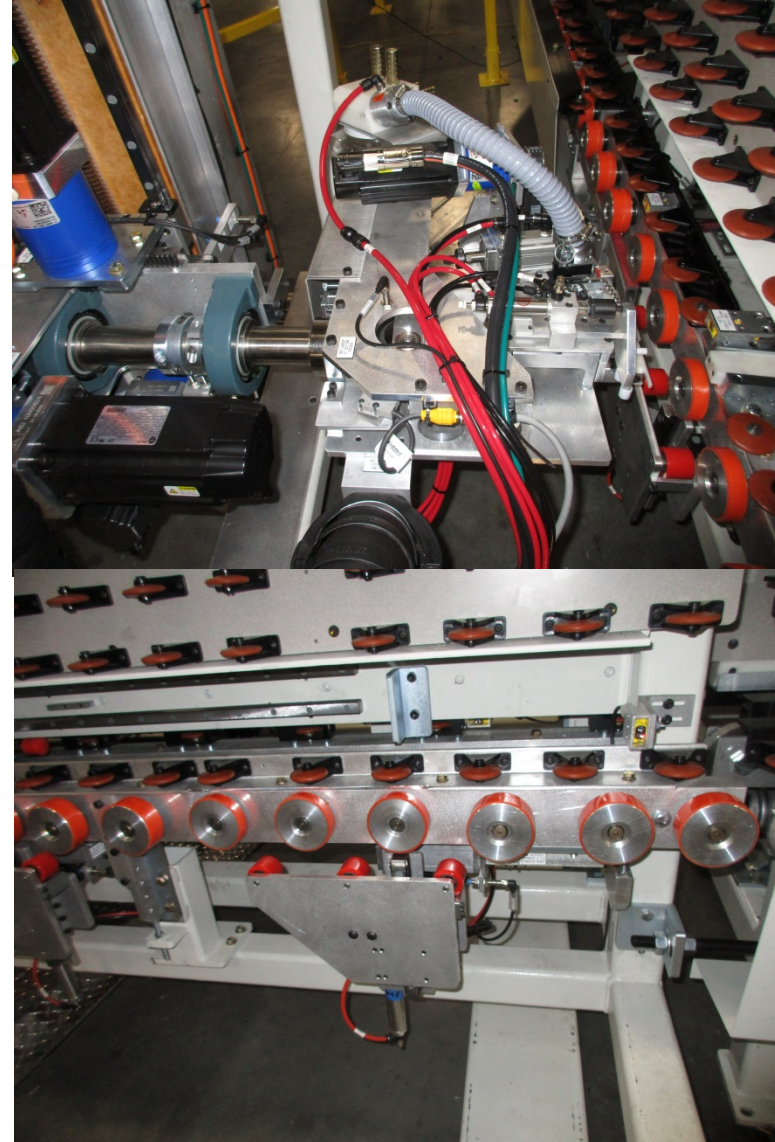
Spacer applicator

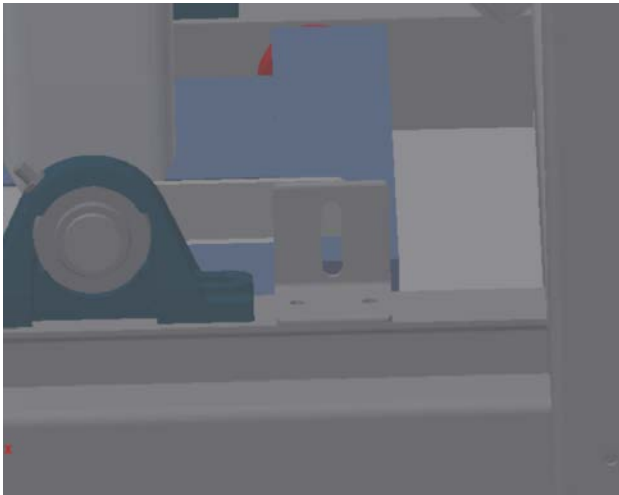
Backer removal station

Conveyor components

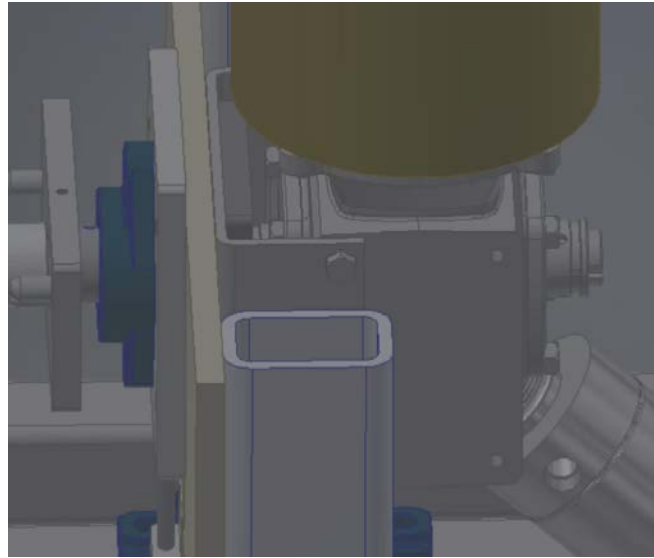
Application head

Eyes and sensors



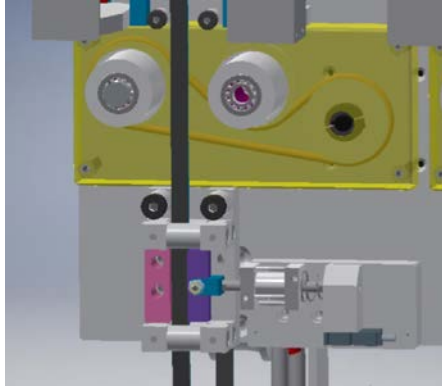
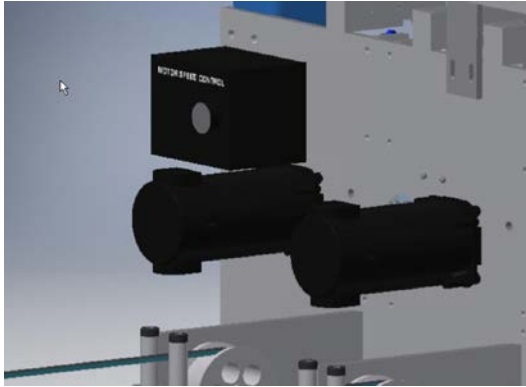


Spacer Drive Box Prox
Mount Bracket
(Reel Tip Angle)



Reel Drive Box

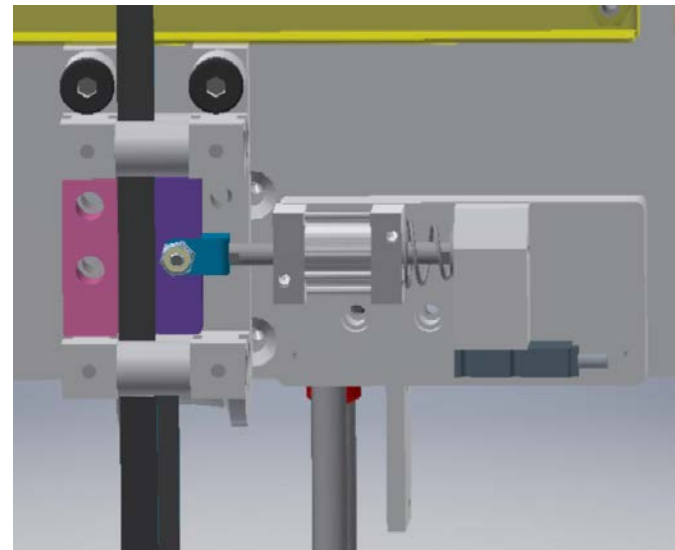
Blue Backer Friction Wheel Drive & Motors



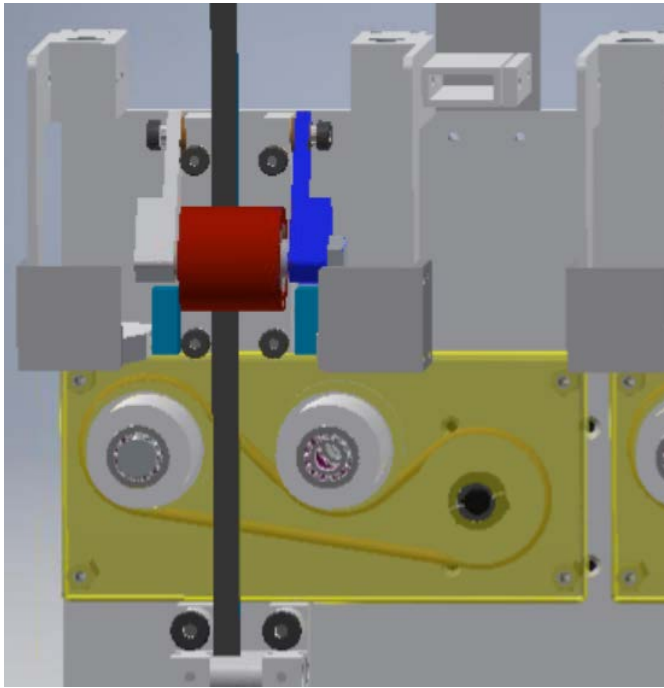
View of Blue Backer
Friction Roller Drive
Belt



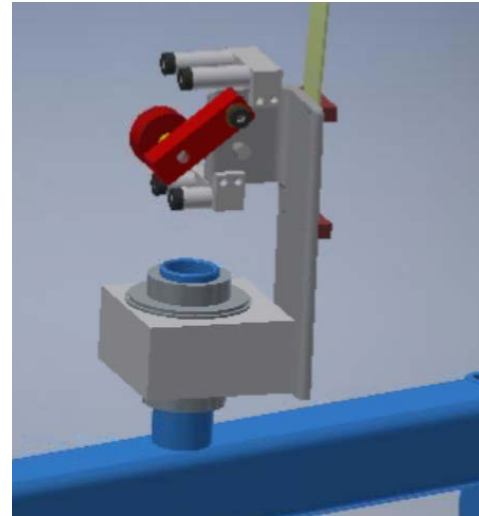
Big Dancer Laser
Mount



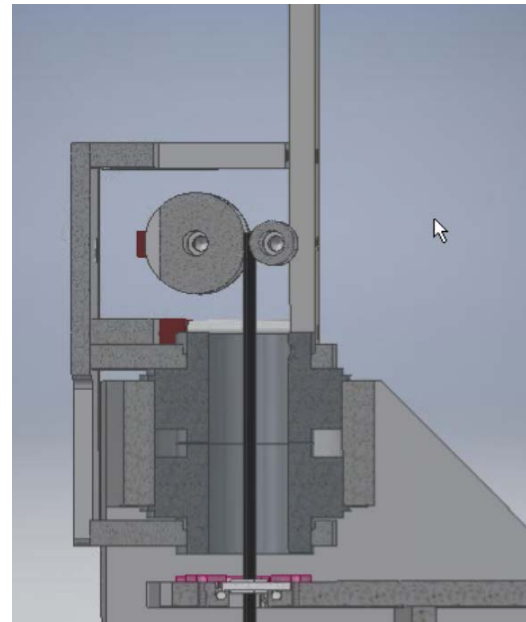
Spacer Thickness (Size)
Detector



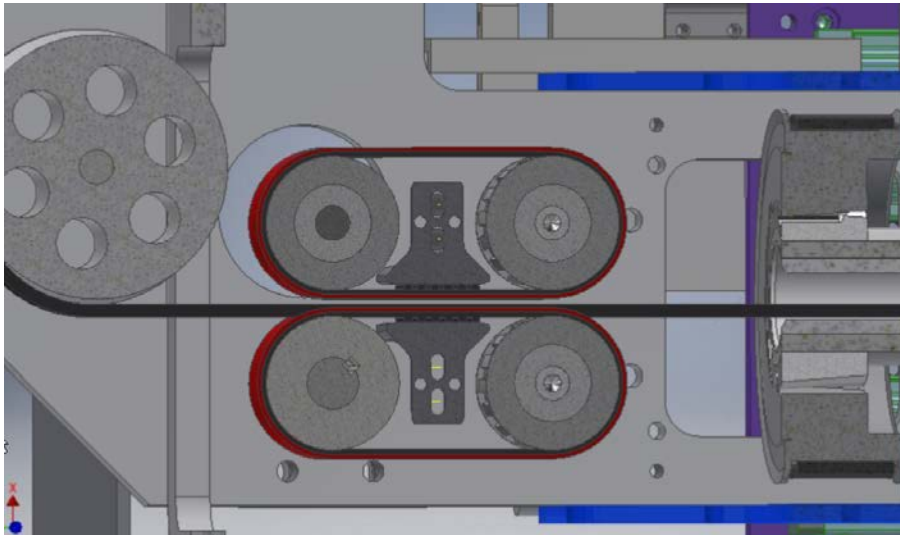
Spacer Hold Down
Roller (In conjunction
with Blue Backer
Removal Sensors)



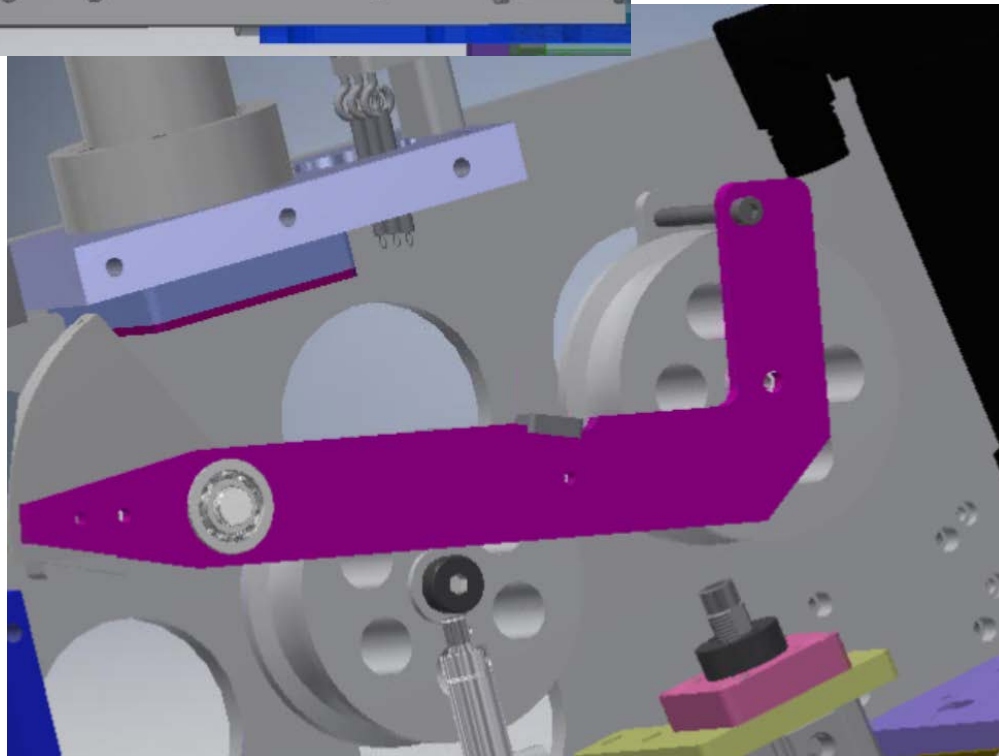
Spacer Hoop
Support Pivot
and Hold Down
Roller



Section View of
Spacer Support
Pivot

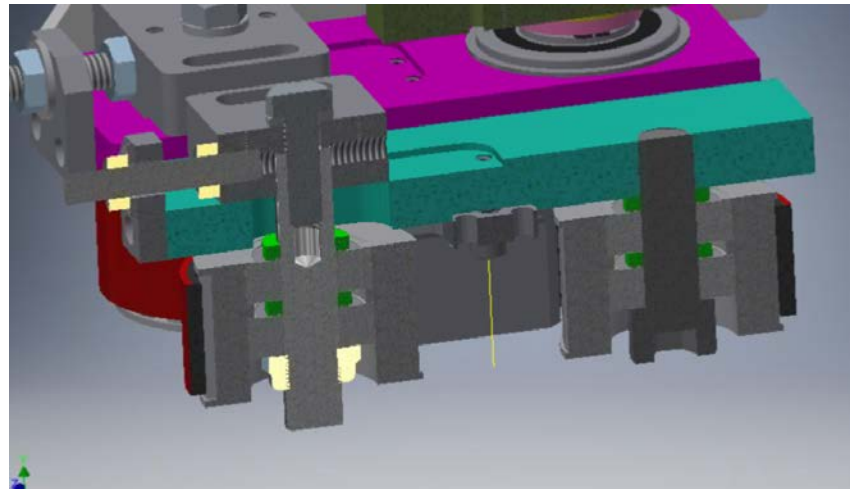
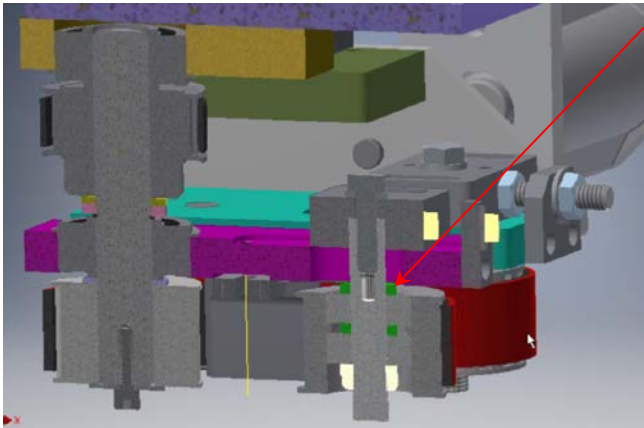
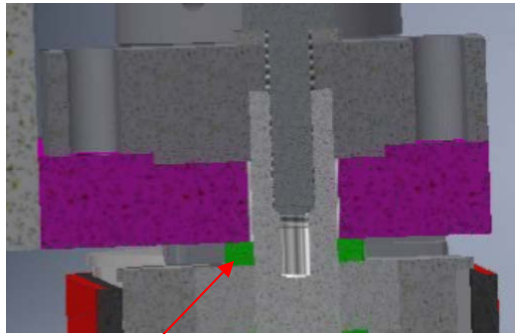


Section View of
Infeed Tractor
Drive



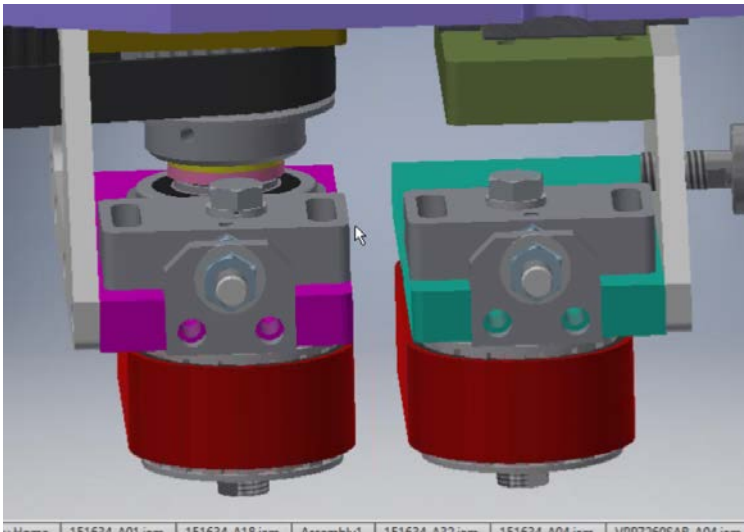
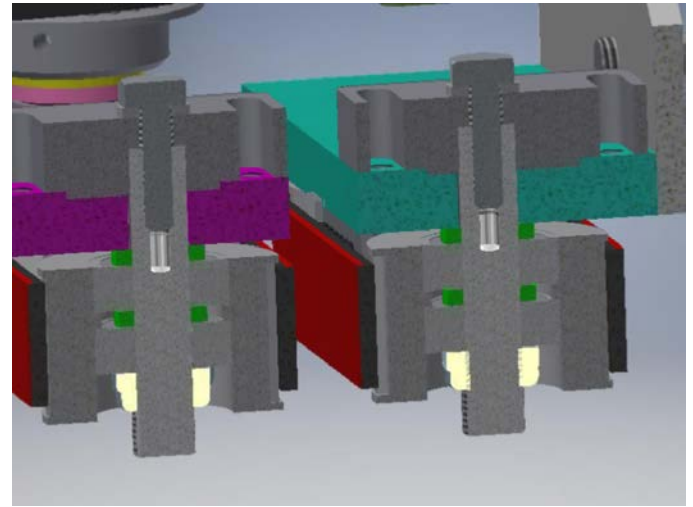
Exposed View
of Tiny Dancer

Drive Side
Side Section
View of Tractor
Drive

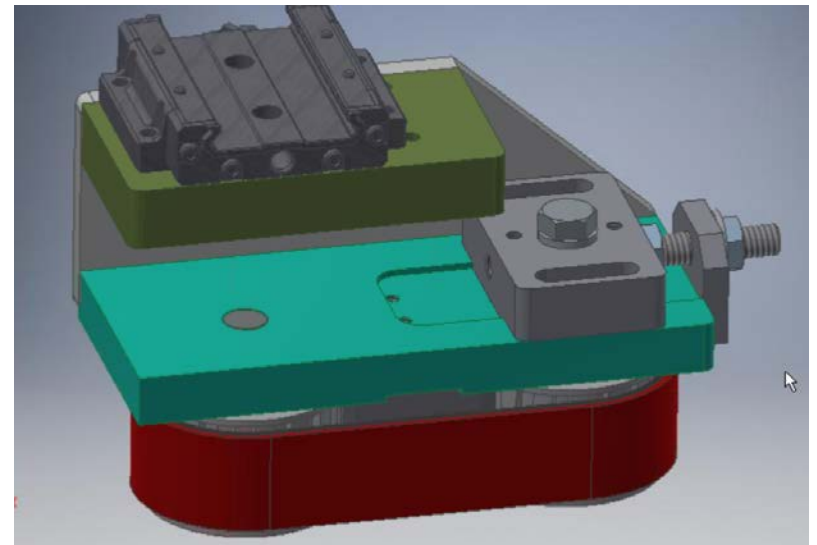


Floating Side
Side Section View of
Tractor Drive

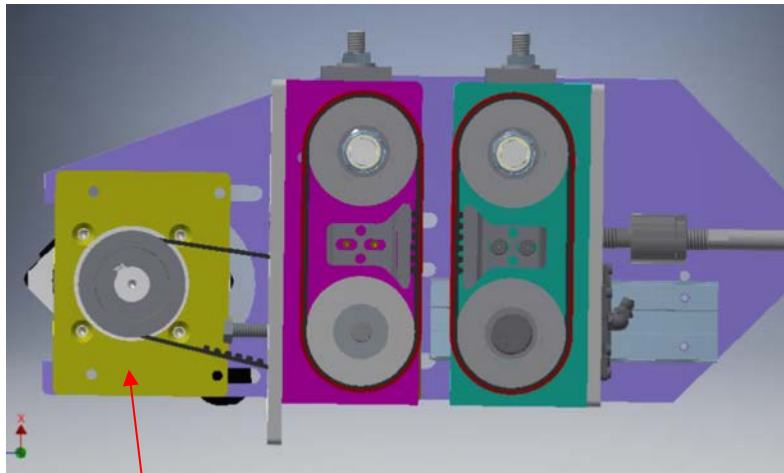
Tensioning End
Section View of
Tractor Drive



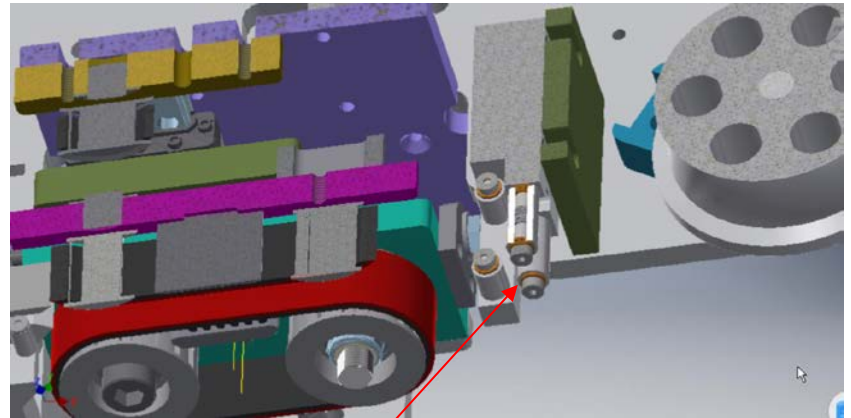
Tensioning End
View of Tractor
Drive



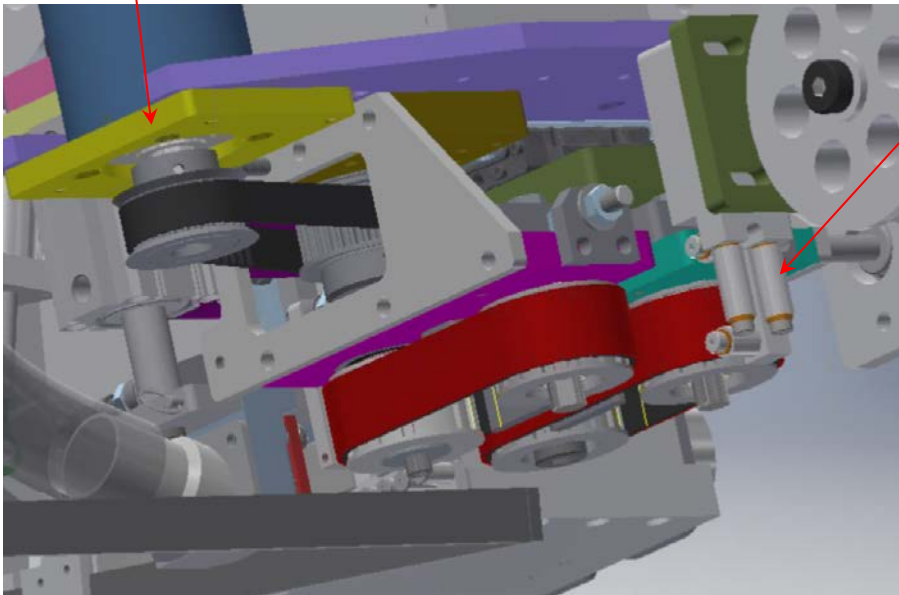
Tensioning Side View of
Tractor Drive

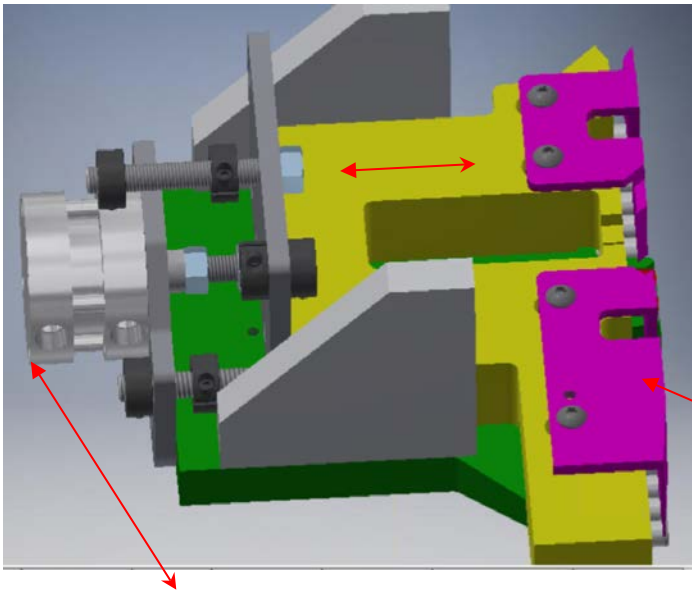


Section View of
Outfeed Tractor Drive



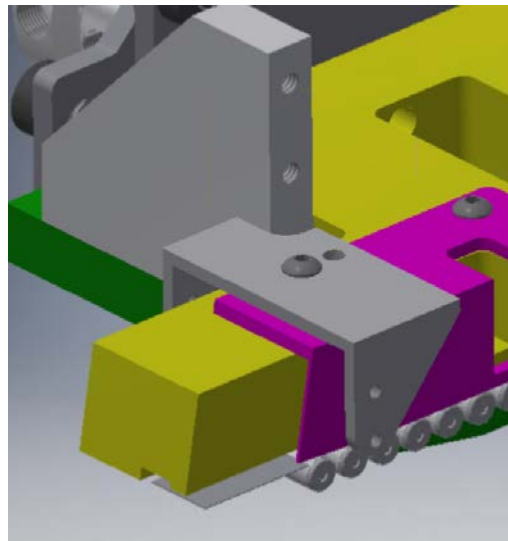
Section View of
Outfeed Tractor Drive
Floating Side



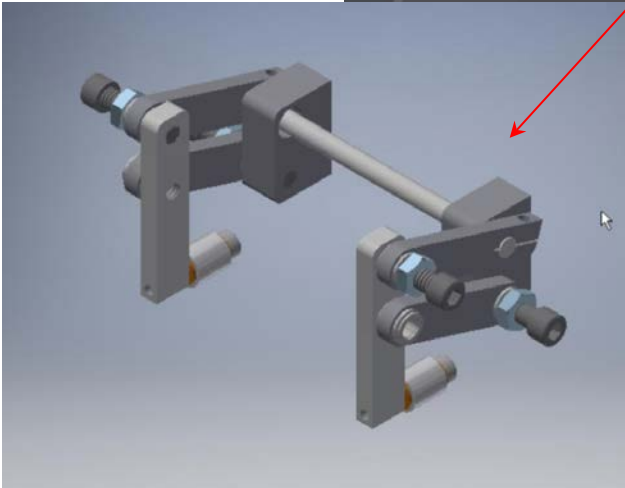
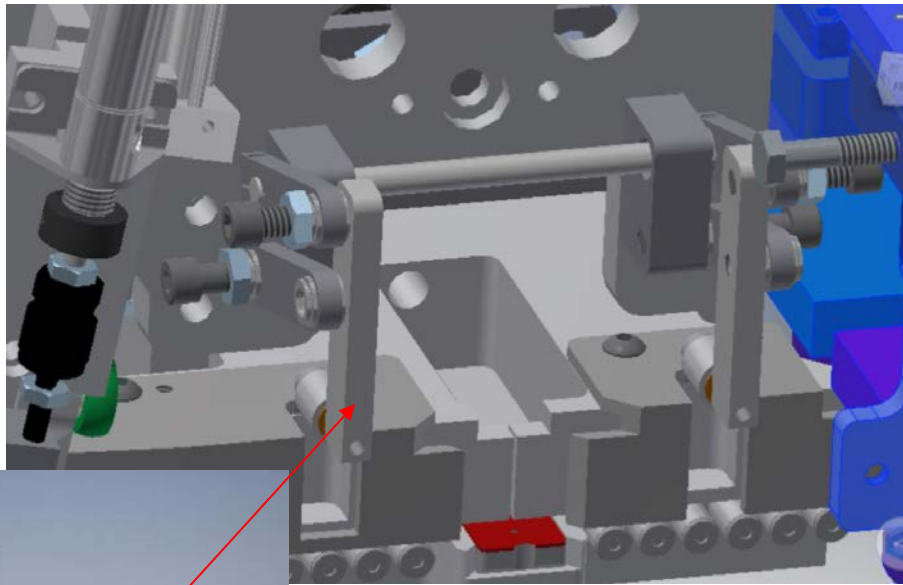


Spacer Guide
Work Assembly

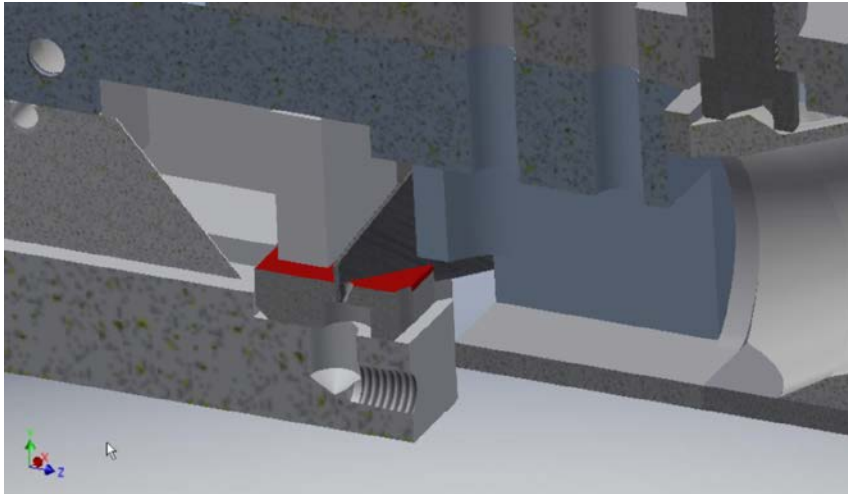
Spacer Clamping
Assembly for
Knife Cutting



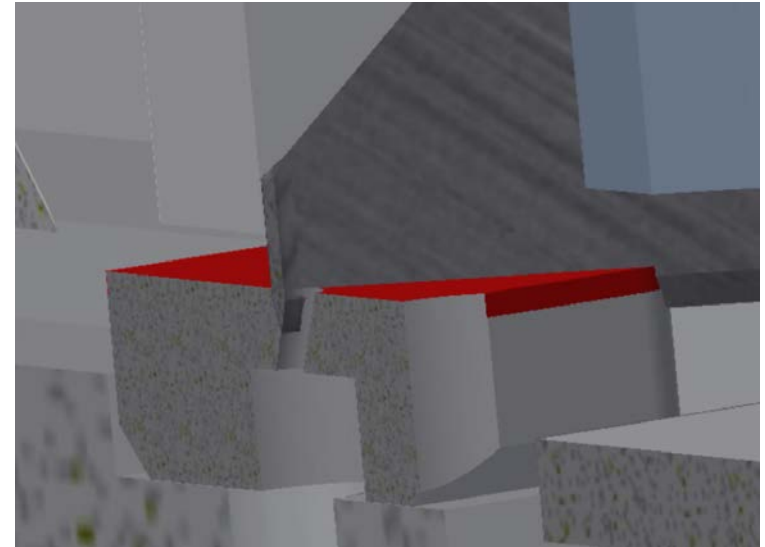
Spacer Prestart
Measuring
Fiber Optics
Mount



Down Roller
Assembly at
Knife Cutting
Area

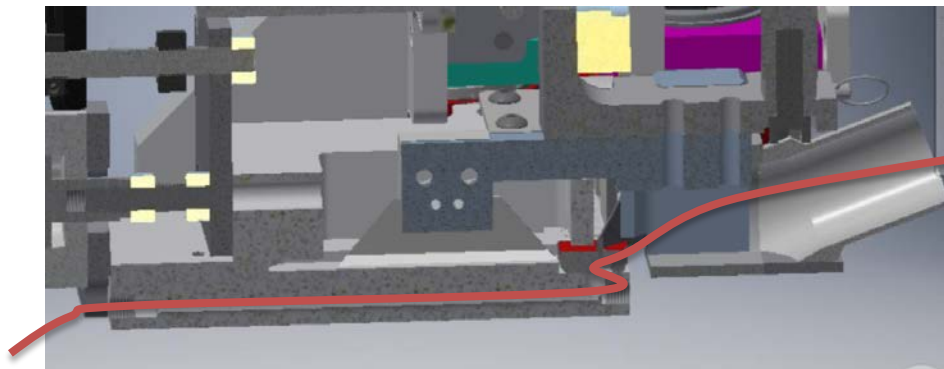


Section View
showing Knife
Backer

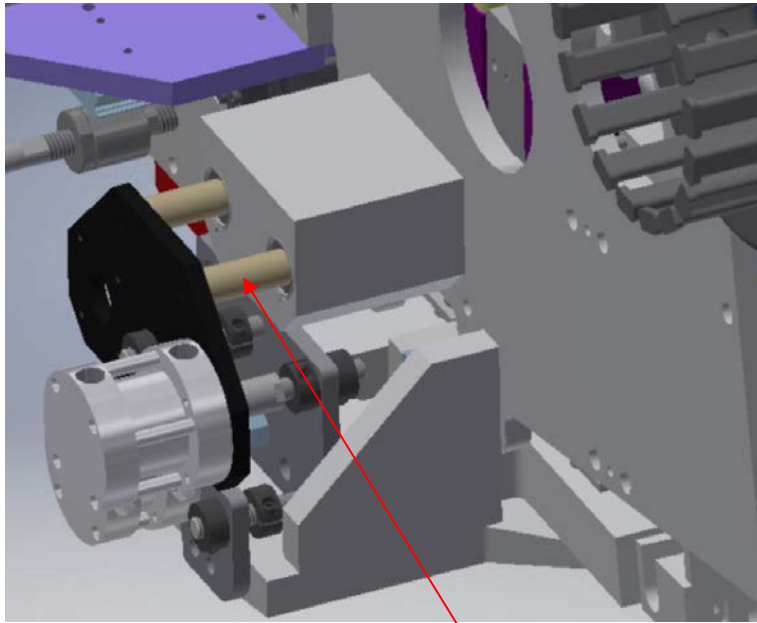


Section View
showing Knife
Cut Depth

Air Blast Inlet
for Chad
Removal

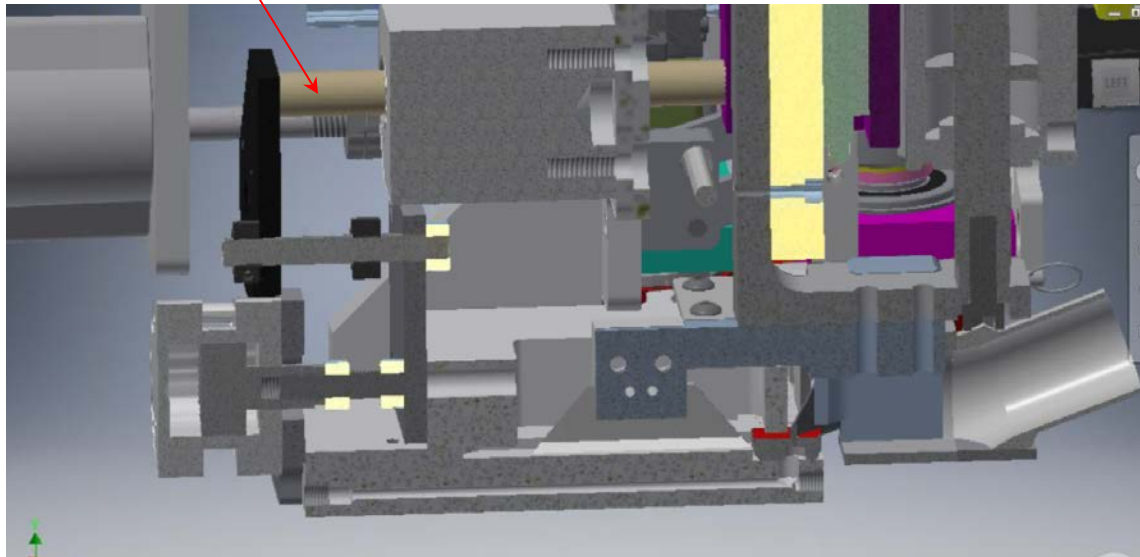


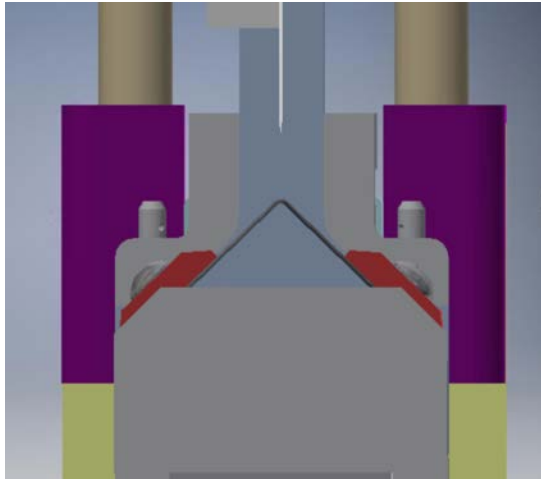
Hose Fitting for
Chad Collector



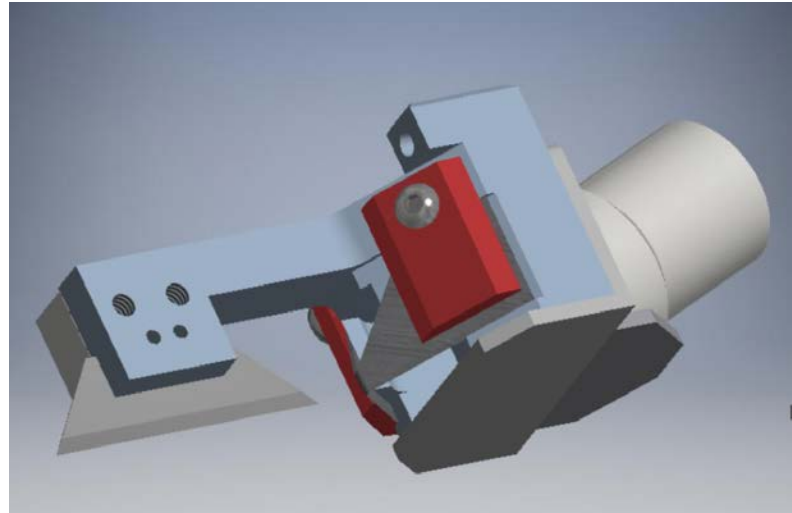
Side Clamping and
Knife shift
(Straight vs
V-Notch Cut)

Section View of Side
Clamping and Knife shift

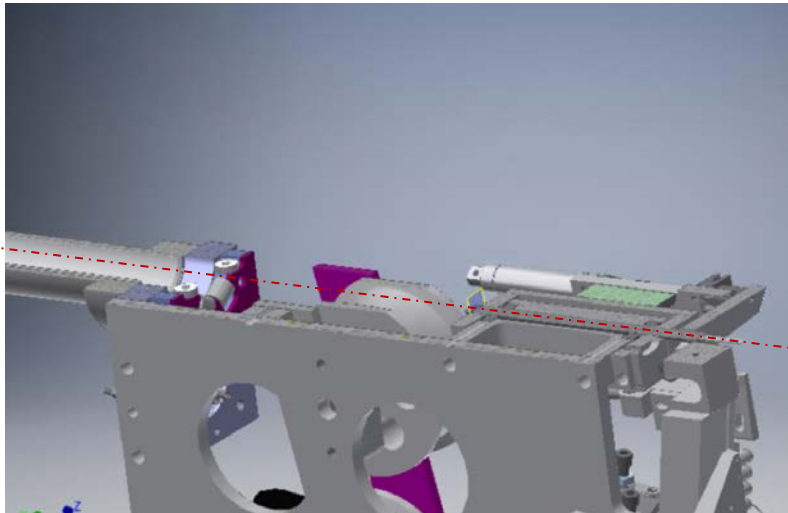




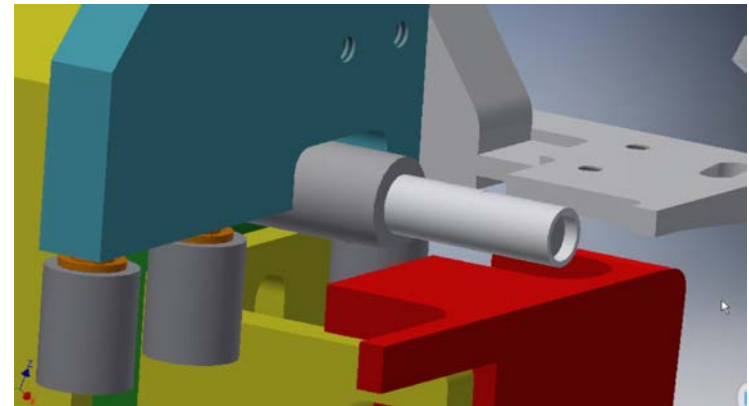
Alignment View of Bottom
Side of Knife Assembly



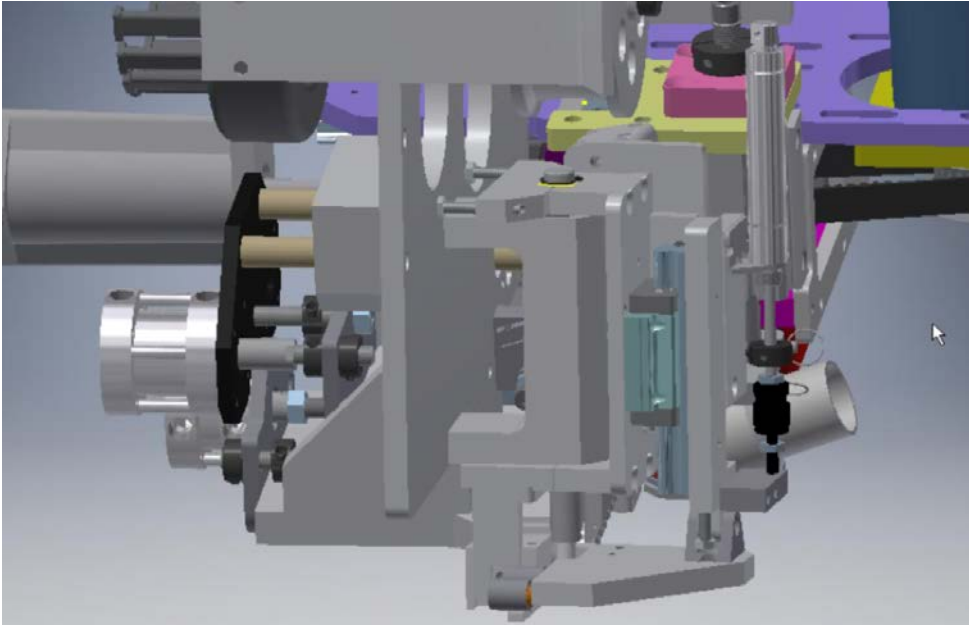
Model of Knife Holder
Assembly



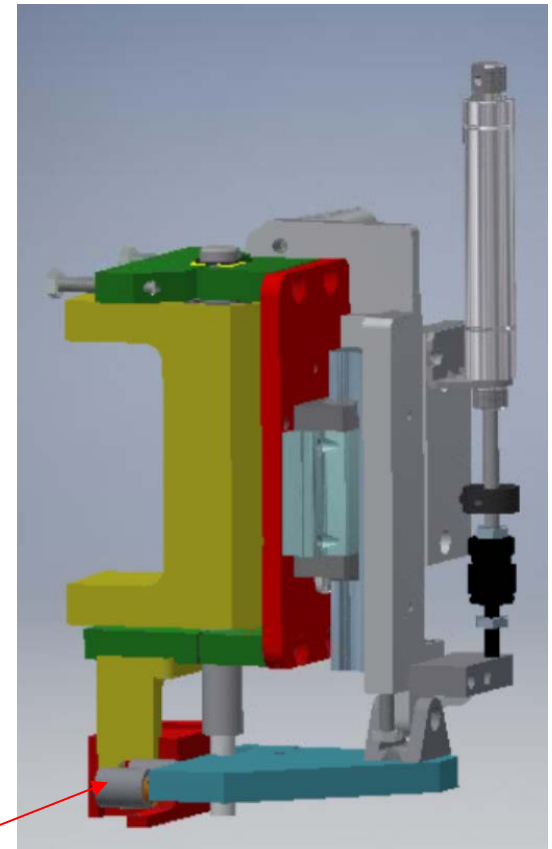
Section View of Center Line
(Index Shaft to Corner Pin)



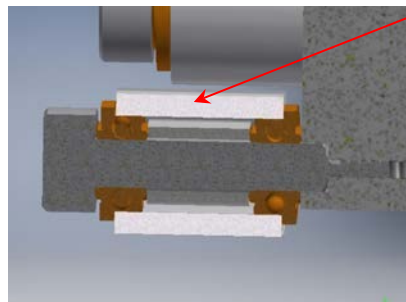
View of Corner Pin Through
Hold Down Roller Assembly



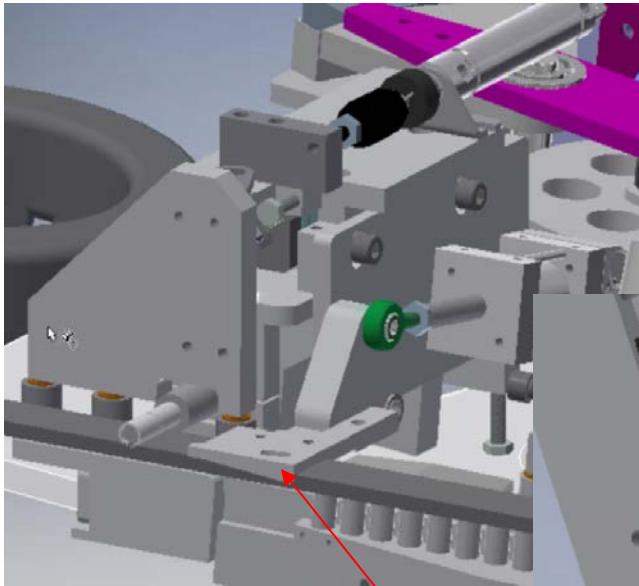
Assembly View of Hold
Down Roller Assembly on
SAM Head



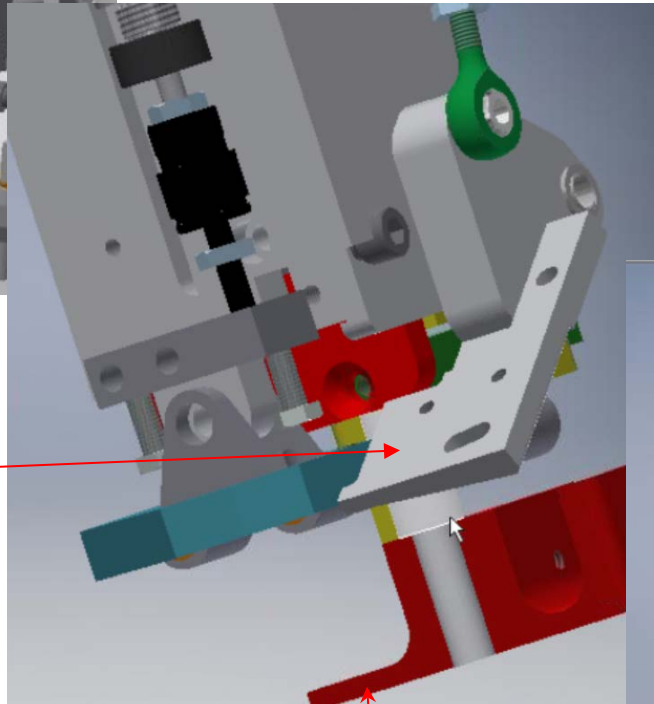
Hold Down Roller
Assembly



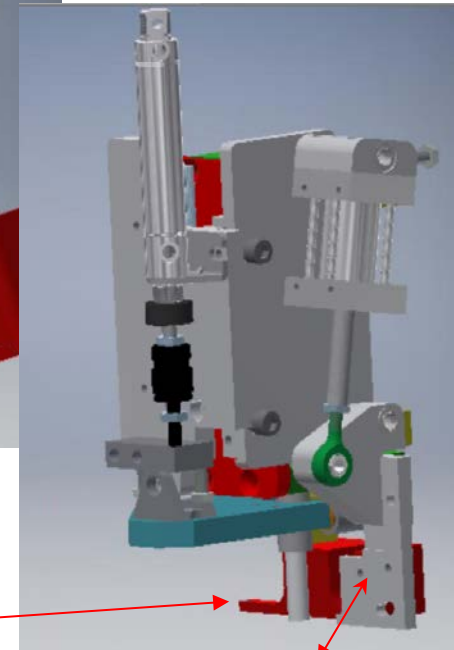
Section View
of Application
Down Rollers



(Retractable Guide Work
(During Start / Stop
Corners))



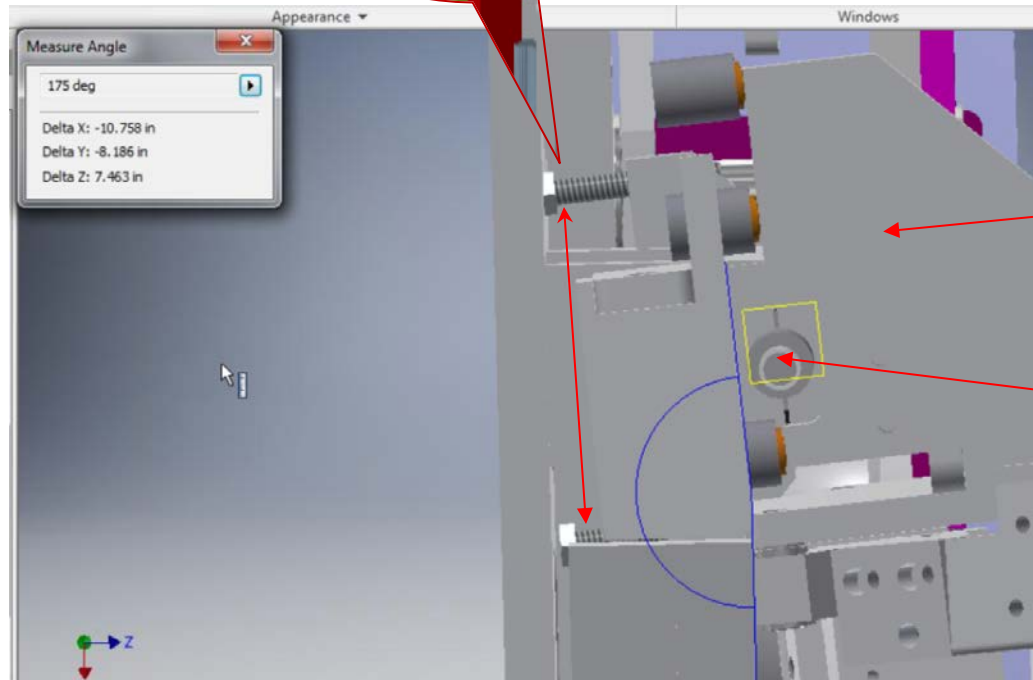
(Delrin Stationary
Guide Block)



(Retractable Guide
Work....Extended View
(During Application))

Views of Motion of
Retractable Guide Work

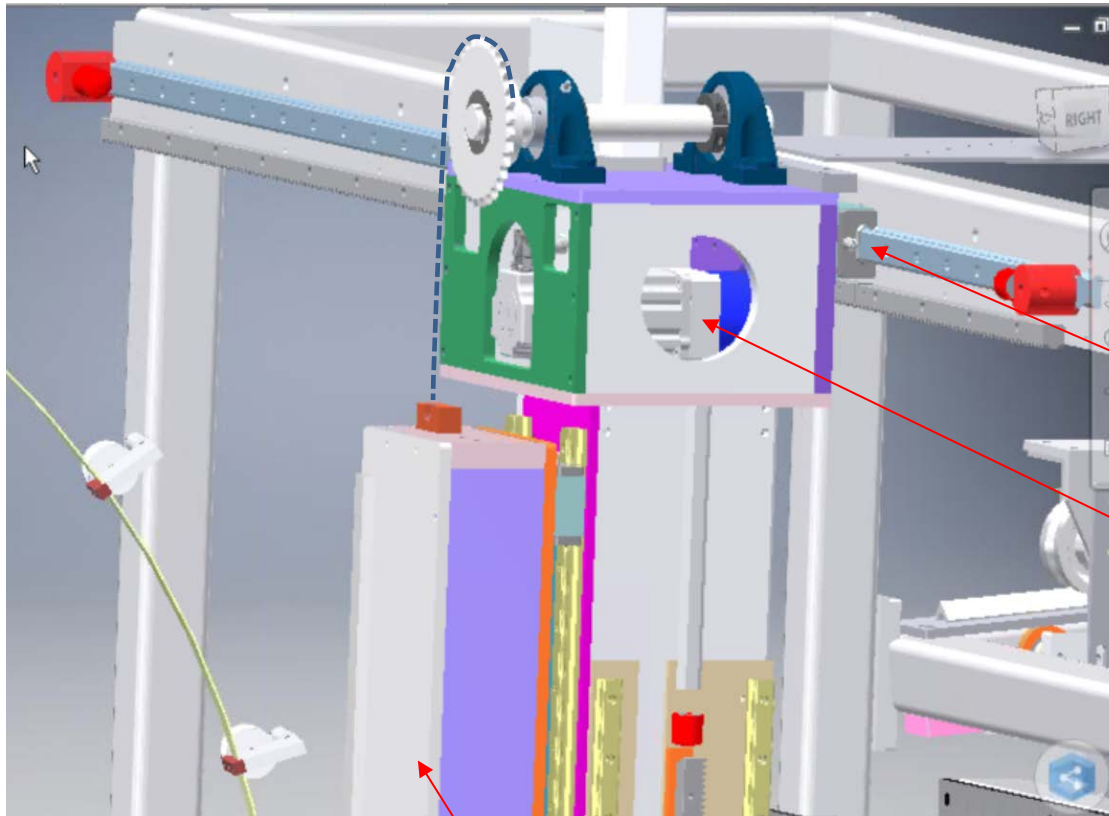
(Down Rollers & Stationary
Guide Block
Assembly Adjustment Bolts)



(Down Rollers
Assembly)

(Corner Pin)

Bottom View of Stationary
Guide Block
Showing Application Angle
(5 degrees (Parameter
Controlled))



Exposed View of SAM
Gantry at the TOP
Showing Drive &
Counterweight

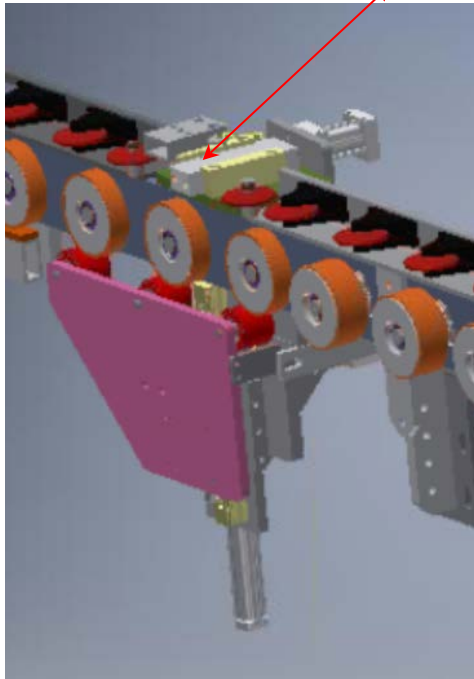
(X Axis Linear
Bearings & Rail)

(Upper X Axis
Servo Drive)

(Counterweight Assy)

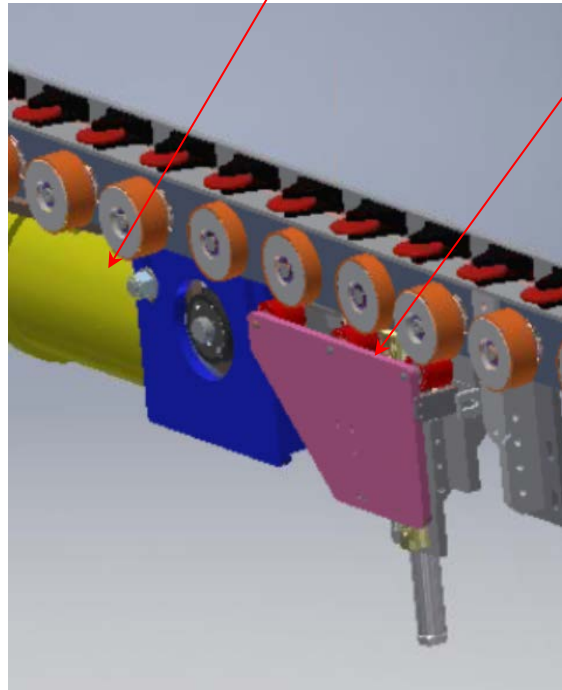
Exposed Rear View of SAM IG
Transfer Roller Drive System

(Infeed Stop)

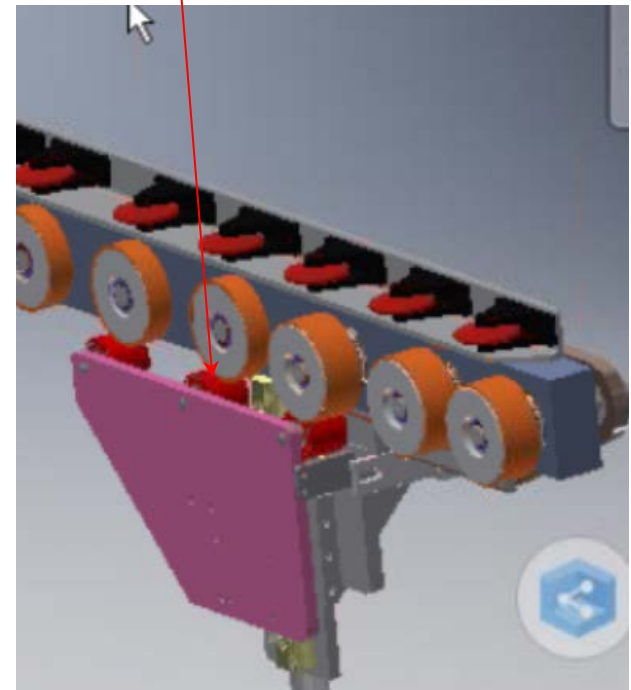


Front View of SAM
IG Transfer Roller Drive
At Infeed Stop

(Drive Motor)



(Retractable Support
Rollers – Used During
Transfer Only)



Front Views of SAM IG
Transfer Roller Drive System

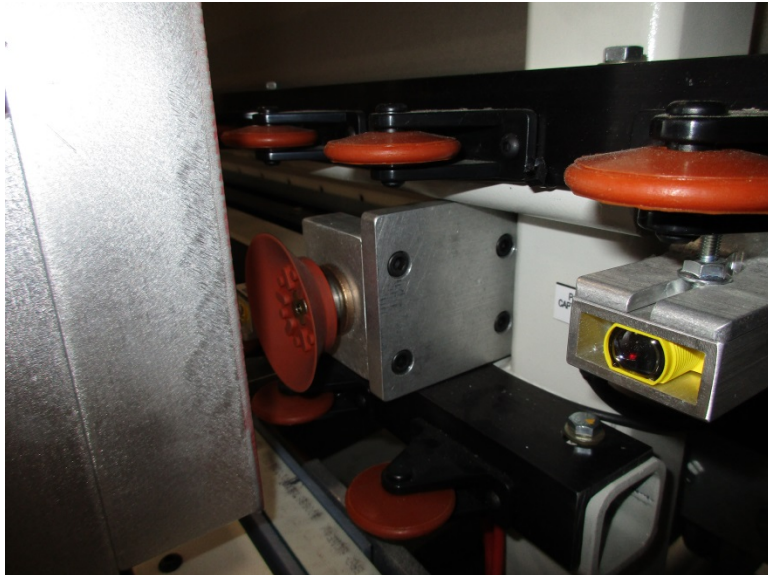
Outfeed spacer applicator

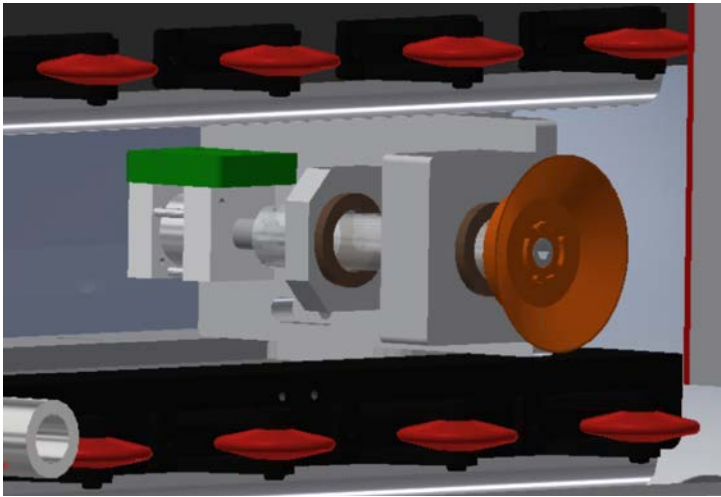
Print station

Cap tube station prox

Front and back lane product

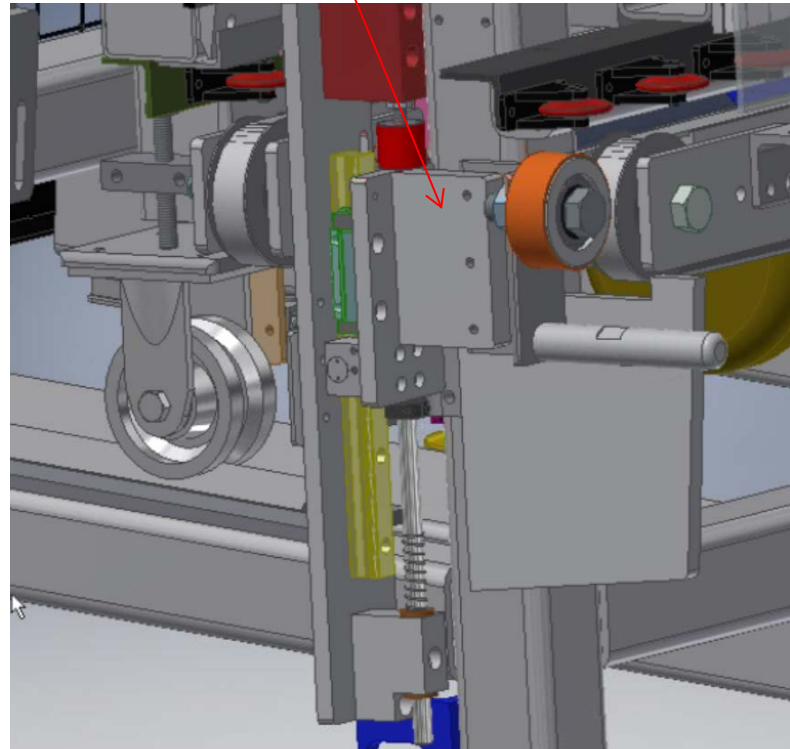
Detect eyes

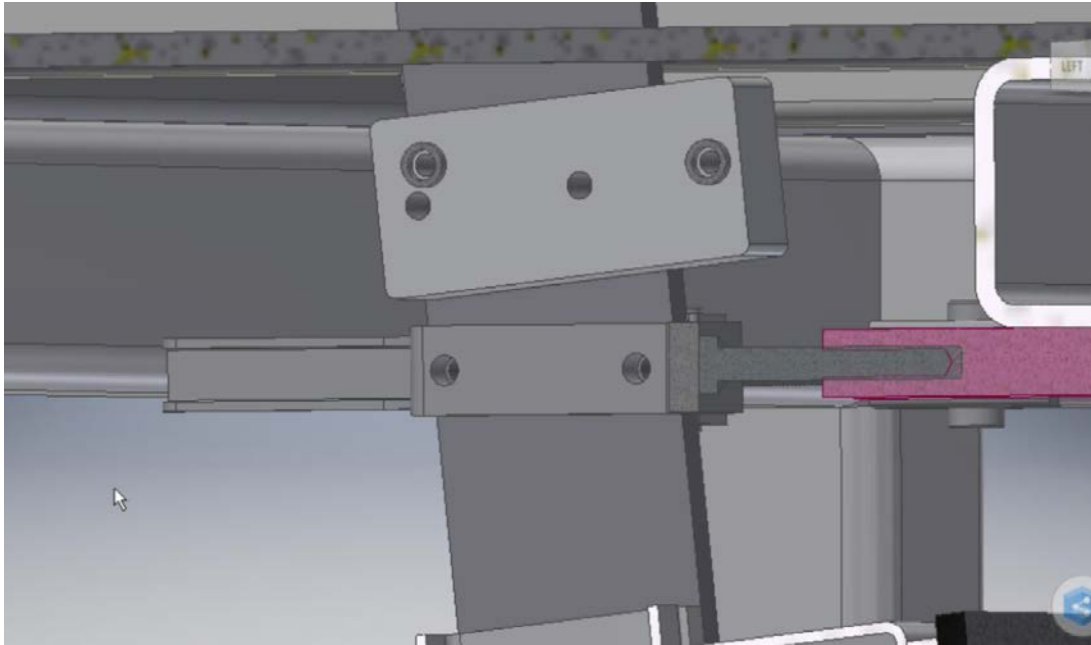




Cap tube station support cup assy

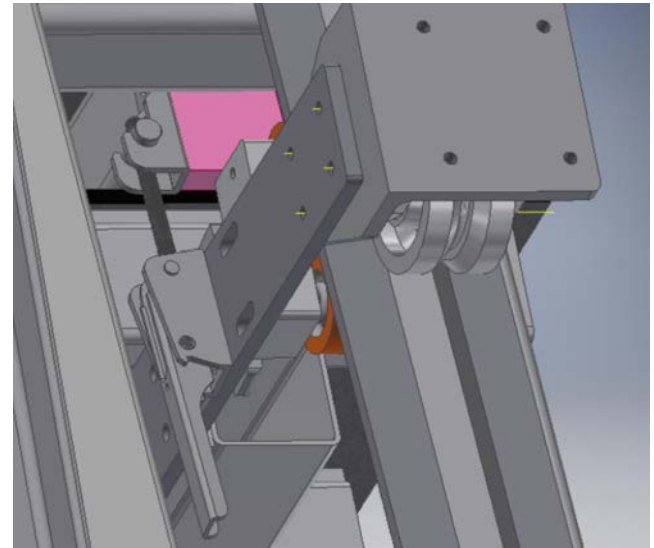
Cap tube station drop roller
assy.

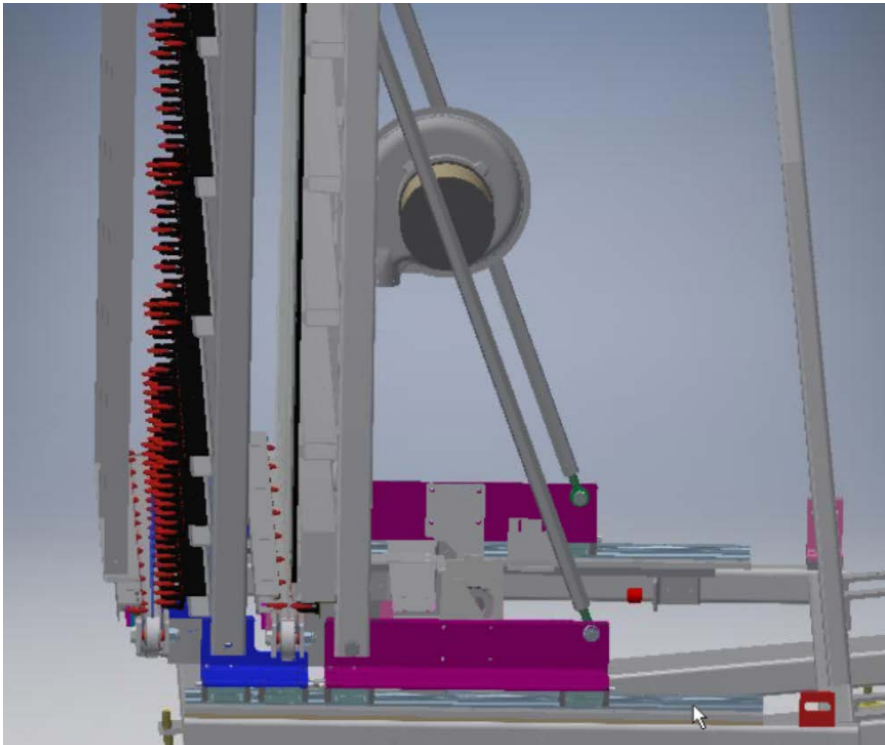




Section view of back lane clamp

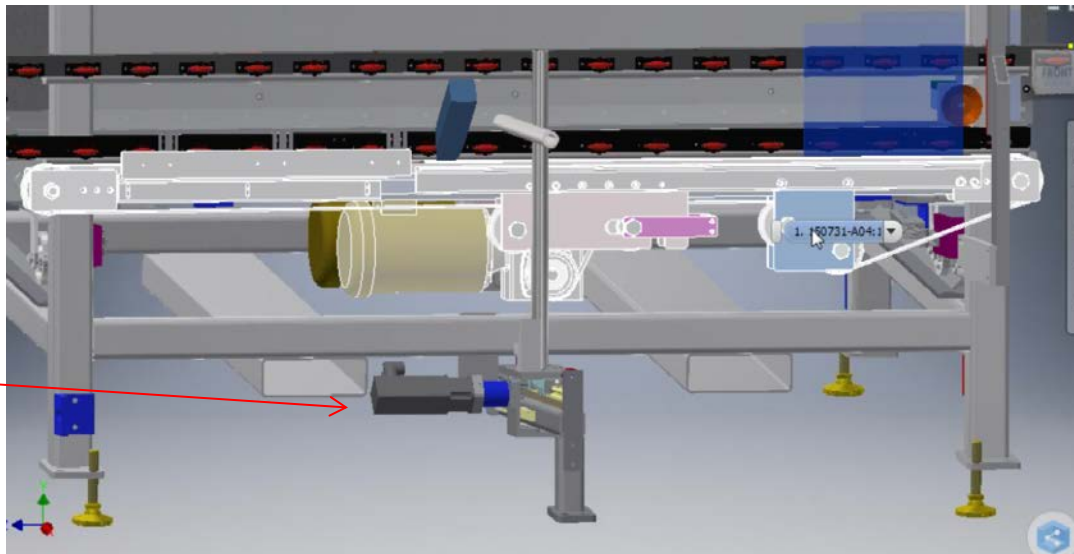
Top view showing
back lane clamp
and v-wheel

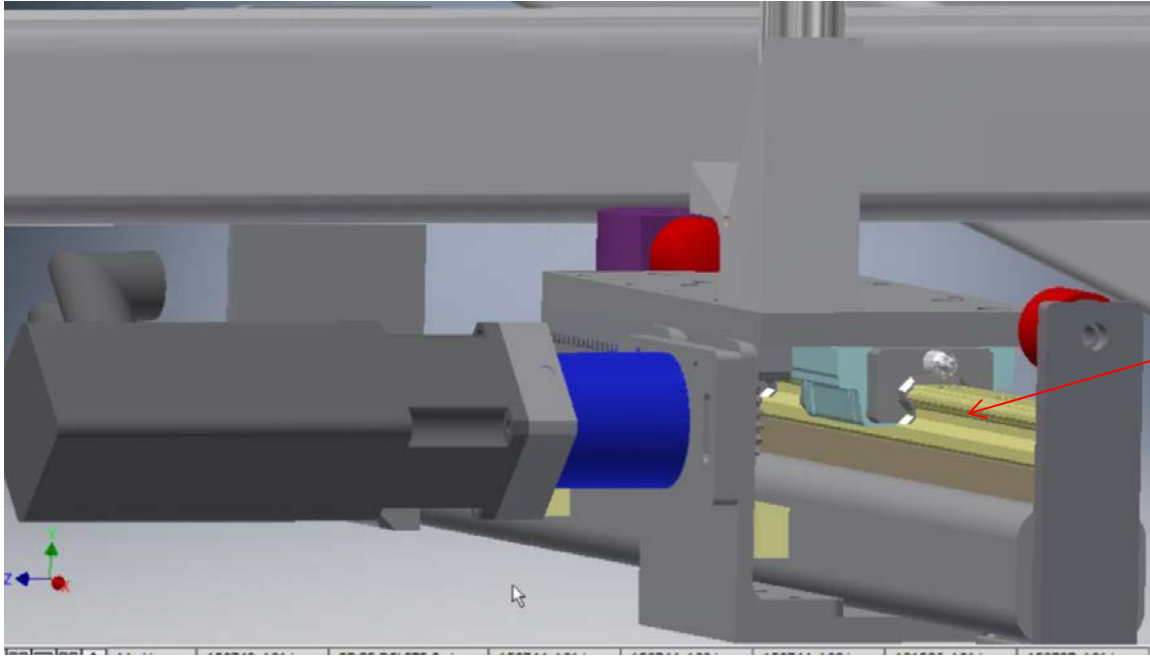




Shuttle station

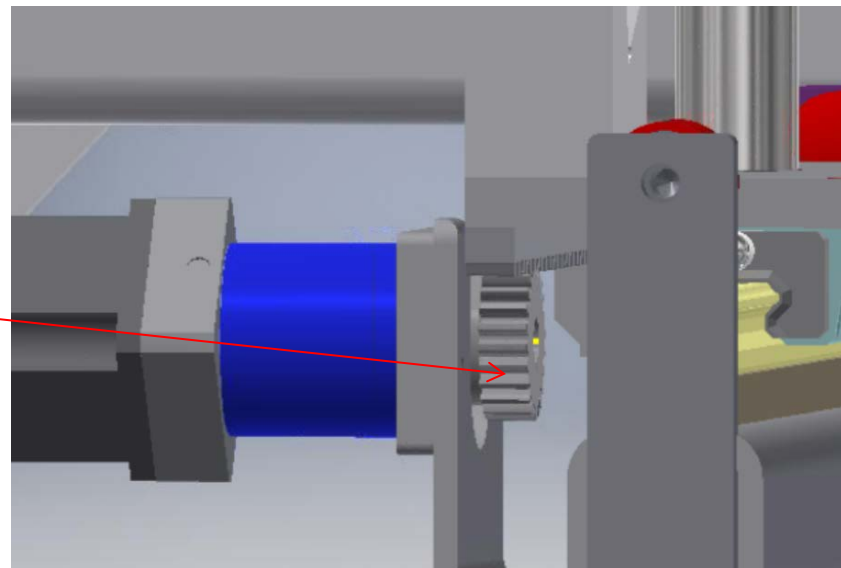
Optional Printer assy
mounted to queue
station





Optional printer station
servo drive guide rail

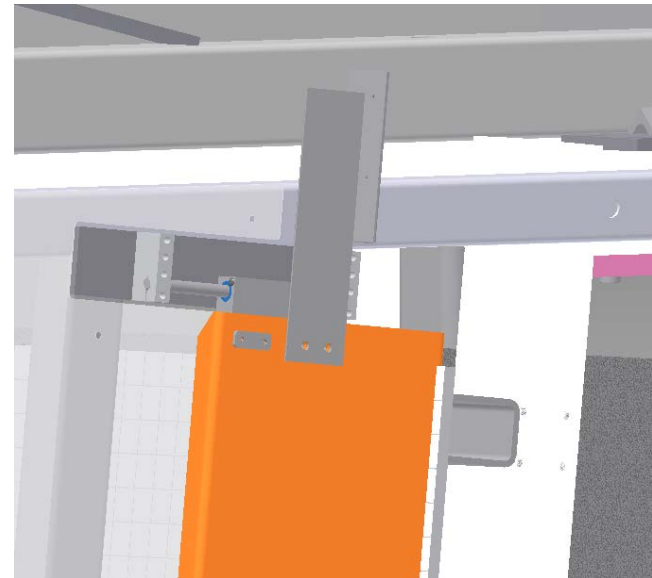
Optional printer station
servo rack and pinion
drive

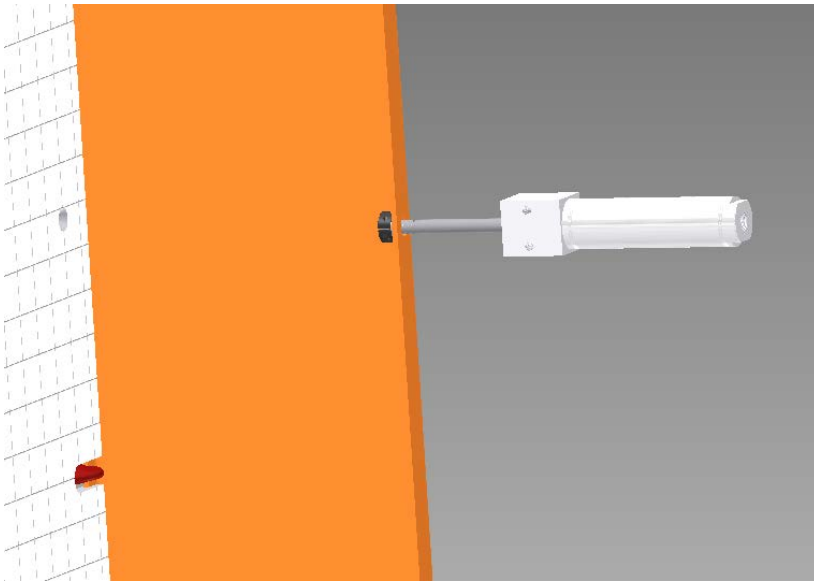


Grid apply

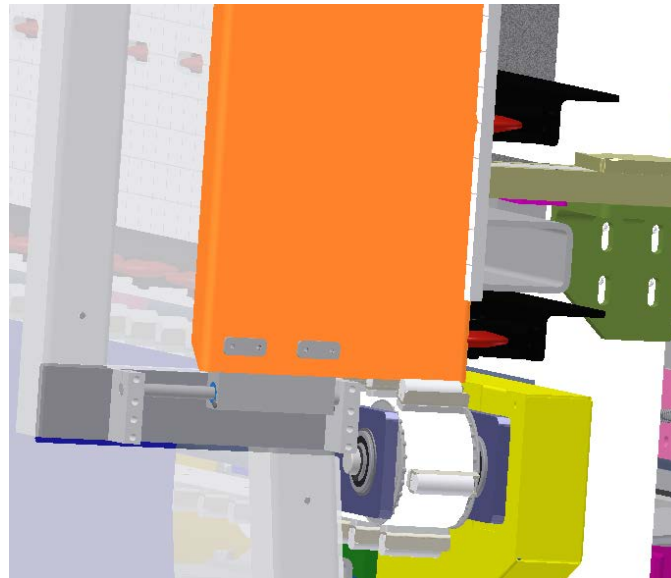
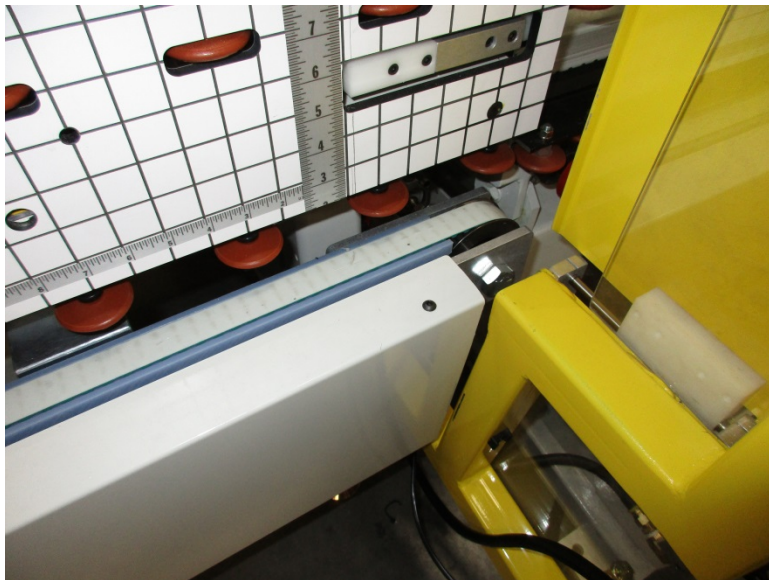
Safety gate magnetic safety switch

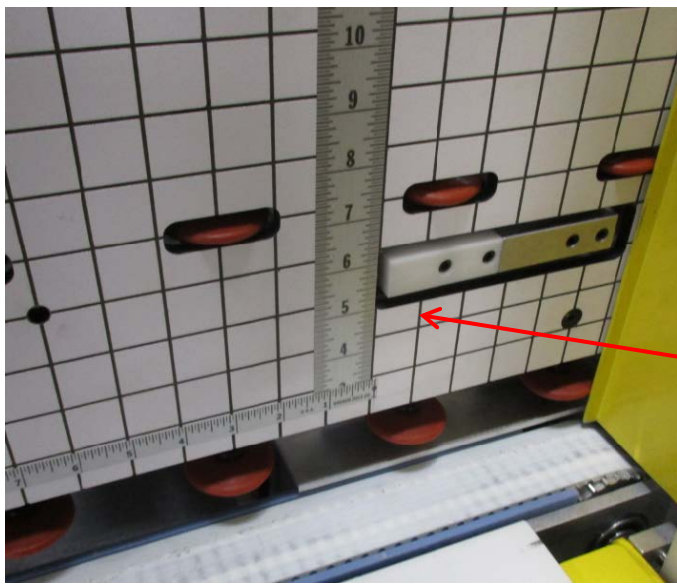
Front and back lane product detect eyes





Safety gate operation powered open
spring assist close





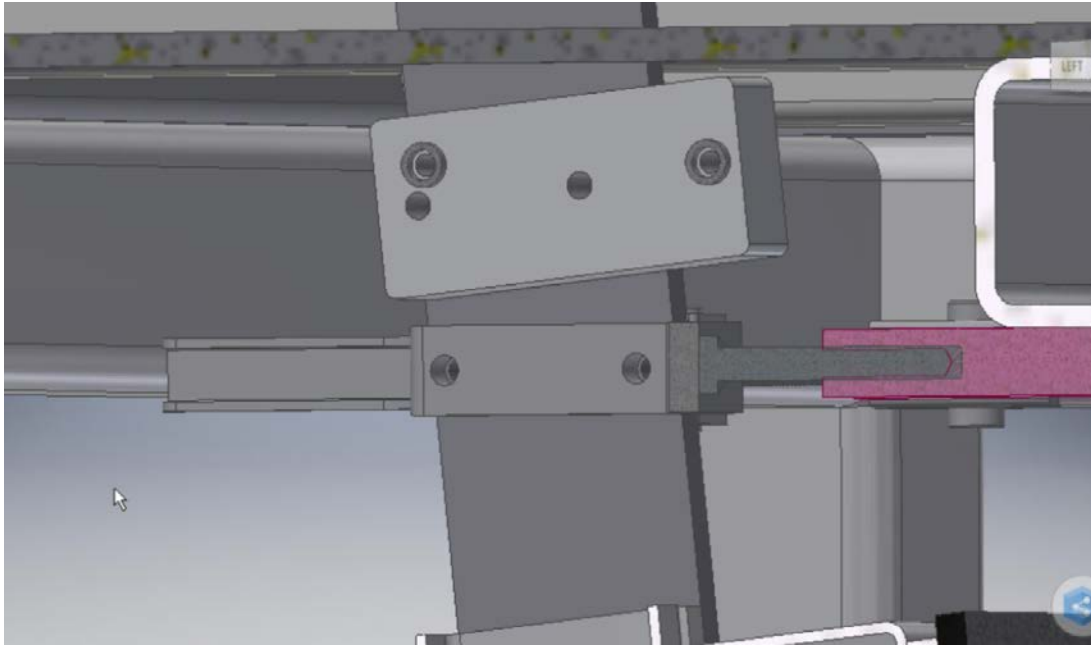
Grid station
reference stop



Grid laser display unit

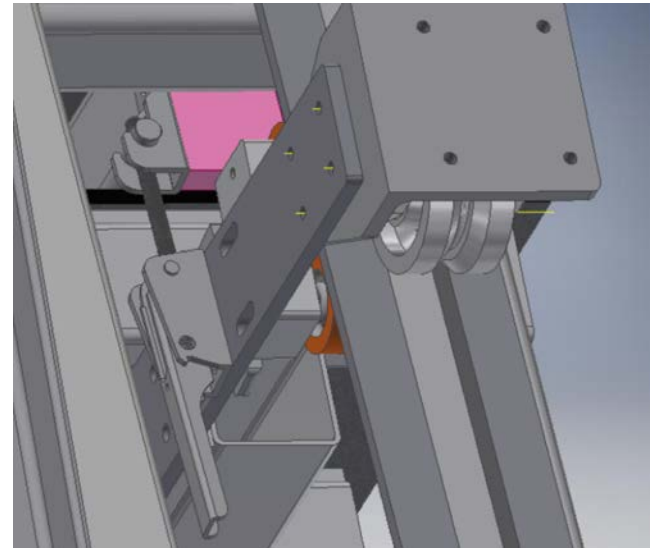


Grid apply station



Section view of back lane clamp

Top view showing
back lane clamp
and v-wheel



First shuttle

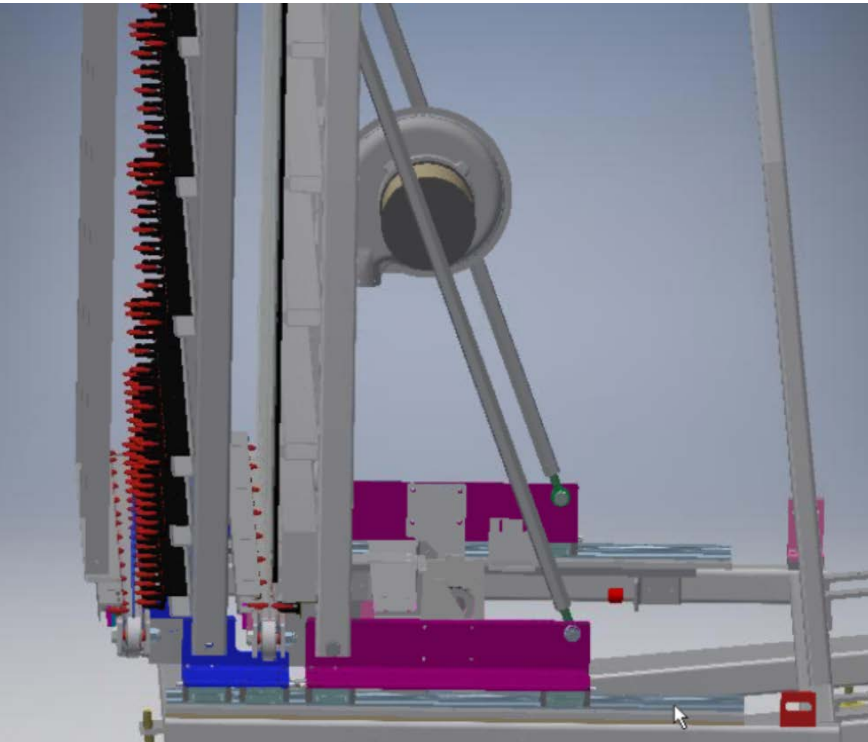
Infeed and outfeed product detect eyes
Home and over travel proxs



Gas press infeed Shuttle station



Staged and outfeed eye

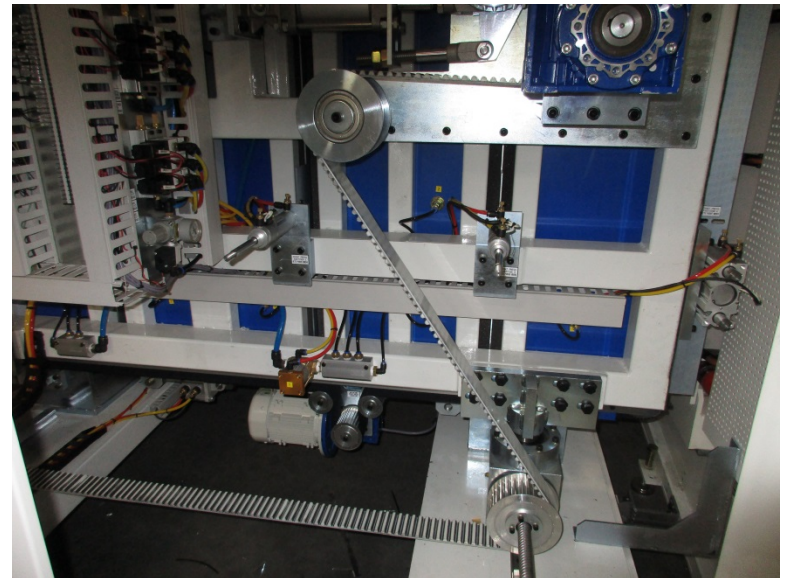
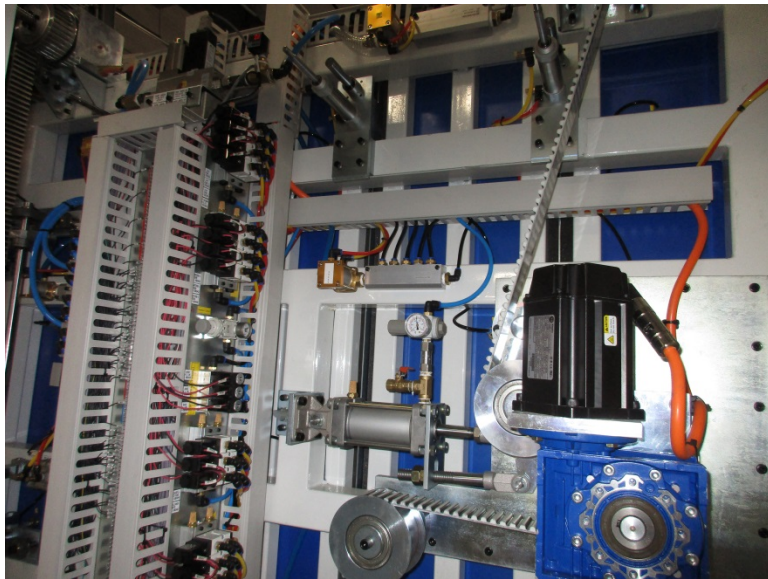
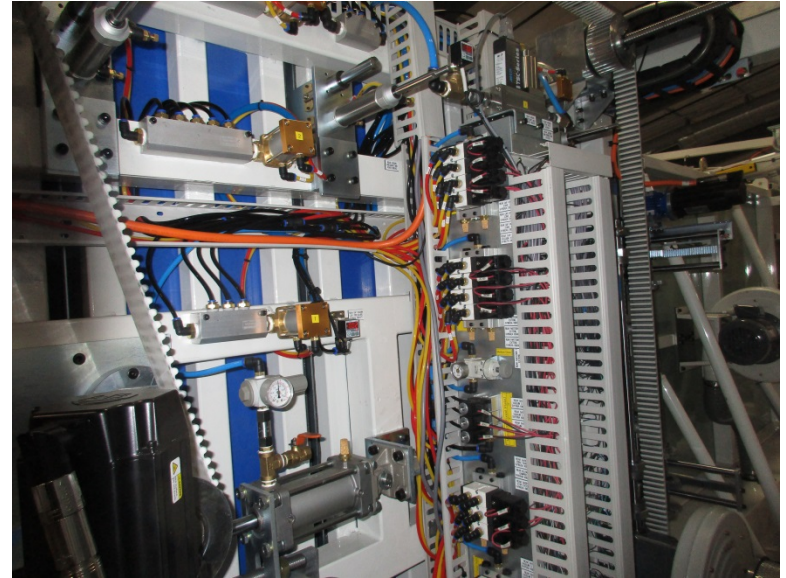


Dual chamber gas press

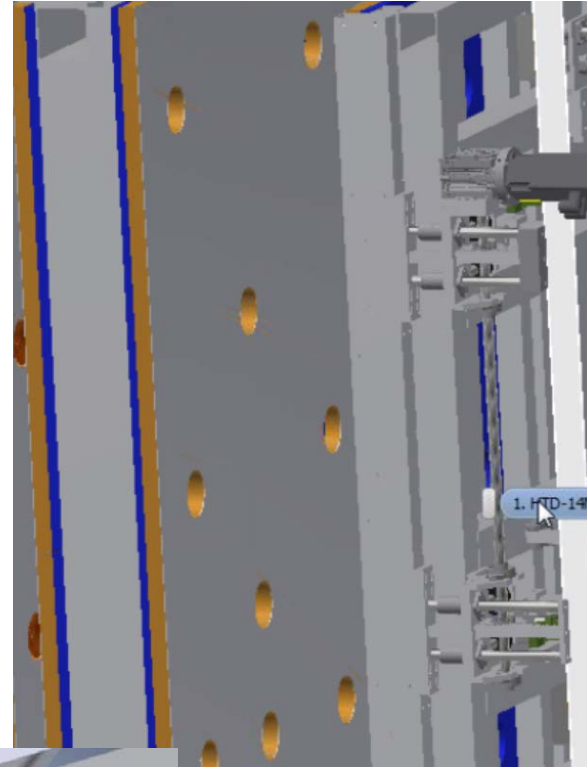
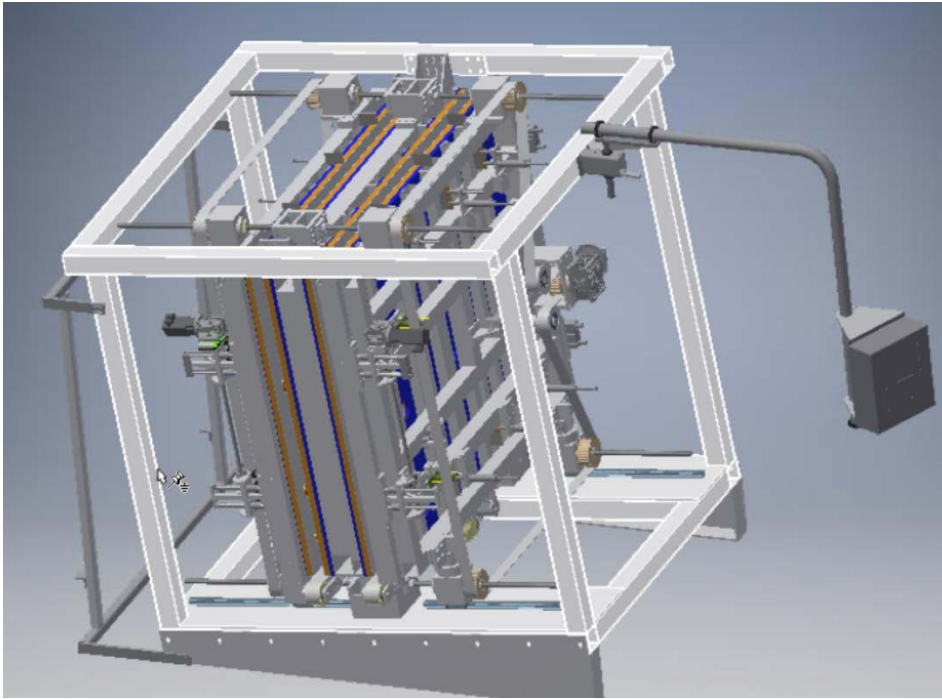
Drive components

Vac, gas sensors

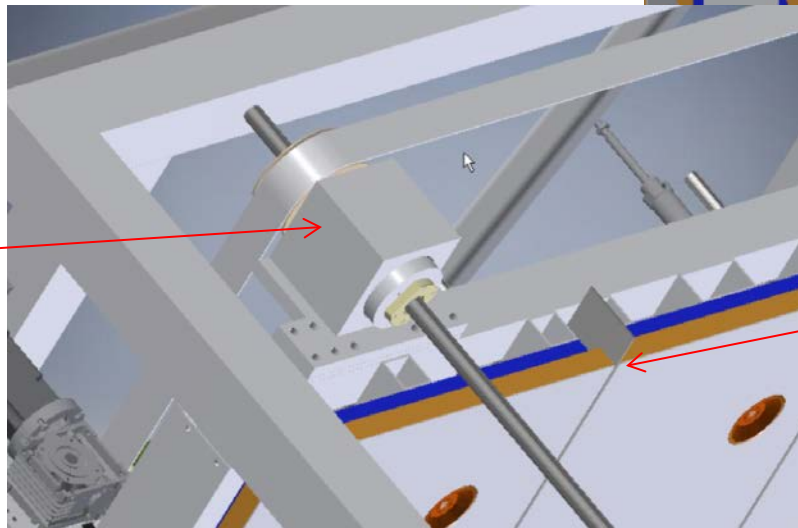
Prox and Halifax switches



Gas press guarding removed



Upper ball
nut housing

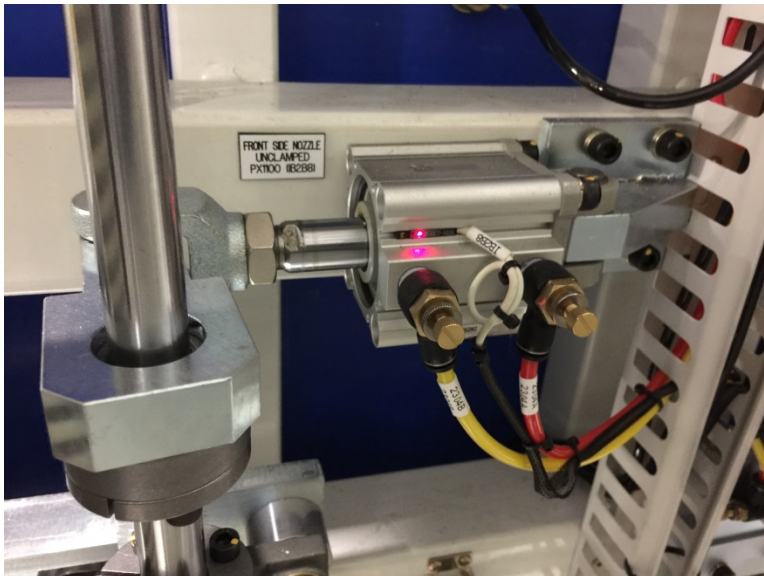


Top view
showing
Partition

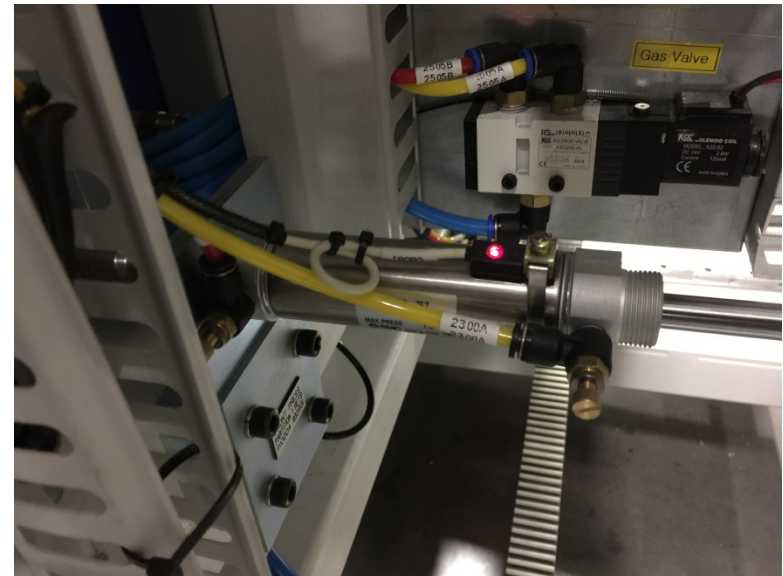
Home corner vacuum sensor

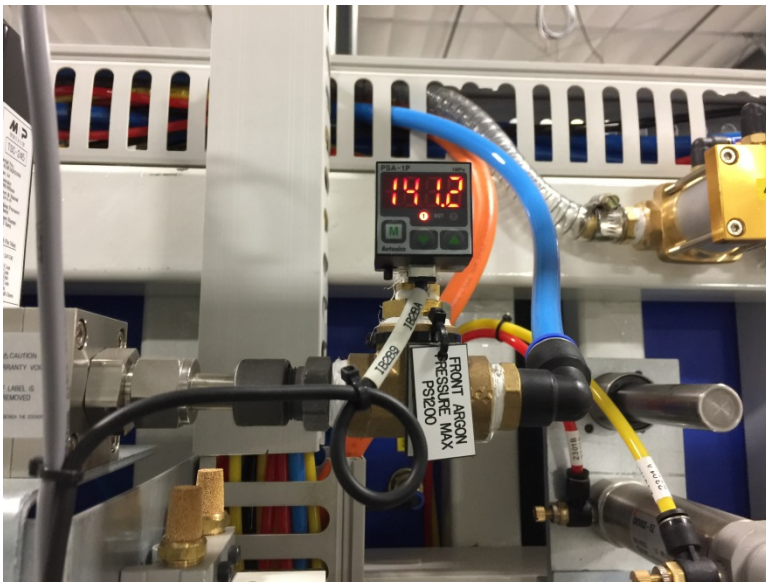


Gas nozzle extend retract actuator

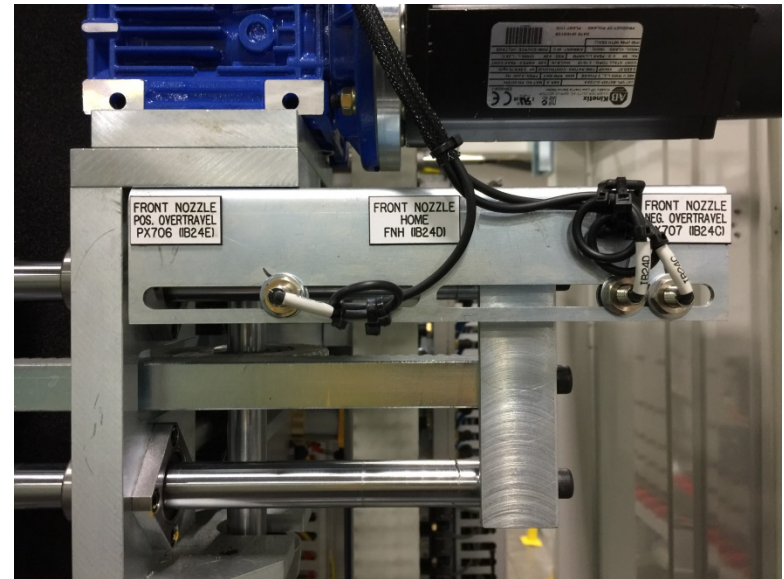


Partition position sensor

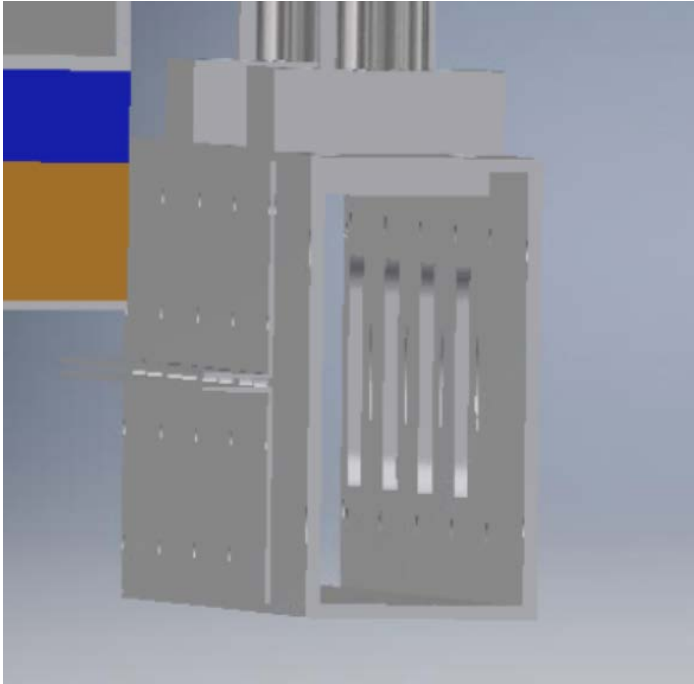




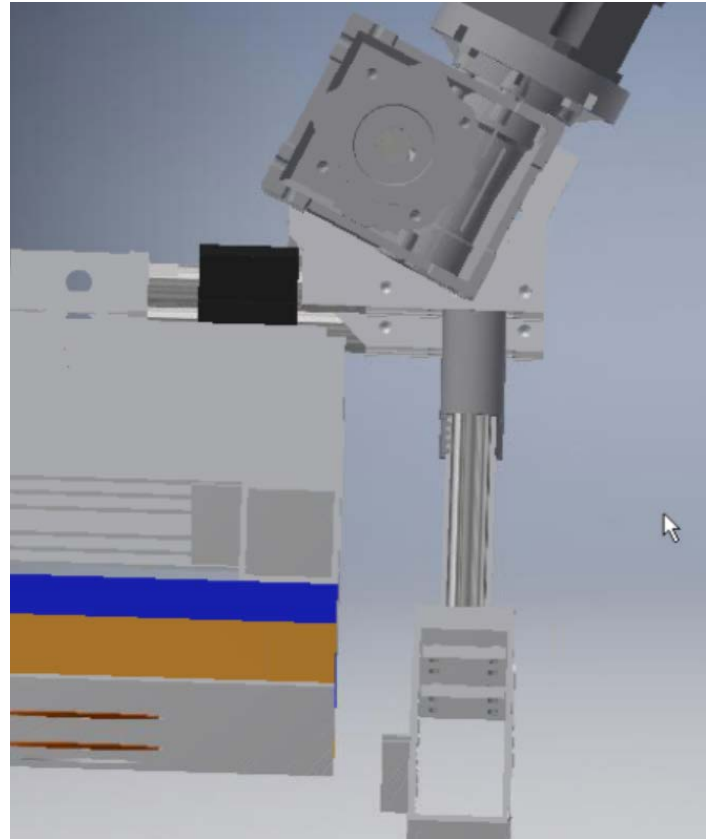
Gas pressure sensor



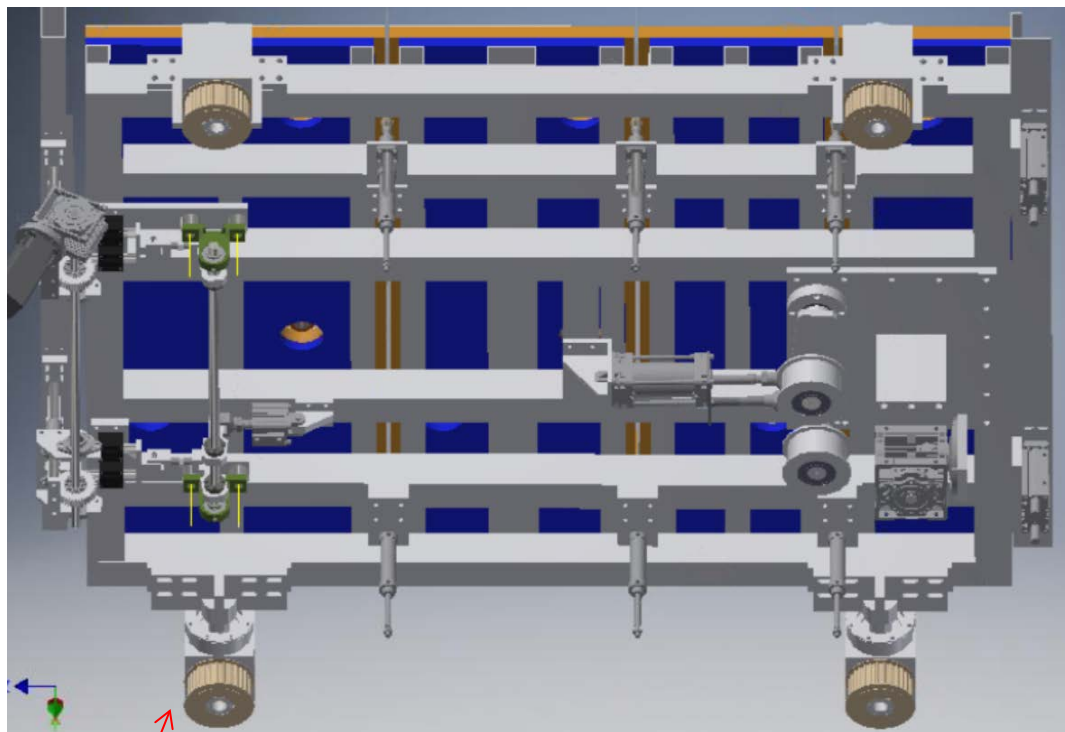
Gas nozzle positioning proxs



Gas nozzle
housing



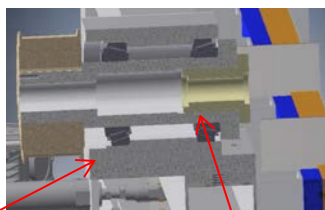
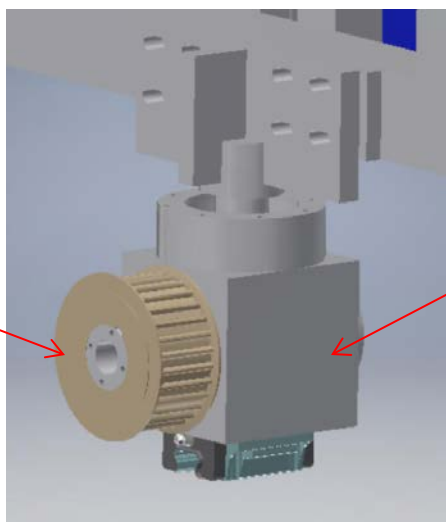
Top view of
Gas nozzle
assembly



Gas nozzle
assembly

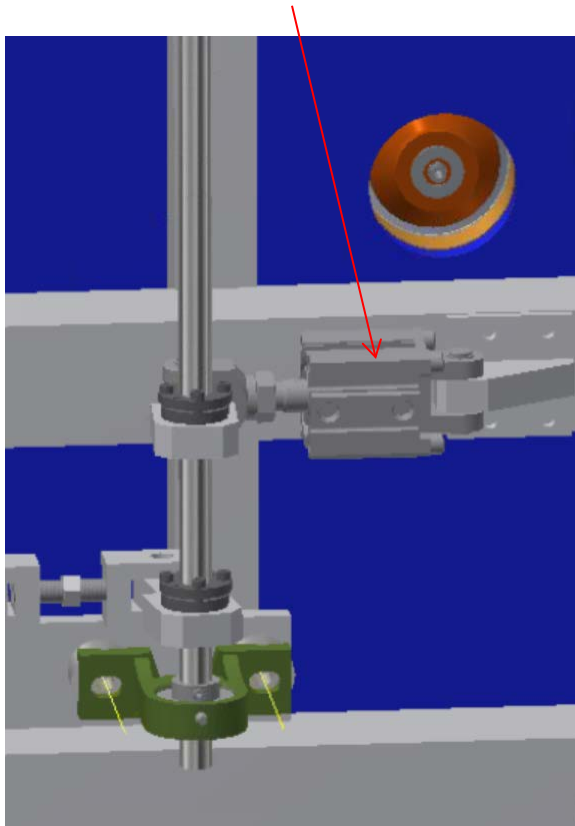


Ball screw
drive pulley

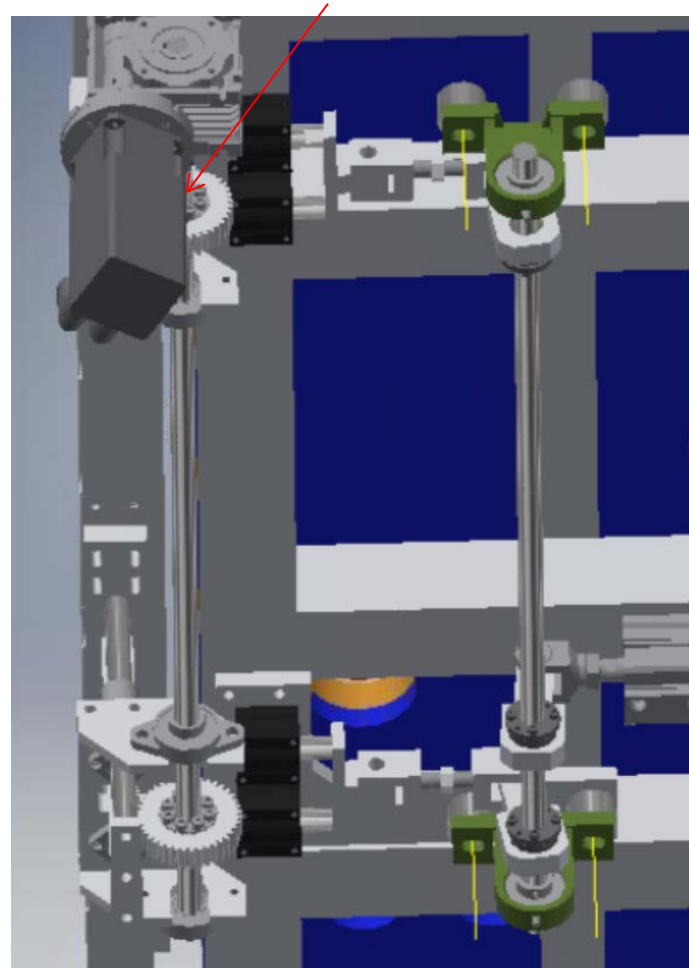


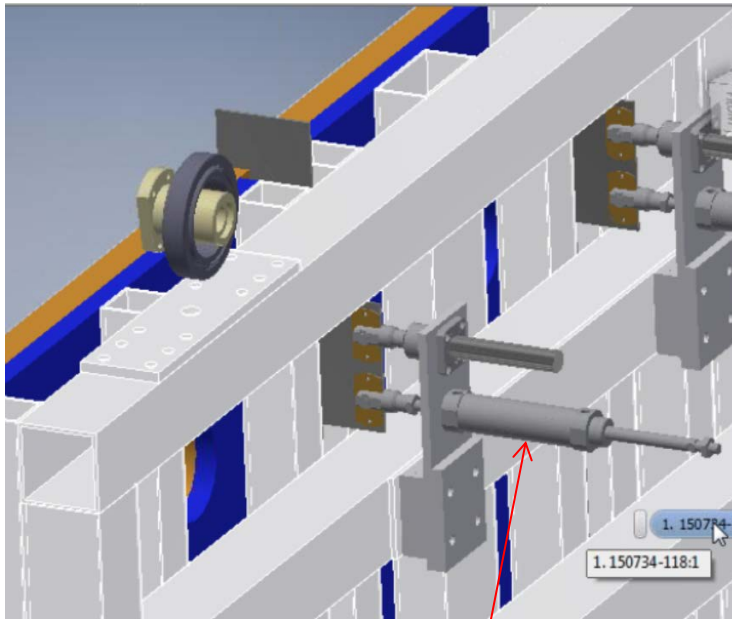
Section view
of Ball nut
and housing

Argon nozzle extend and retract actuator

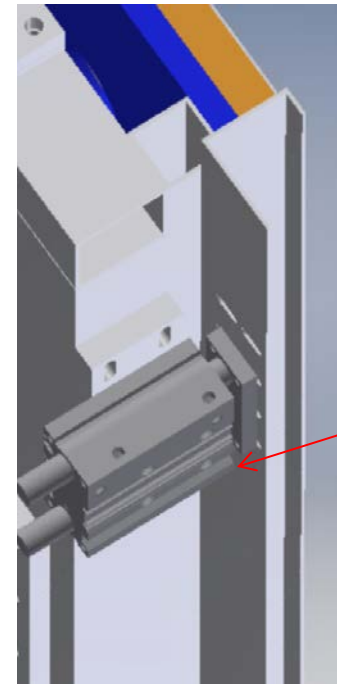


Argon nozzle positioning drive assy



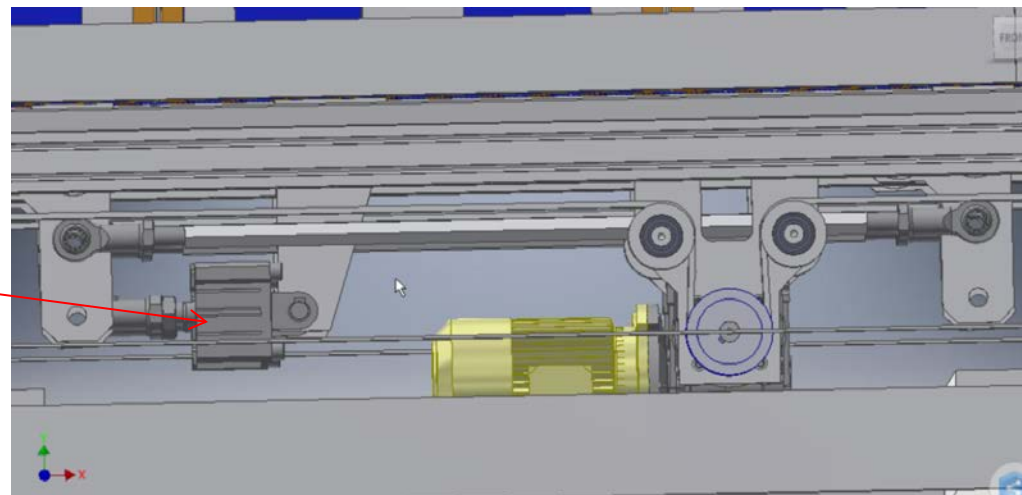


Partition Actuator

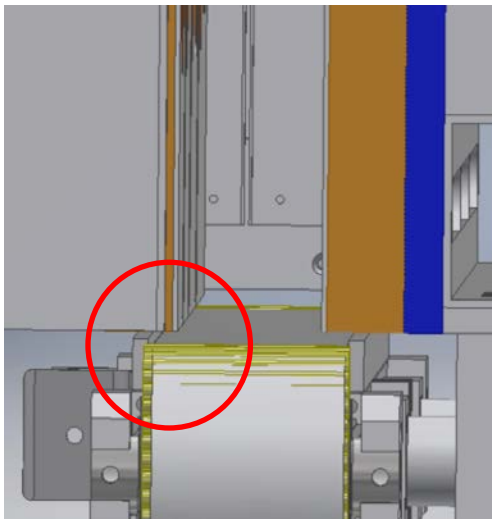
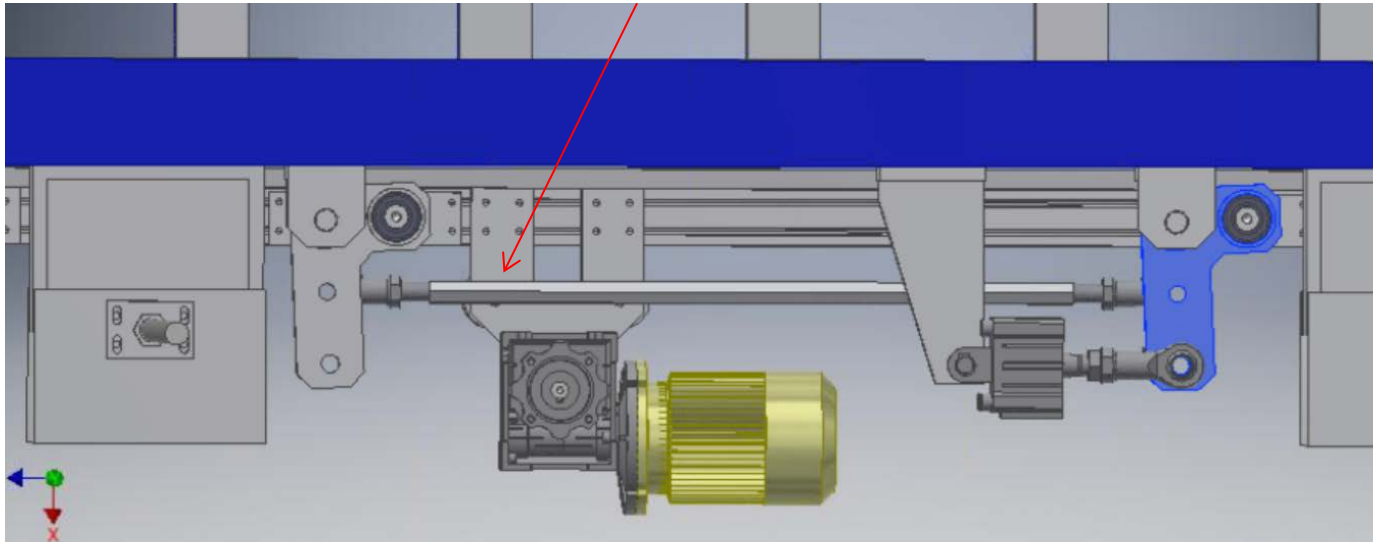


End partition thruster

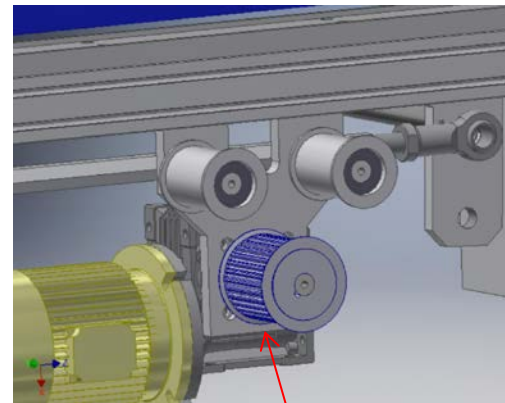
Raise lower Actuator



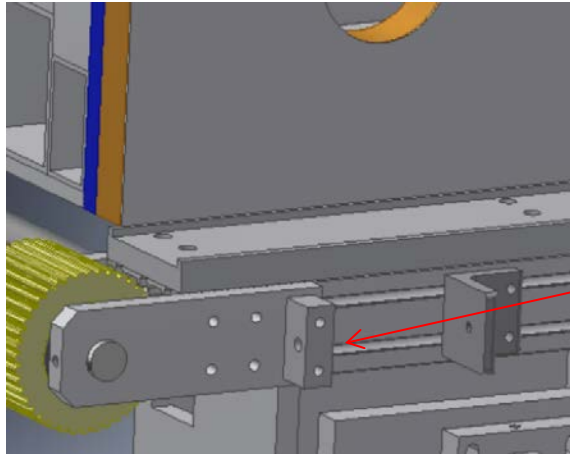
Conveyor raise/lower linkage



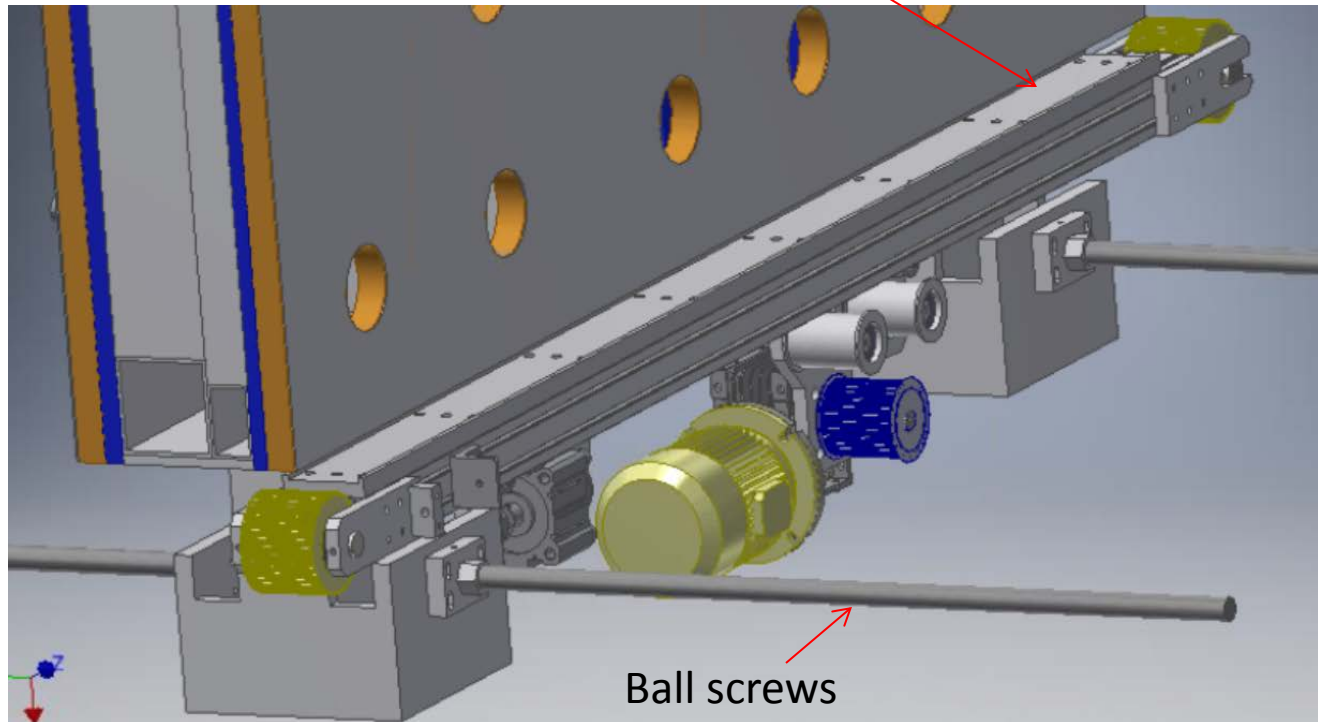
Conveyor raised sealing
against platen



Conveyor drive

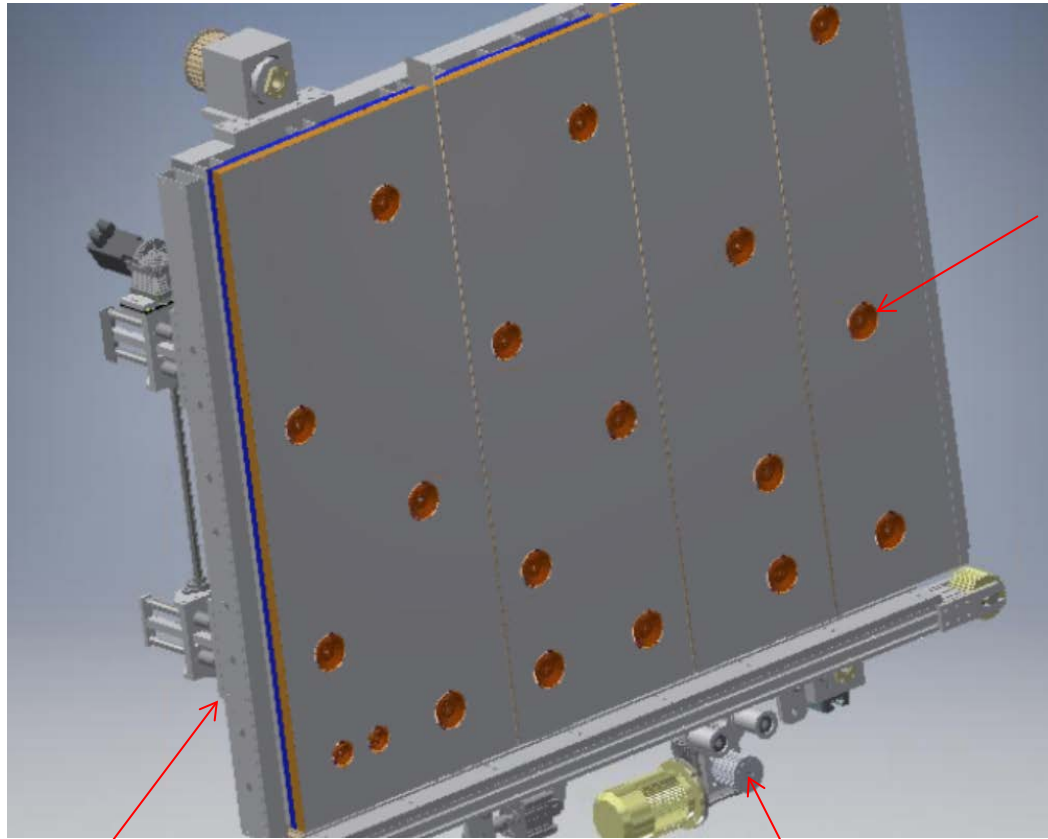


Conveyor Belt tensioner



Belt guide

Ball screws



Front platen suction cups

Argon nozzle assy

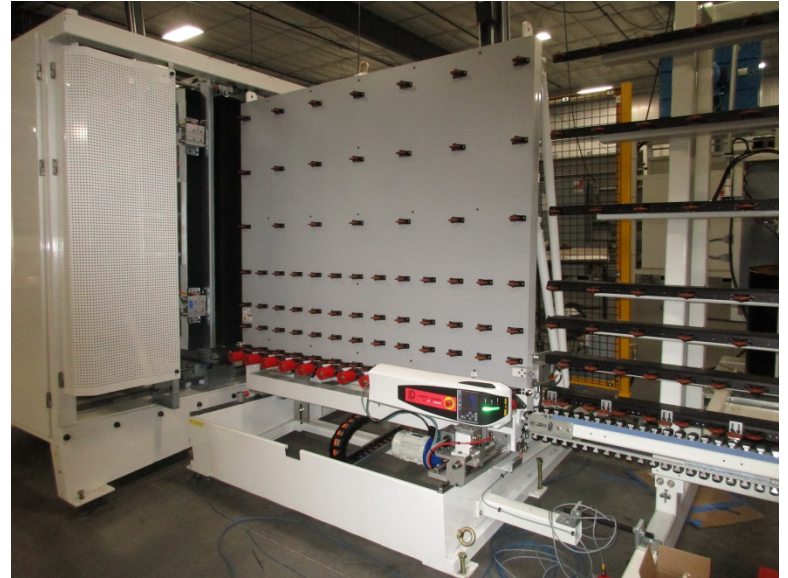
Belt drive assy

Second shuttle

Drive components

Product detect eyes

Home and over travel



(Optional laser etcher shown)

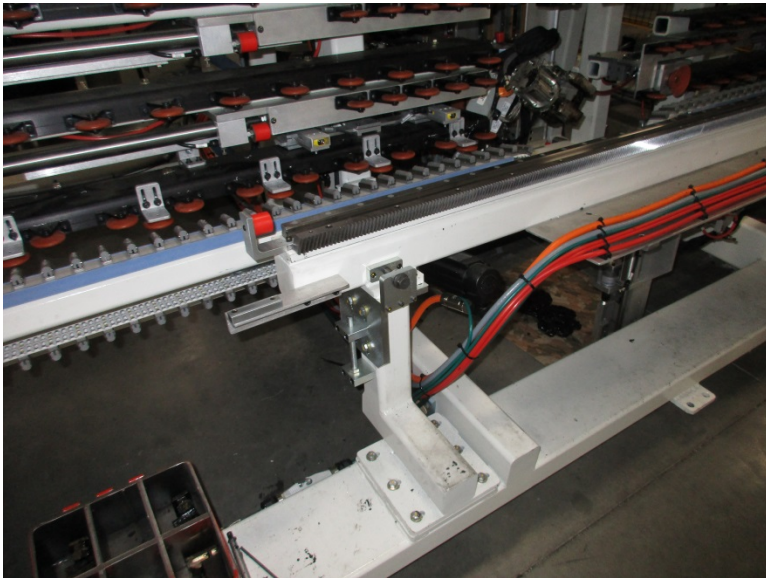
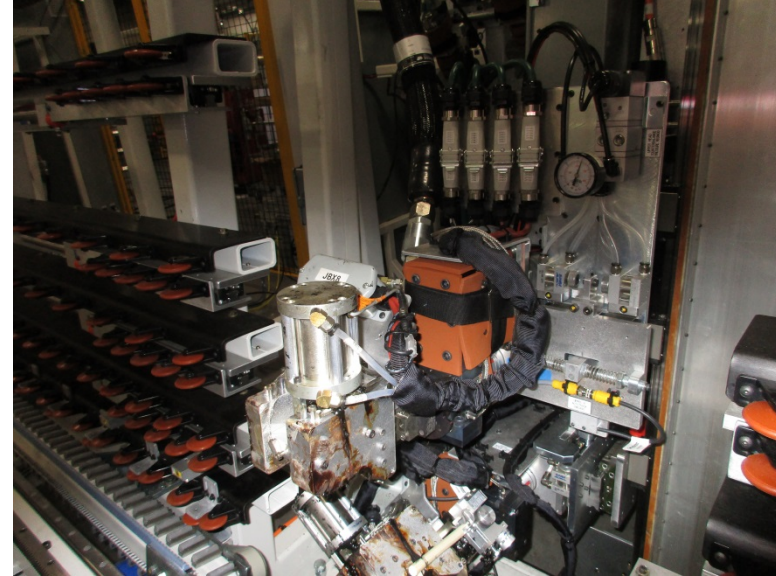


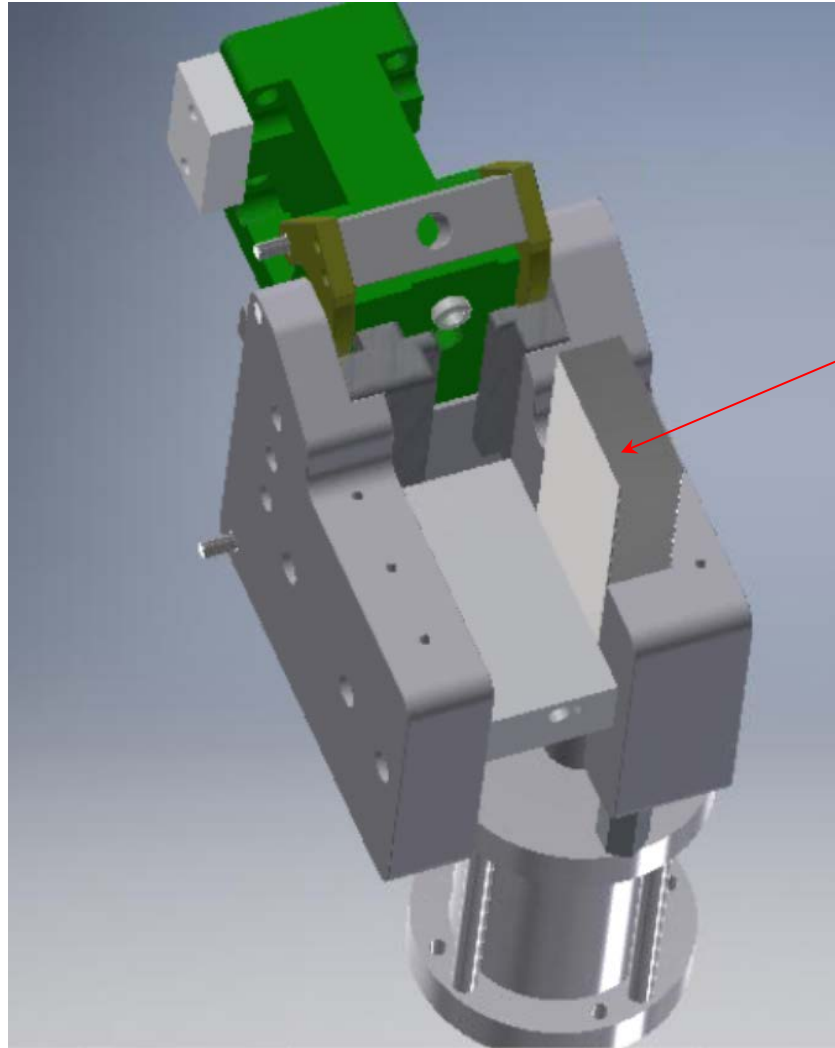
IG Secondary Sealer

Product detect eyes

Vacuum trolley H/OT

Sealer head operation

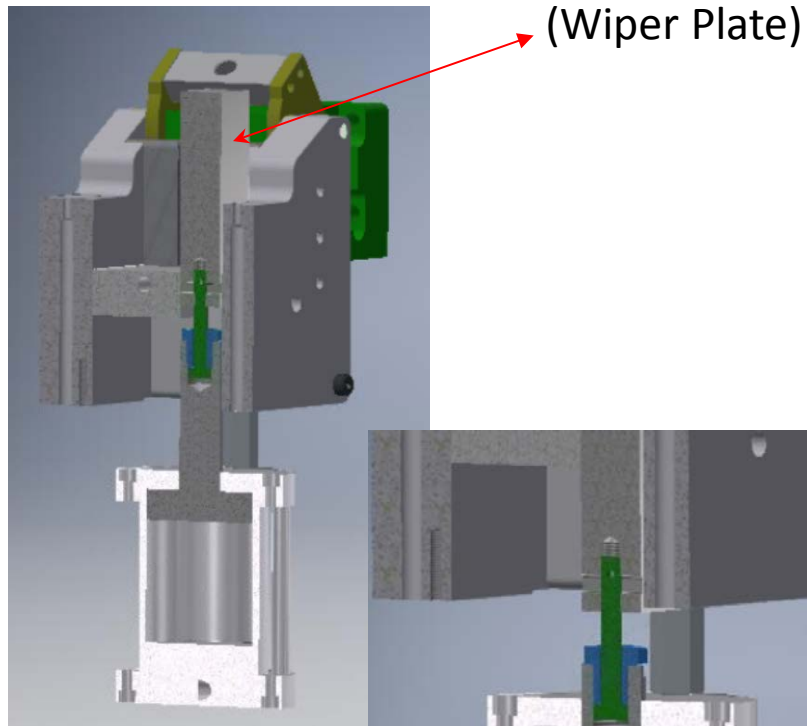




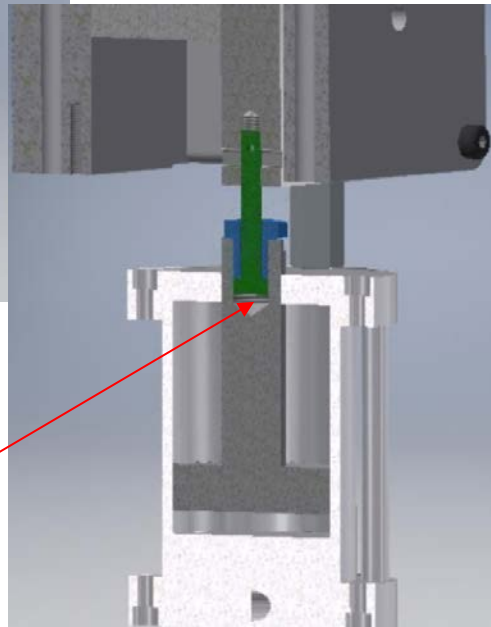
(View of Extended
Bottom Wiper)

View of Bottom Wiper
Assembly

Section View of Bottom Wiper Assembly (Shown Extended)

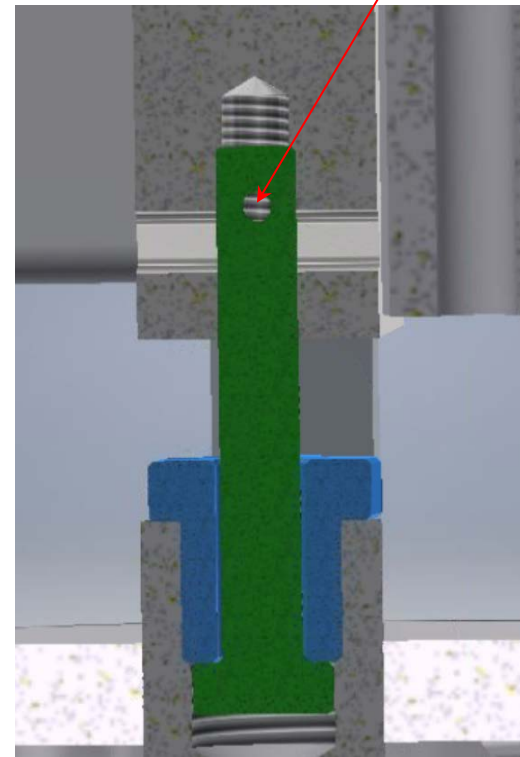


(Designed Alignment Coupler)

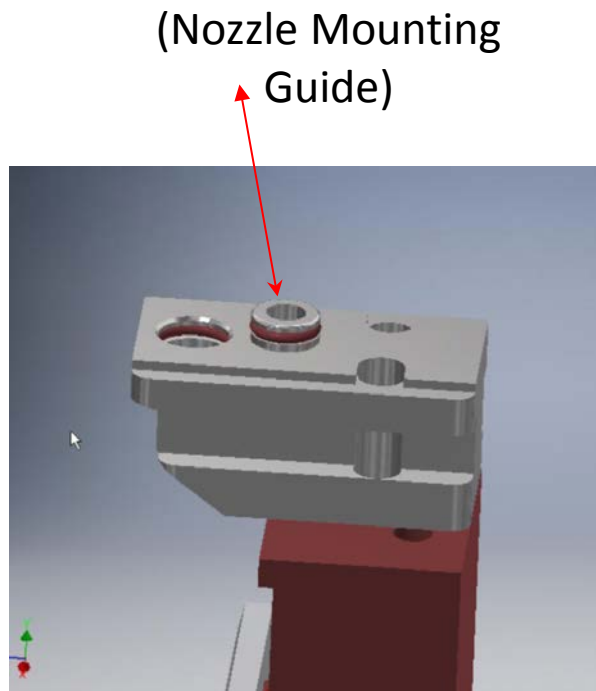


Section View of Bottom Wiper Assembly Air Cylinder (Shown in Retract Position)

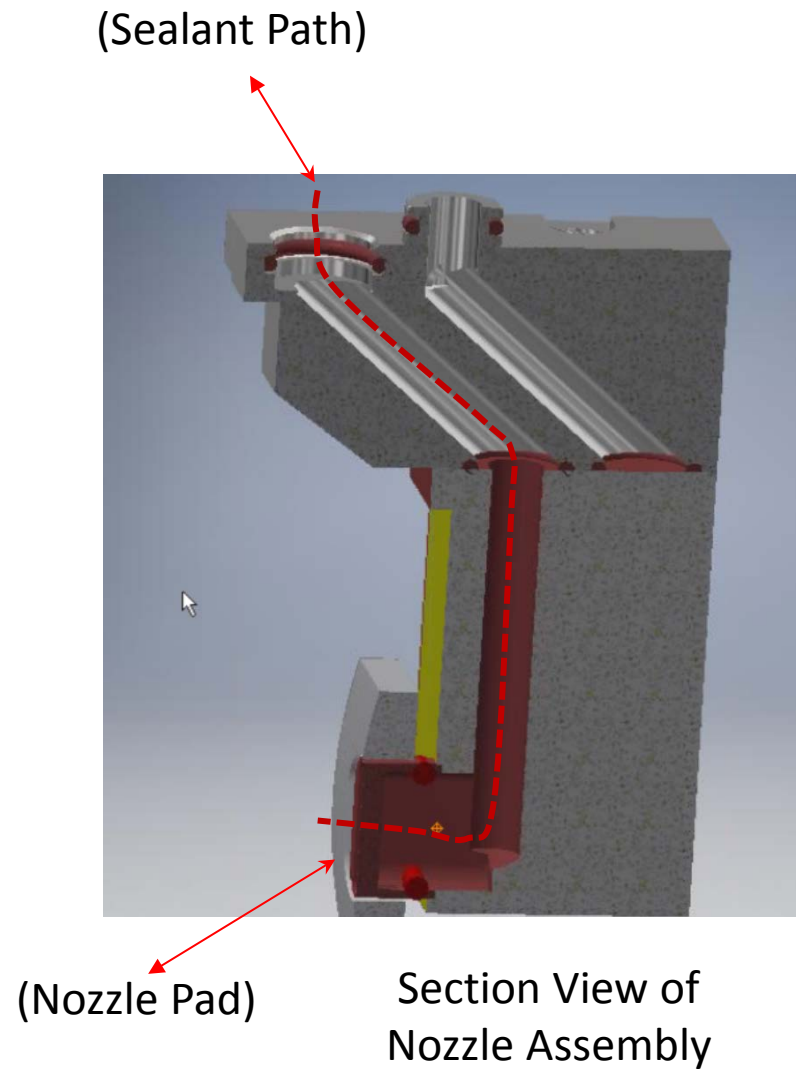
(Set Pin Hole)



Section View of Bottom Wiper Assembly (Showing Attachment Coupler)



Top View of
Nozzle
Assembly



(Nozzle Pad)

Section View of
Nozzle Assembly

Section View of Lower Sealant Head (Sealant Path)

(Sealant Path)

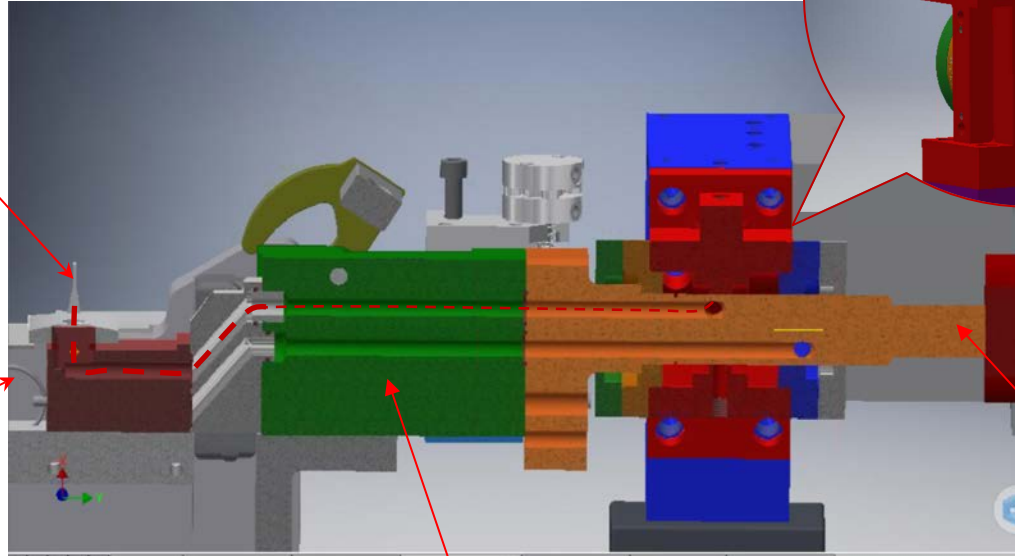
(Nozzle Assy)

(Nozzle Adpater)

(Metering
Gear Pump)

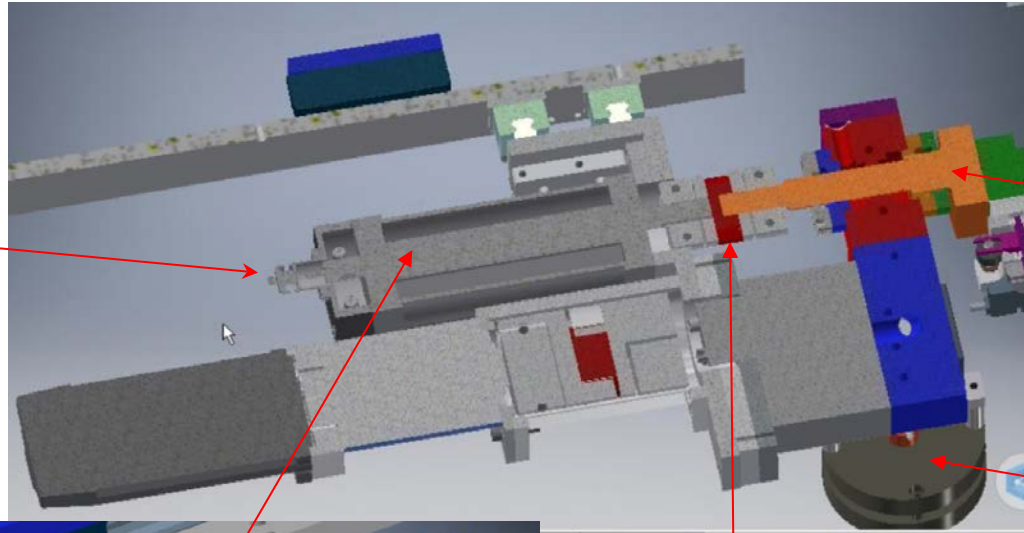
(Indexer
Housing
"H-Block")

(Index Shaft)



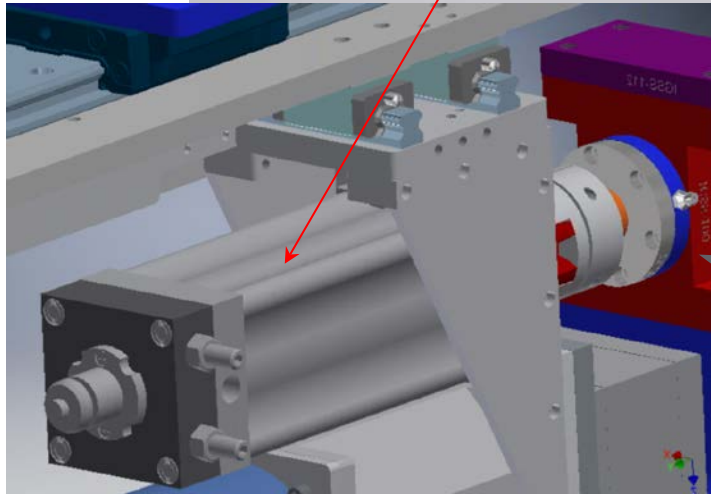
Section View of Lower Sealant Head (Rotate Actuator)

(Rotate Actuator)



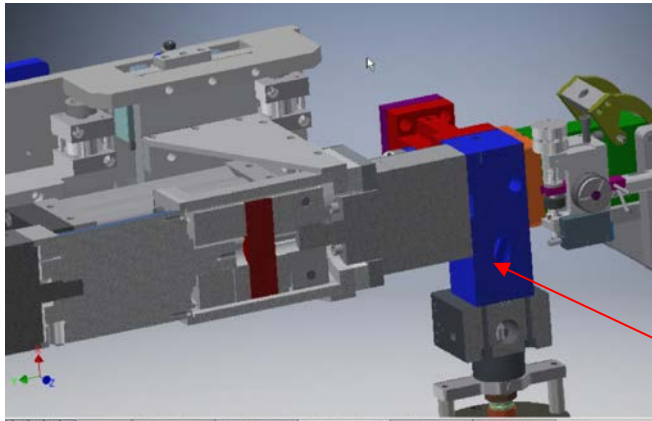
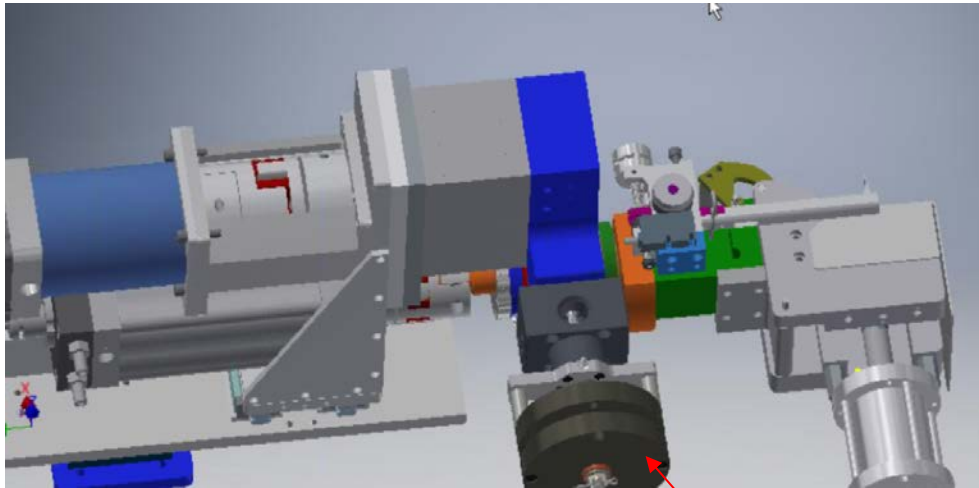
(Index Shaft)

(High Flow Sealant Valve)



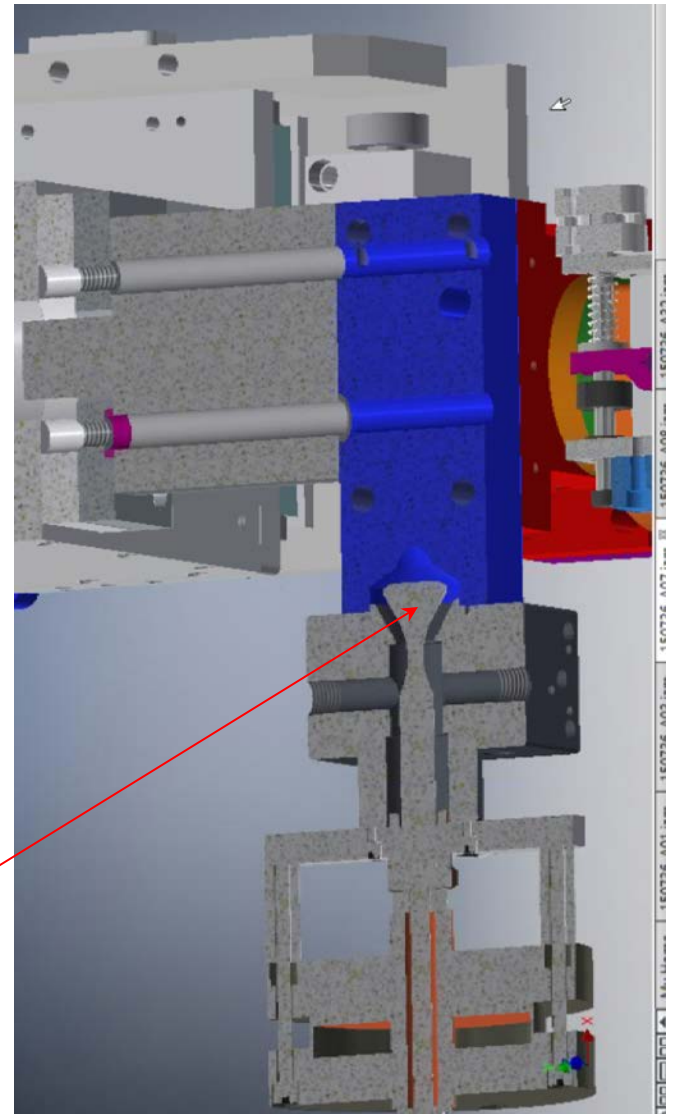
(Rotating Actuator Coupler)

Exposed View of Lower Sealant Metering Assy

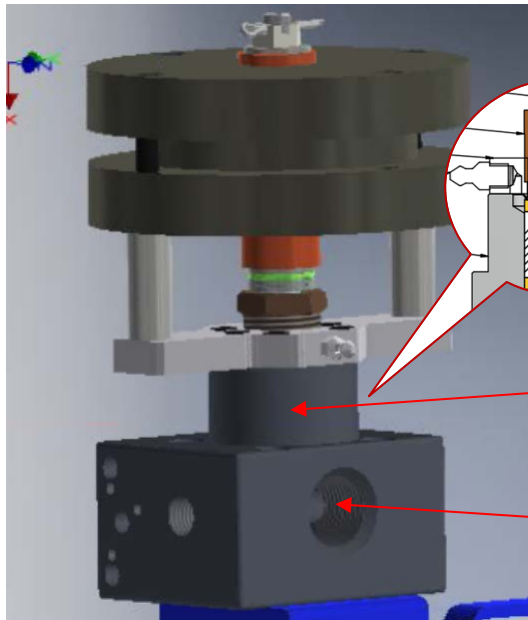


(High Flow
Sealant Valve)

(Metering
Pump Adapter)

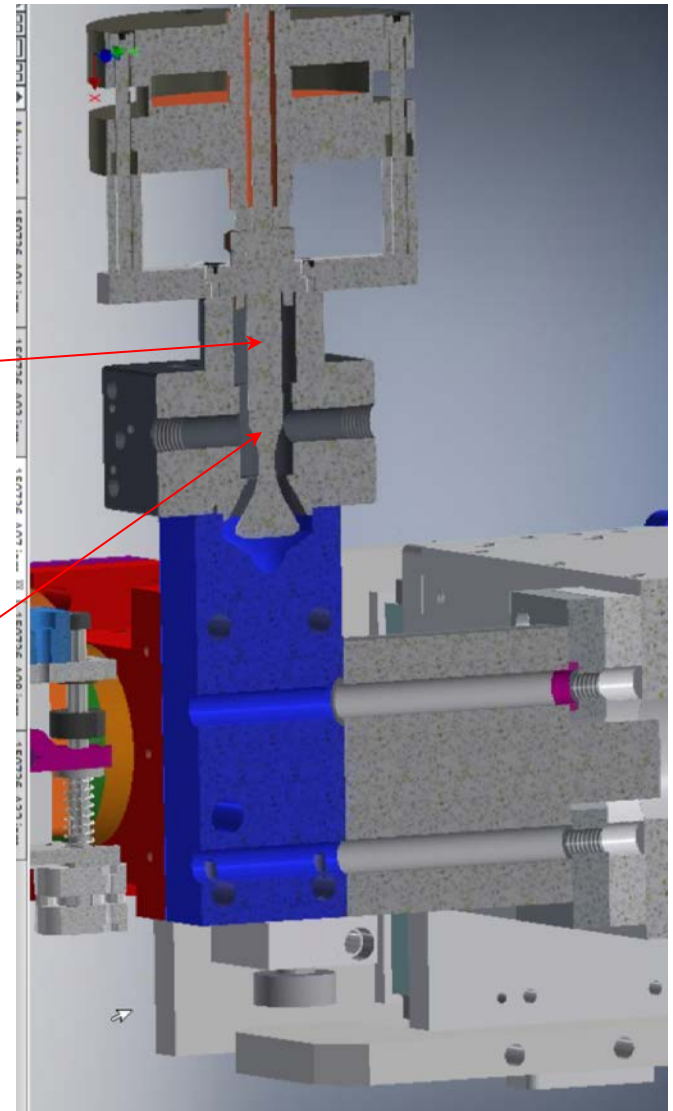
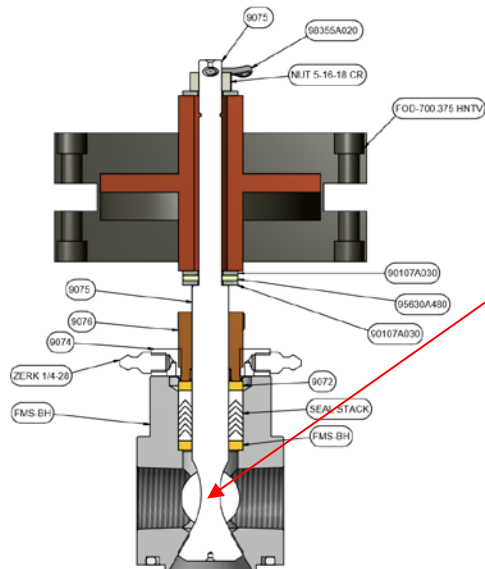


High Flow Sealant Valve



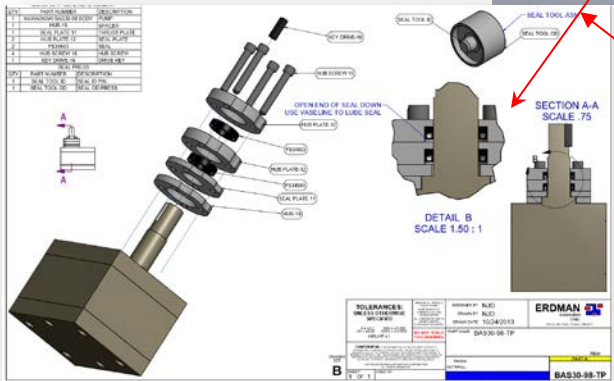
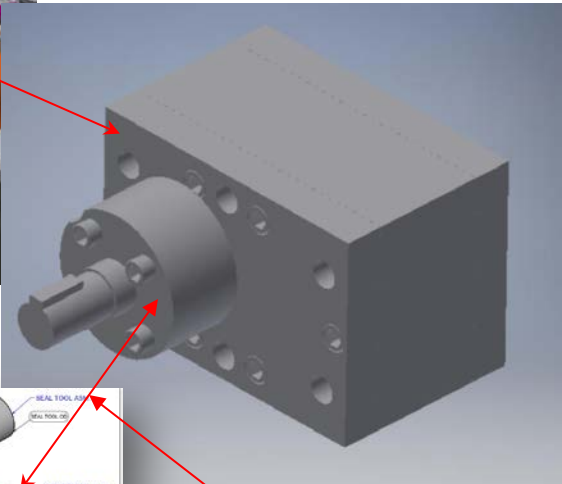
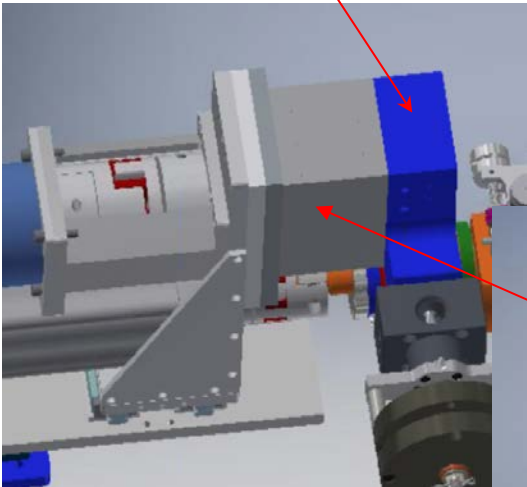
Valve
Packing
Assy

Sealant Hose
Attachment
point from
Mastic
Regulator



Kawasaki Sealant Metering Pump (K Series)

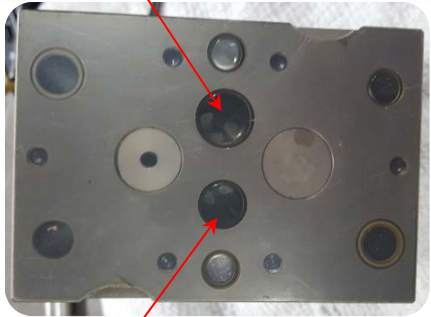
(Pump Adapter)



(High Pressure
Lip Seals)

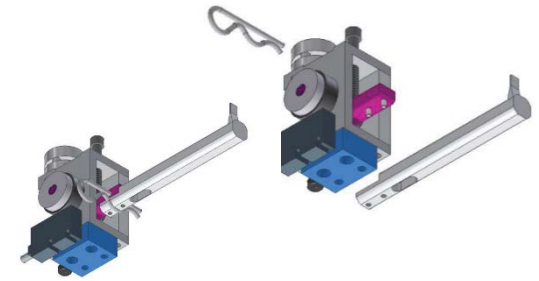
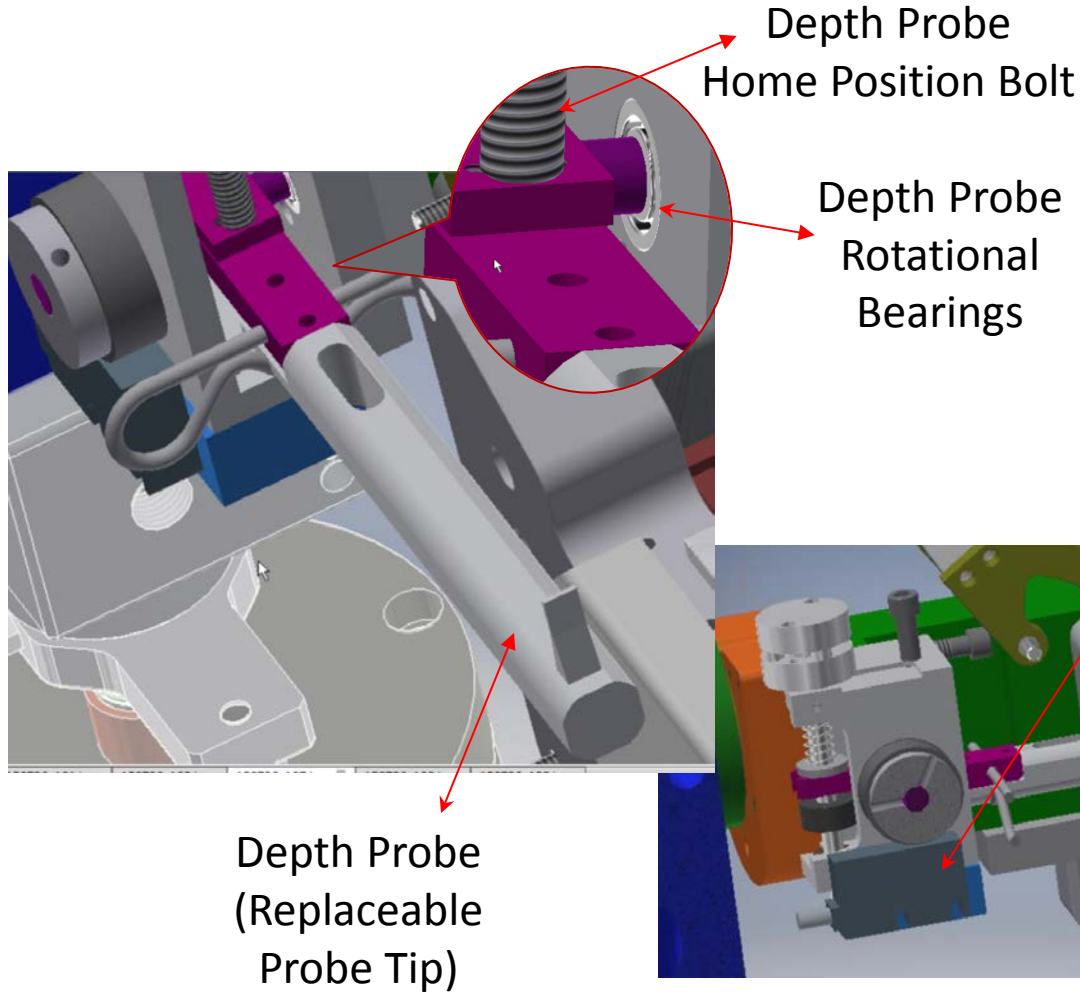


(Inlet)

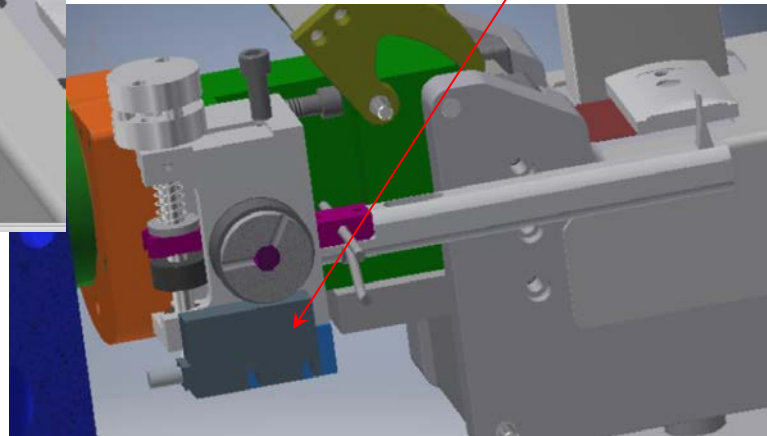


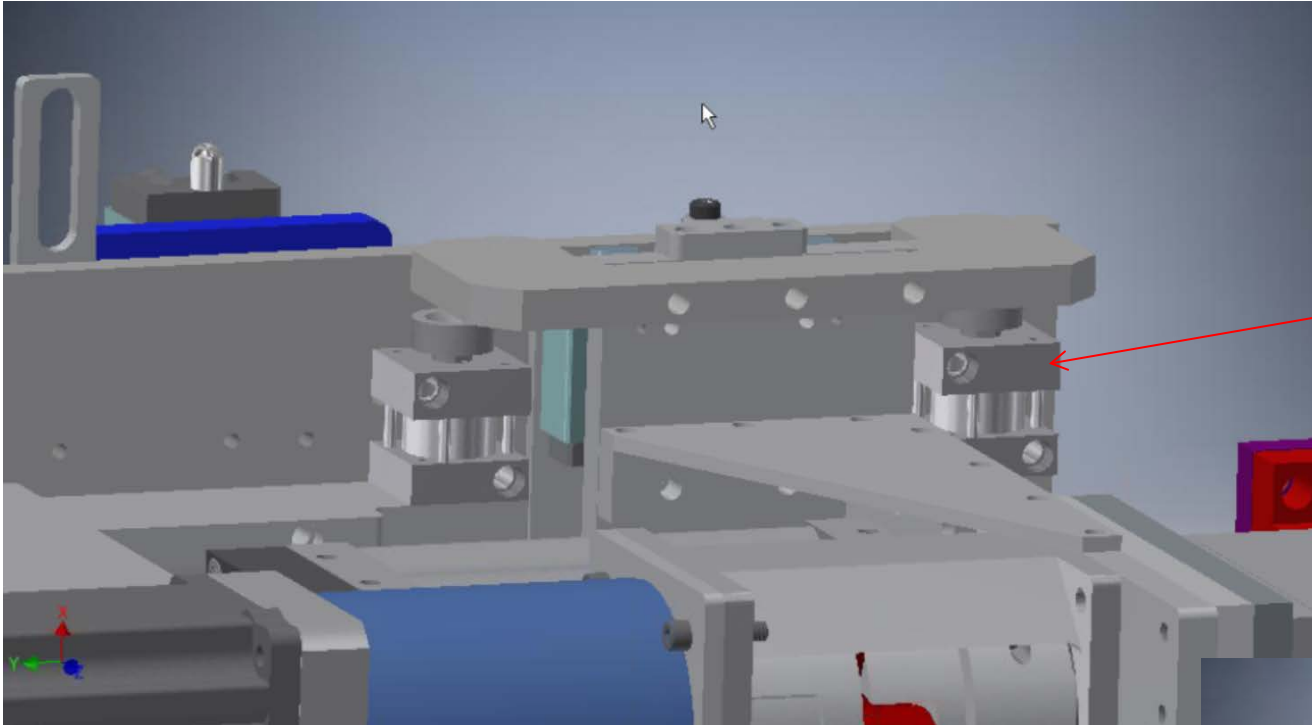
(Outlet)

Depth Probe Assembly (Lower Shown (Upper Similar))

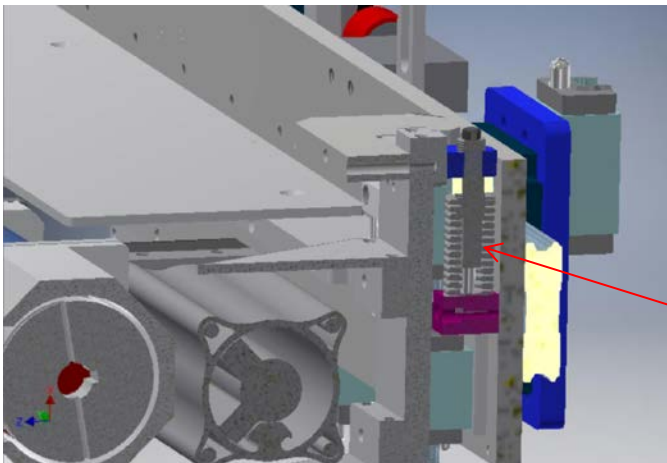


Depth Probe Encoder for Position Monitoring

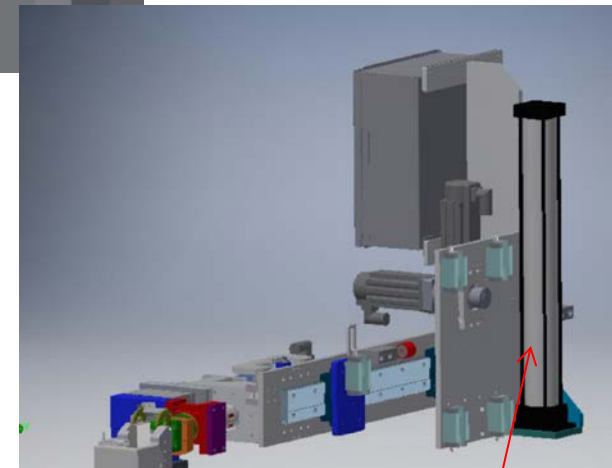




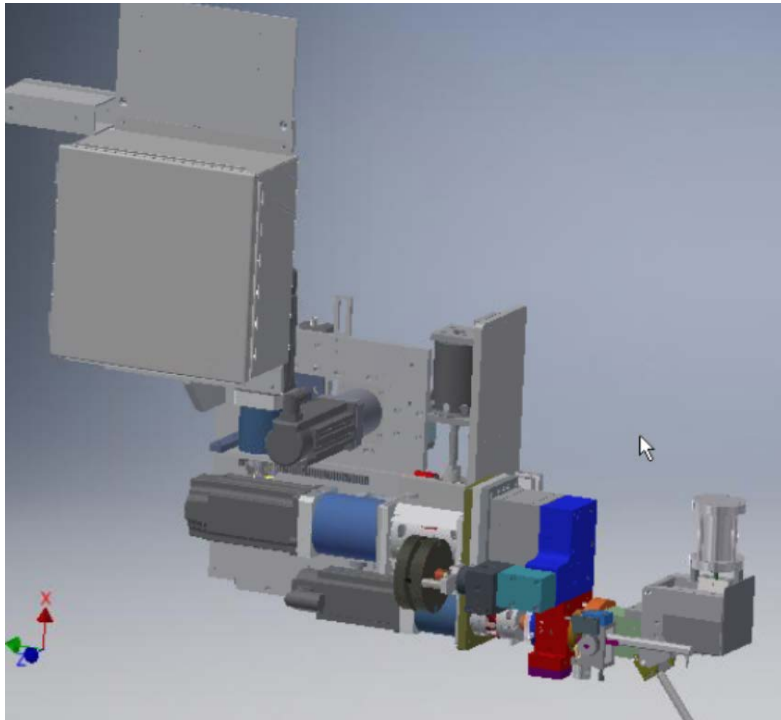
Locking cylinders
lower head y axis



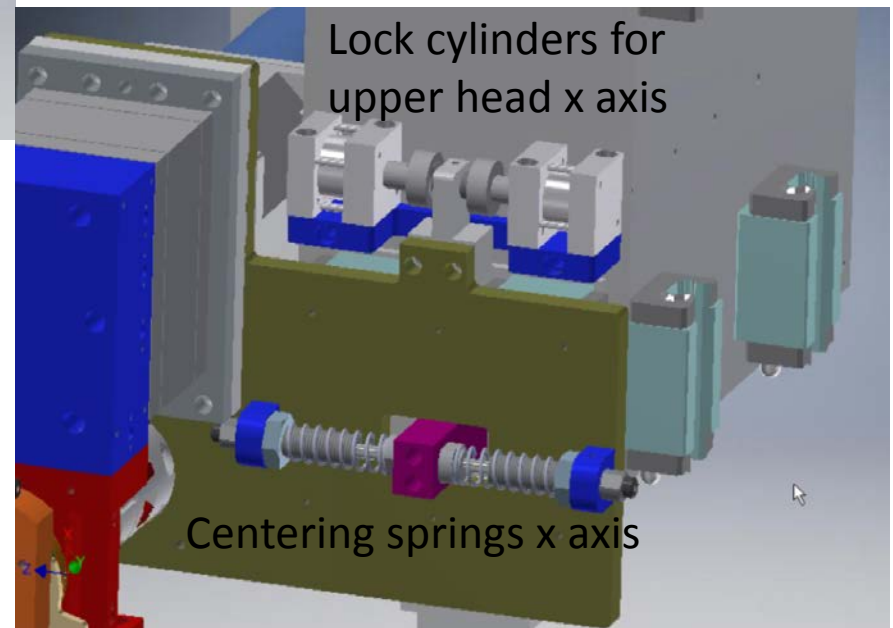
Support spring
lower head y axis



Counter balance
cylinder for lower
head

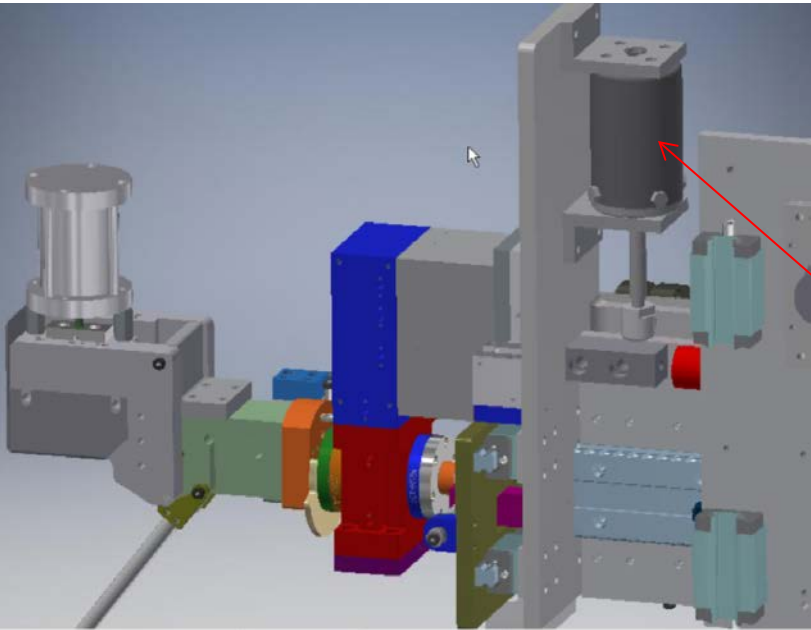


Upper floating
head assembly

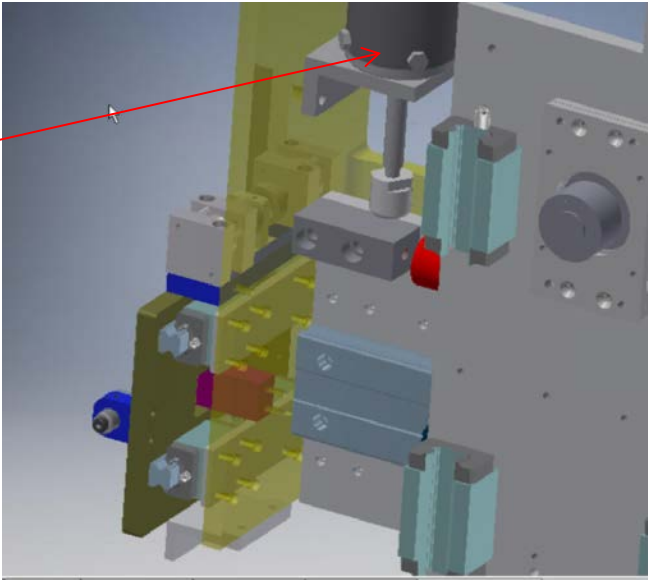


Lock cylinders for
upper head x axis

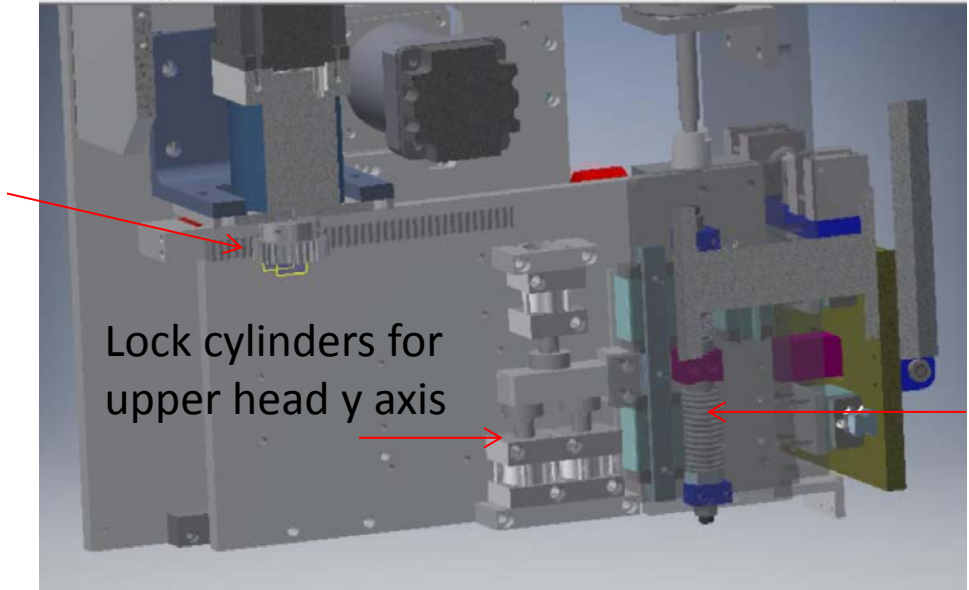
Centering springs x axis



Upper head
diaphragm cylinder
for floating y axis

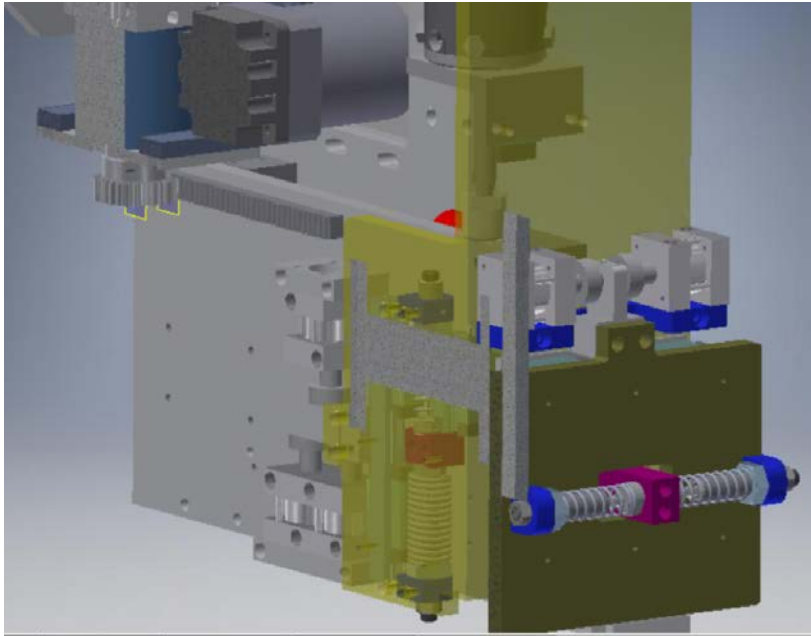


Z axis drive

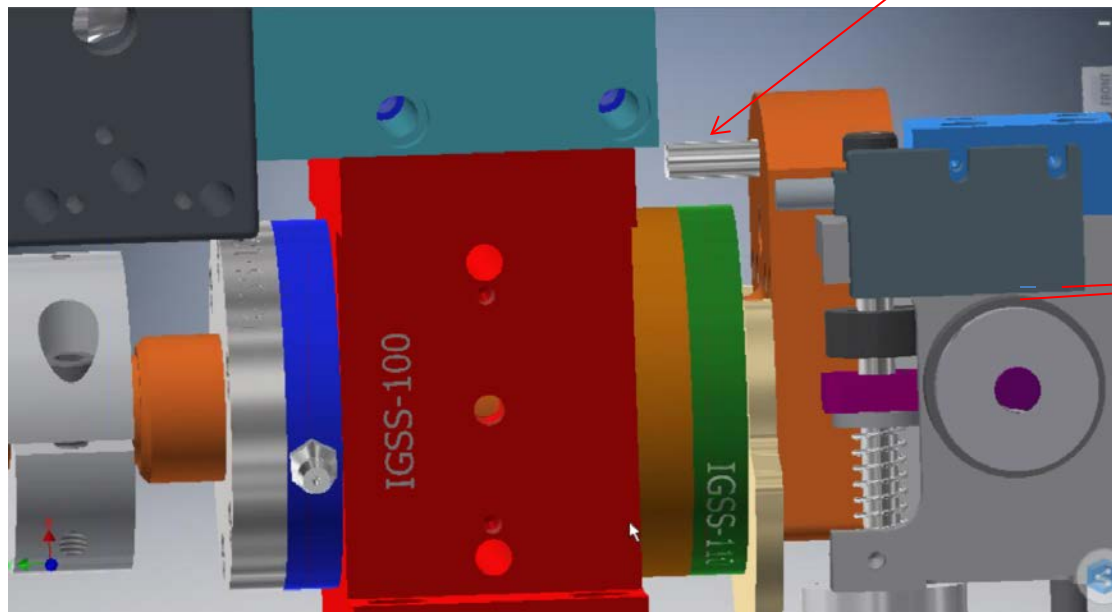


Lock cylinders for
upper head y axis

Upper head
support spring y
axis

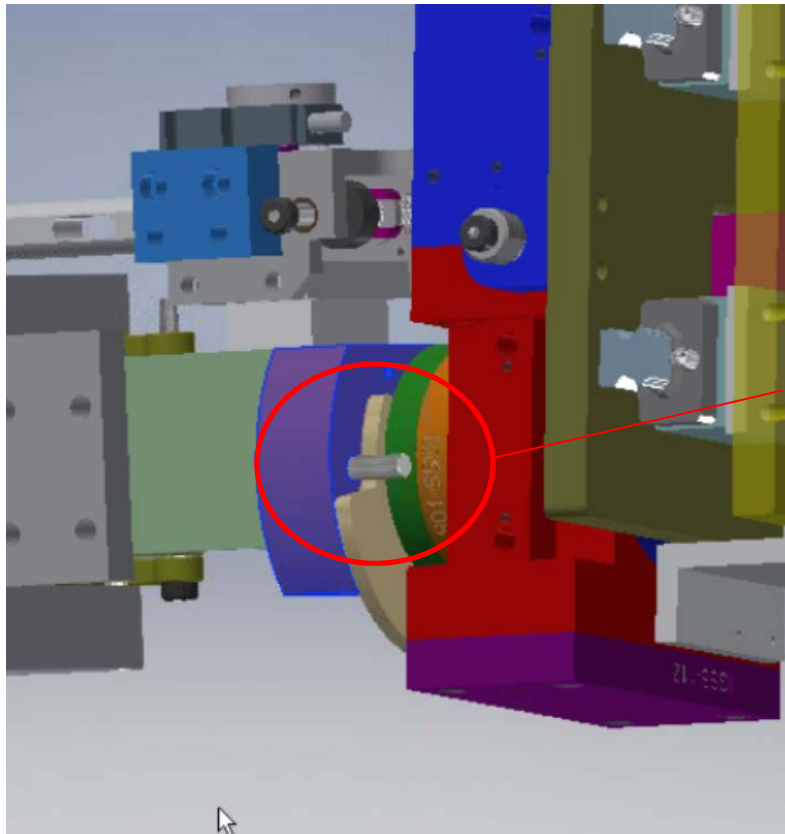


Cross view showing upper floating head springs

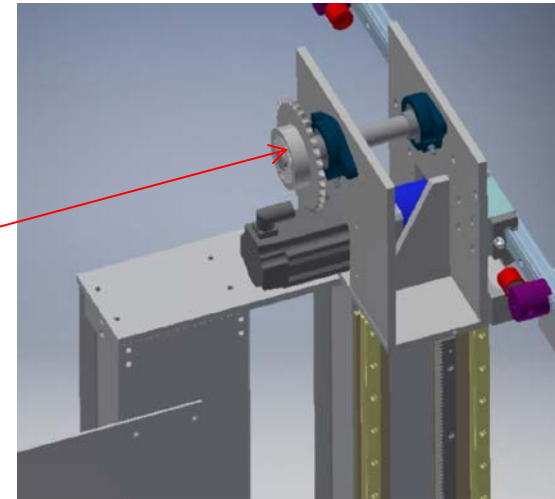


Index home
pin

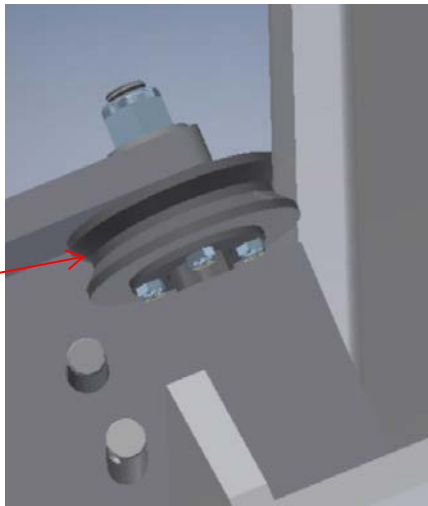
.015 gap
between
encoder and
wheel



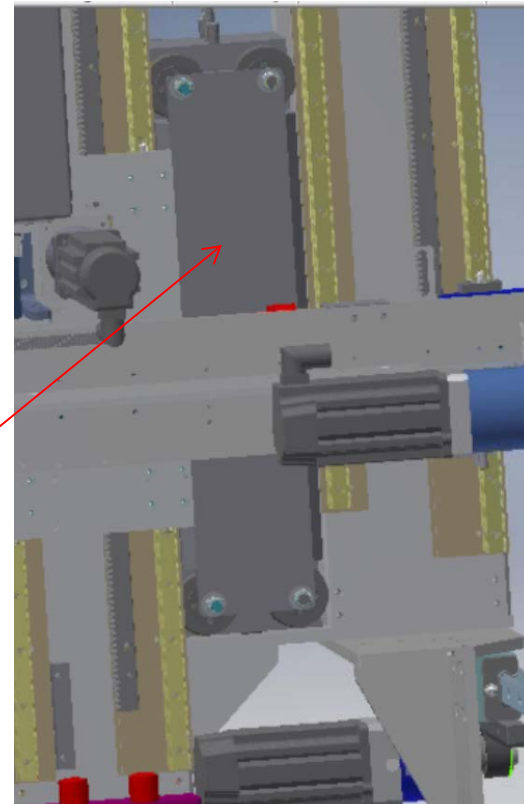
Index home position



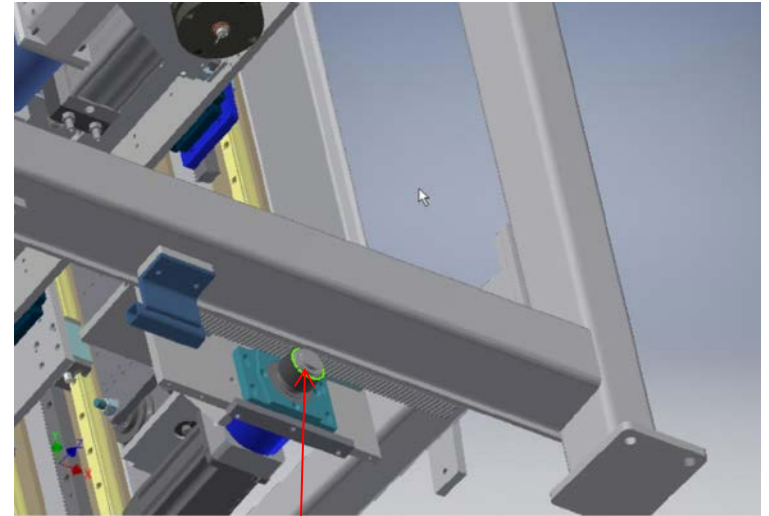
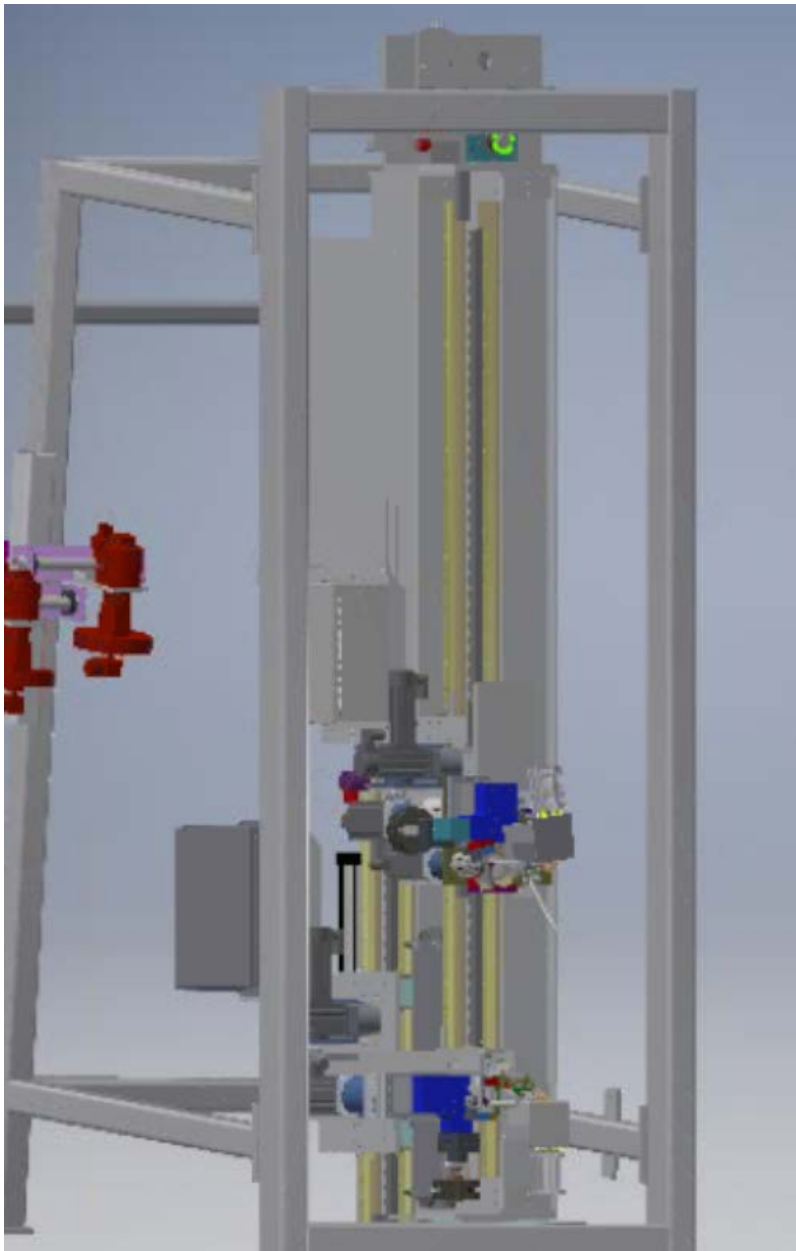
Counter weight sprocket



Counter weight guide rollers



Counter weight assembly

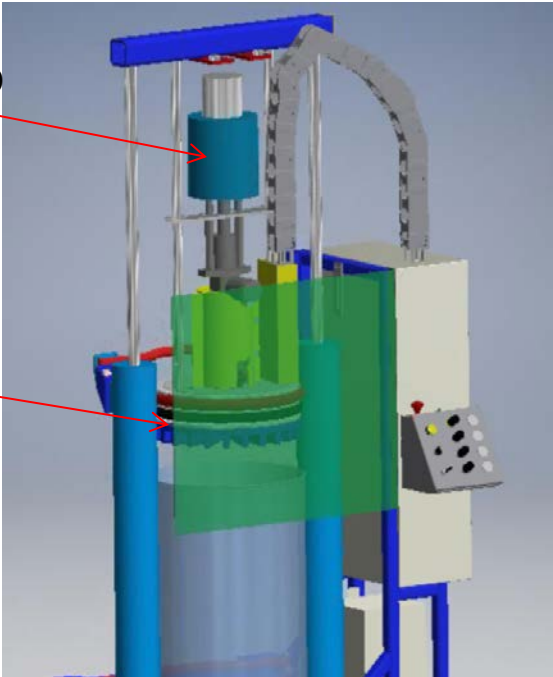


Lower x axis drive

Sealer gantry with upper
and lower head

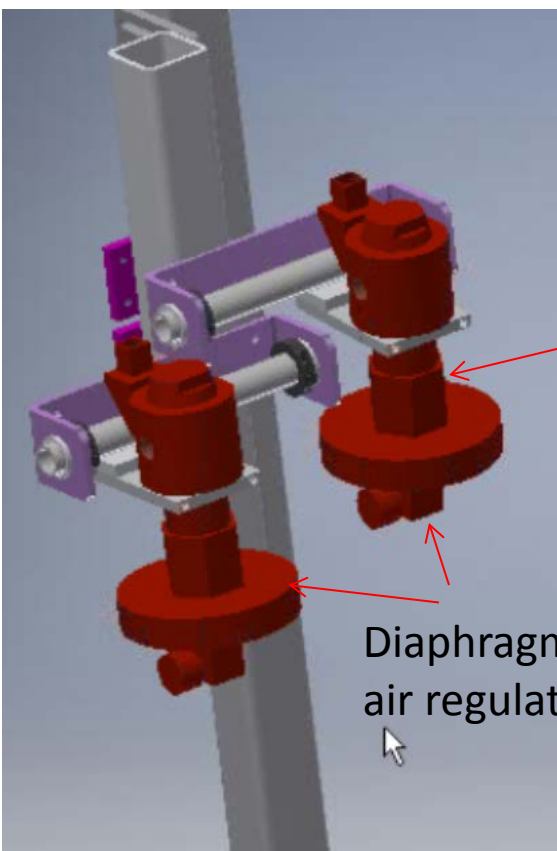
Unloader pump
motor

Heated finned
platen



Mastic regulators

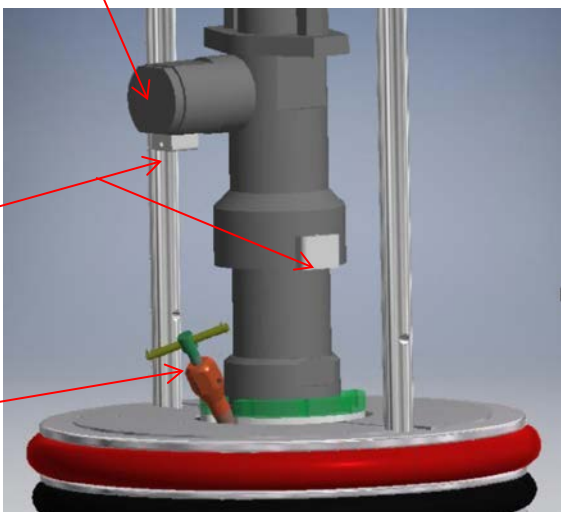
Diaphragm and
air regulator



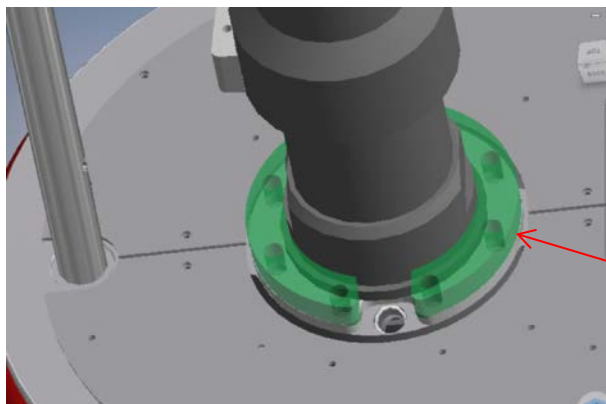
Check valve

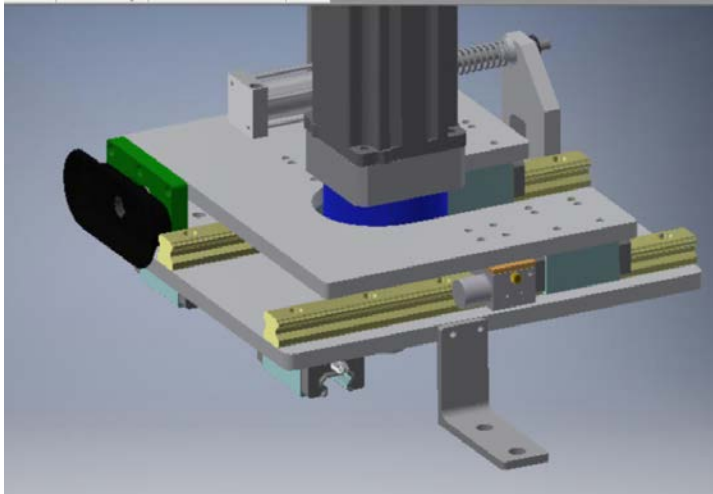
Rtd
housings

Aeration
valve

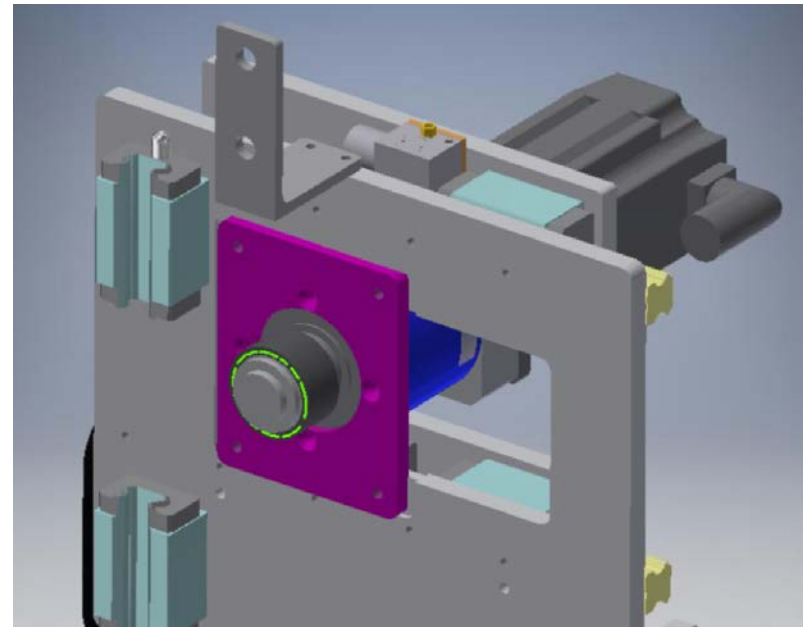


Pump retainer ring



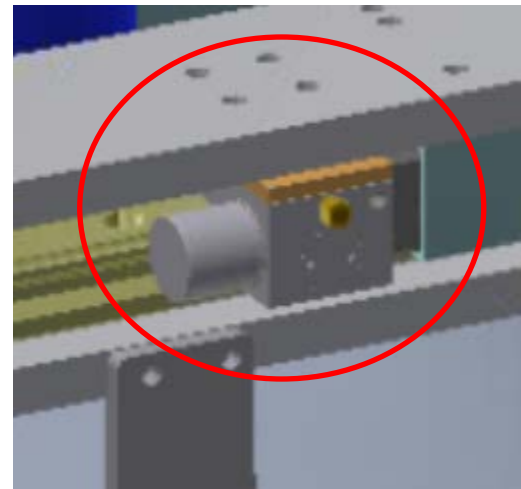
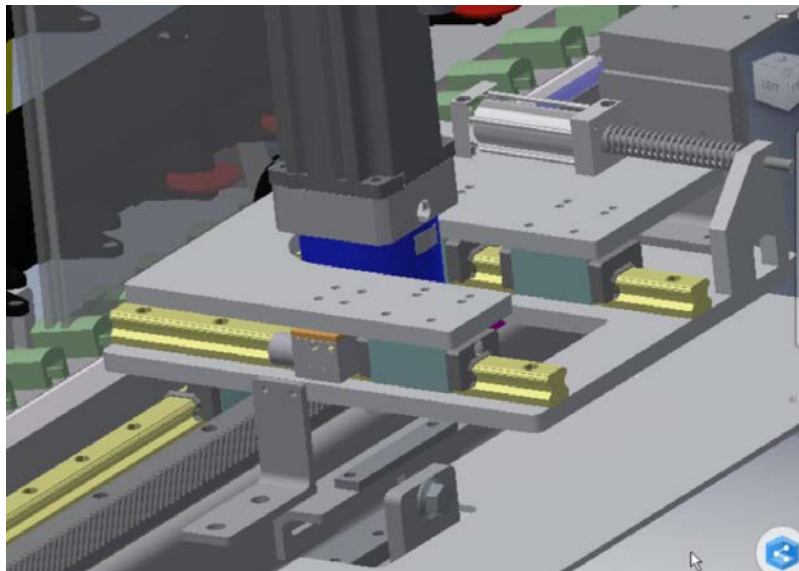


Isolated view of Vacuum trolley

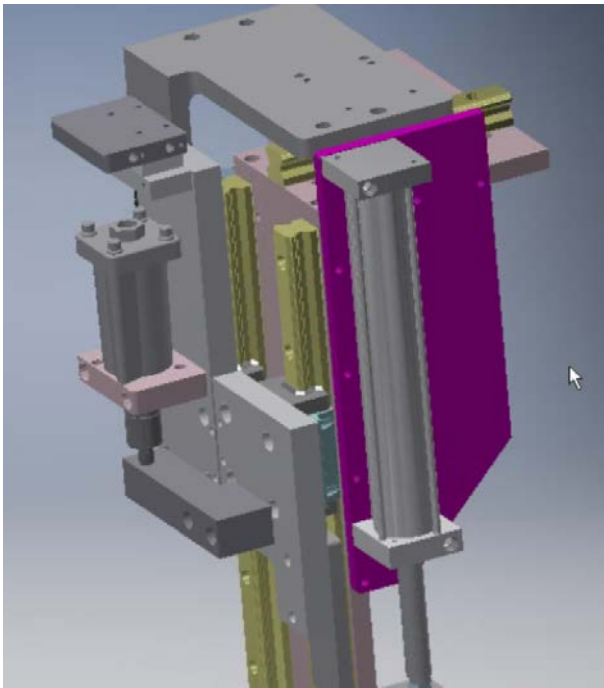


Bottom view of trolley showing pinion gear and bearings

Vacuum trolley main view

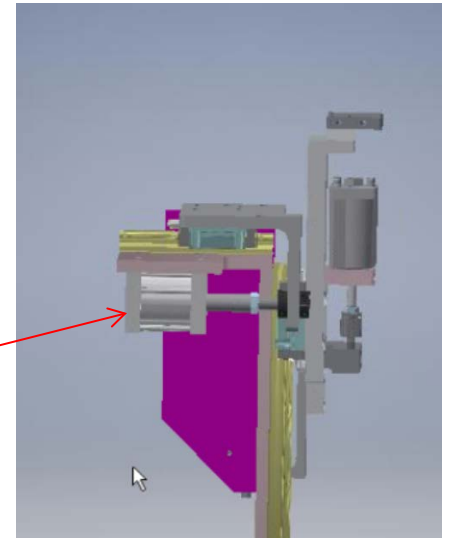


Rail brake for vacuum cup pick up plate (Zimmer brake)

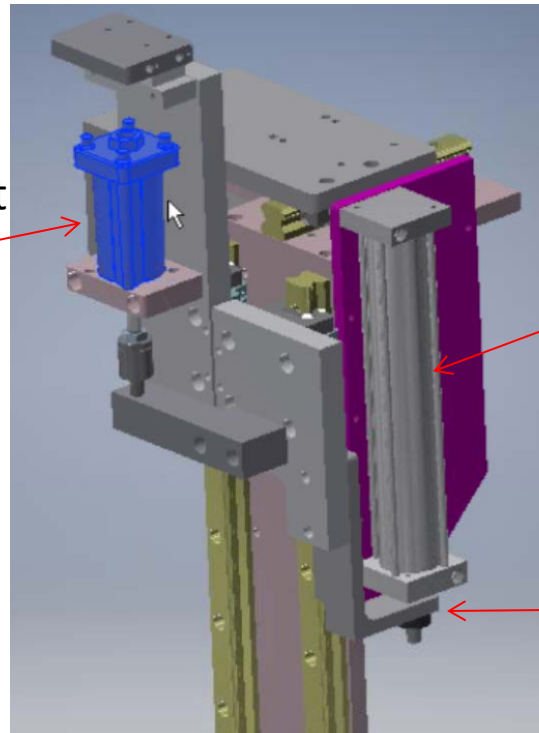


Exposed view of lower fixed wiper

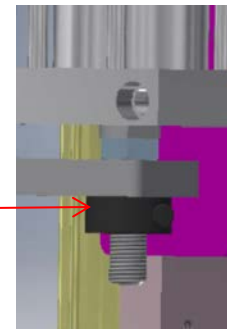
Lower fixed wiper in/out shift cylinder

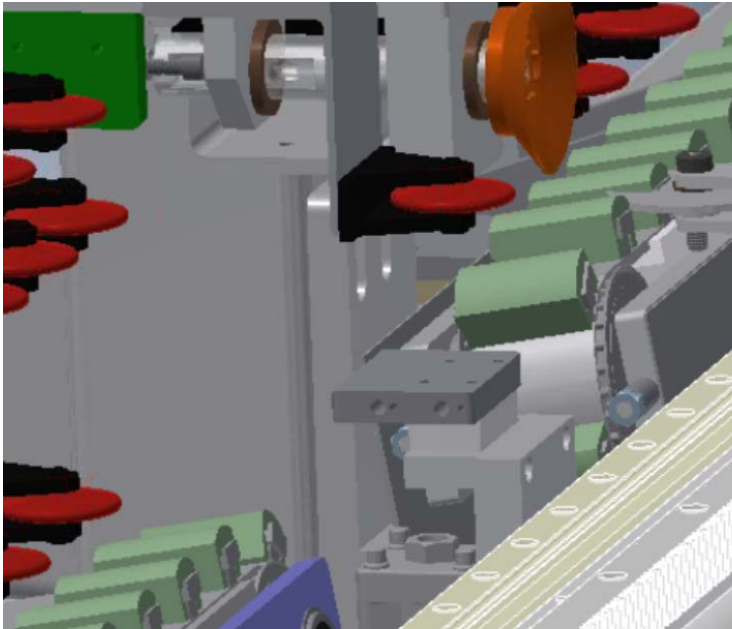


Lower fixed wiper Float cylinder

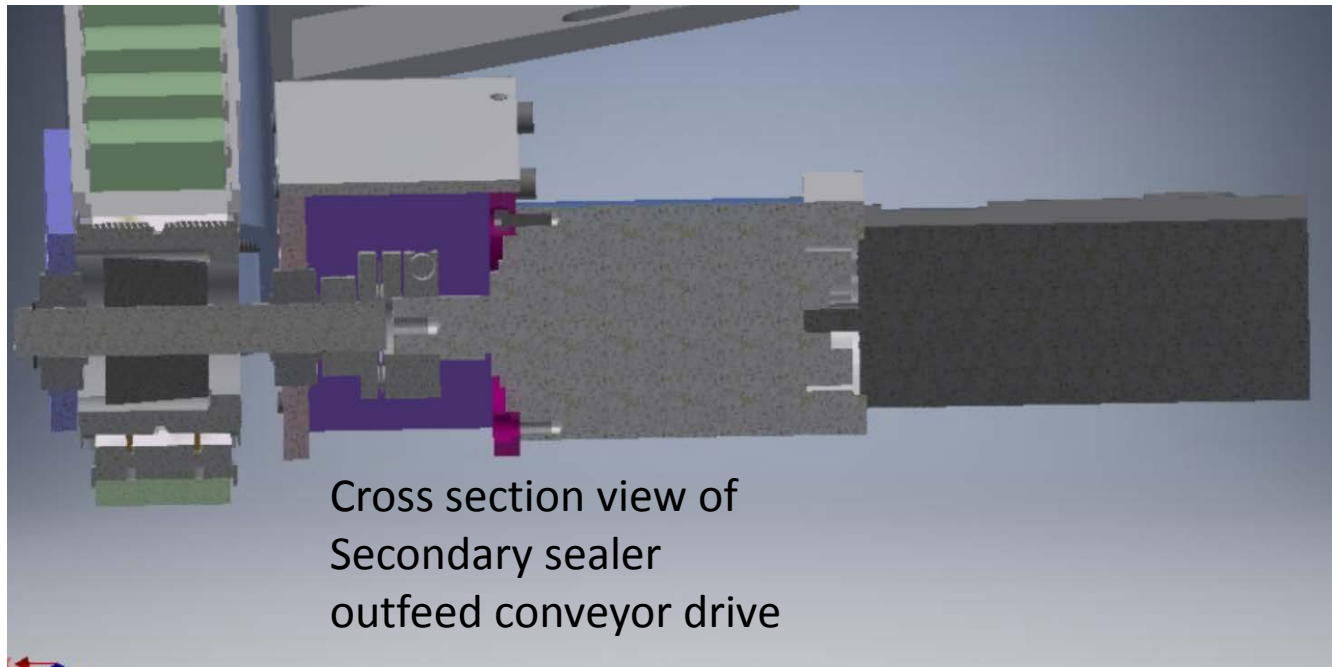


Lower fixed wiper raise / lower cylinder

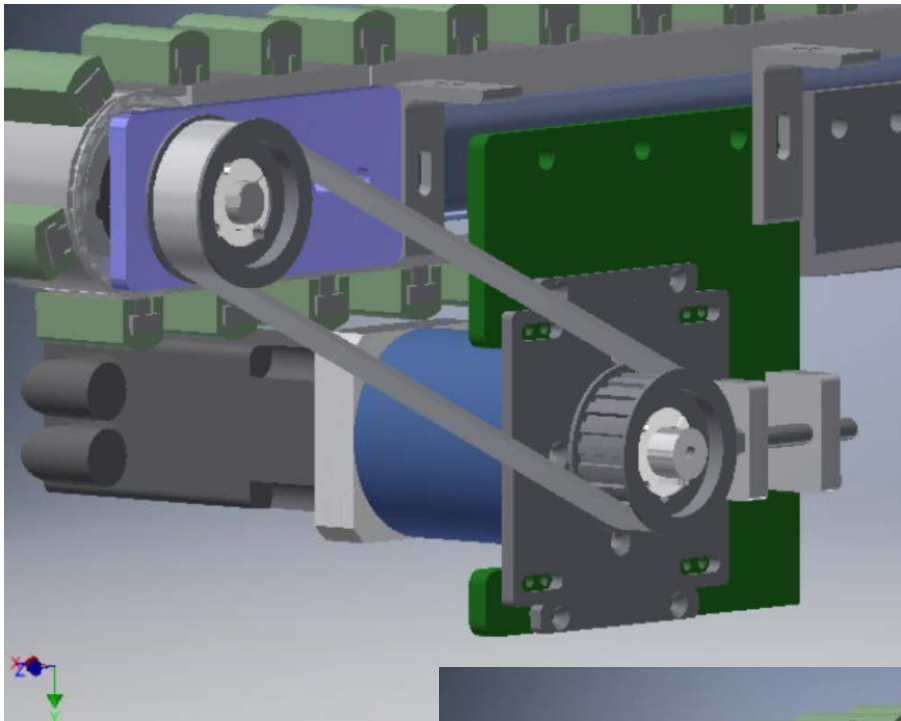




Fixed wipers shown in position

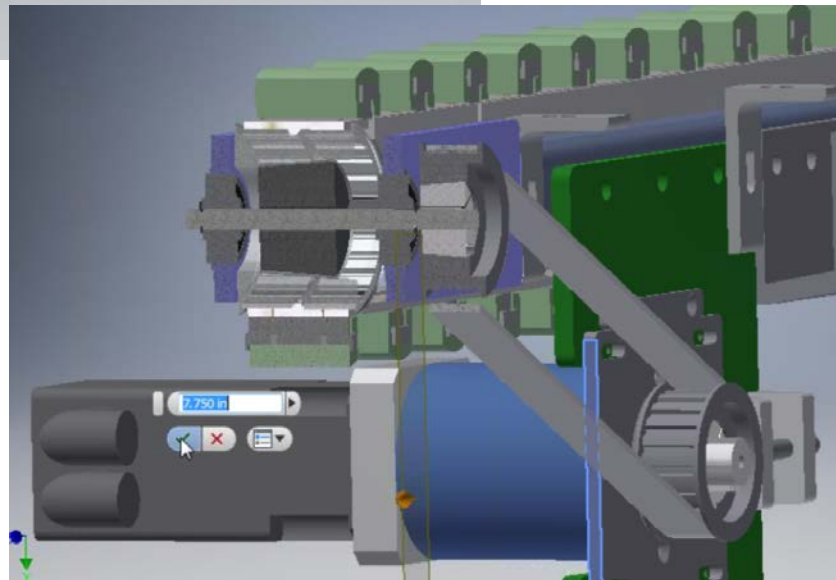


Cross section view of
Secondary sealer
outfeed conveyor drive

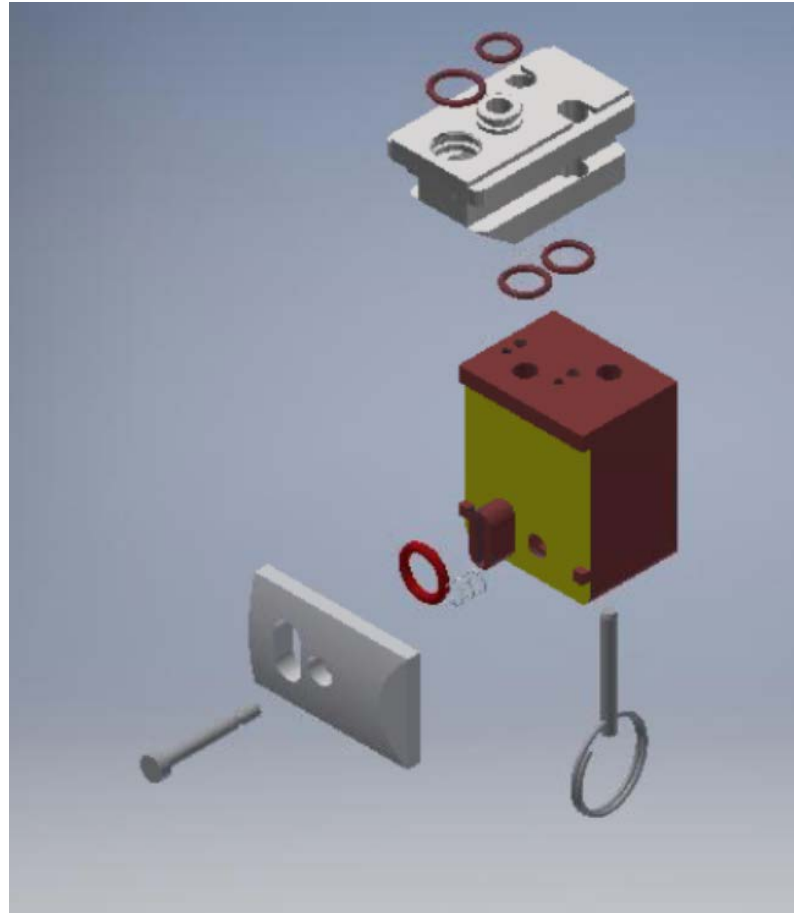


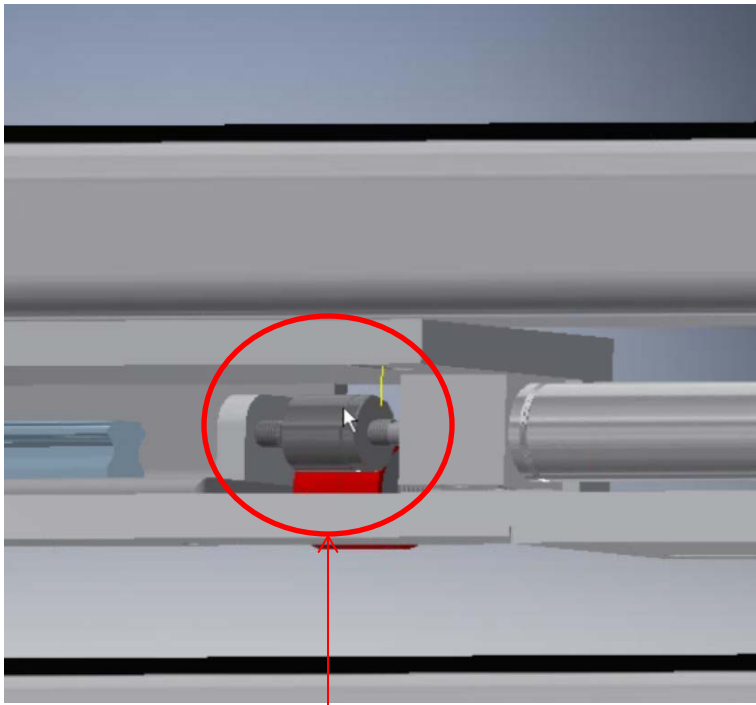
Secondary sealer infeed conveyor drive

Cross section of
Secondary sealer infeed
conveyor drive bearings
and pulleys

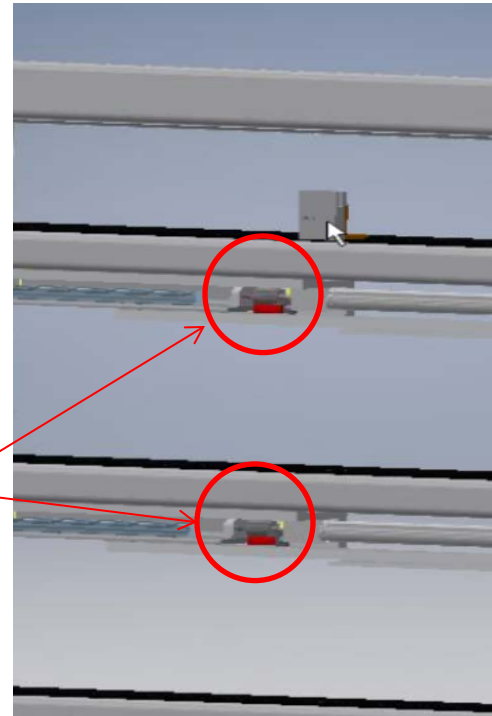


Exploder view of sealing nozzle assembly





Alignment couplers
for pop out supports
on secondary sealer



Out feed Inspection station

Conveyor drive

Product detect eyes

