

National Lucker Bowen K... Quality Tubing Alberta Instru... Baylor TS&M BLM Robertsd... Monoflo Albin's Enterprises Pr... Peck-O-Matic Gator Hawk Hous... Mathey Tech Power Vector Fib... Mono Eastern Oil Tools Gardner D... Pacific Inspection Unit Mariner LO... Specialty Fibercast Continental Em... Wilson RMI (Rig Manufacturing Intern... AmClyde Hydra Rig M/D TOTCO Oil To... Rebound Rig Fritz Culver Griffith Coop... Smith Fiberglass Advanced Wirecloth W... National Oilwell Oilwell Flanagan Ironwo... Chimo Equipment Rucker Brandt Varco... Universal SSR Shearer Woolley HITEC Baylor Wirecast Services Lucker IPS (Integrated Power Systems) Fritz Culver Flanagan Ironwo... HITEC Cardwell Texas Oil Tools Weston Oilfield Engineering IRI International Texas Oil Tools Gator Hawk M/D TOTCO TSCM Tuboscope Specialty SSR Dresco National O... Kremco Weston Oilfield Engineering McElroy Marine Machinery Norson Tuboscope UNIFLEX Heppburn AmClyde Omega Pumps Houston Scientific IRI International Pacific Skytop Brewster IRI International Cabot Pacific Inspection PEP IPS (Integrated Power Systems) Aktro SSR Quality Tubing Harrisburg Versatech Gator MATTGO HALCO PEP Shaffer Aktro Rebound Rig Mission Dresco Shearer RMI (Rig Manufacturing International) DELCO Procon As LOUIS ALLIS Griffin Brandt IRI International Oilwe... HALCO DELCO Hydralift Wildcat Services Albin's Enterprises Monoflo Tuboscope Cardwell Gregory Franks UNIFLEX Molde Ruston Subsurface Gardner Denver Qu... USF (Utility Steel Fabricators) Harrisburg Marine Machinery Crestex Fritz Culver Rucker Sauerman Bowen Procon As ROSS HILL Eastern Oil Tools Tuboscope TEM F... EMD (Electro Motive Division) Omega Pumps Houston TSCM Gregory Retsco Mission LOUIS ALLIS Pacific Inspection Rebound Rig AmClyde Koomsey Shearer HIT... Miller Oilfield Best Flow Products PCE Chimo Equipment National Oilwell Rulligan Versatech Kremco MATTGO Mathey Mono Kre... Oilwell Rebound Rig Flana... IPS (Integrated Power Systems) Versatech Cooper Specialty Wilson Harrisburg Russell Subsurface Ideco Versatech Chimo Equipment Retsco Omega Pumps M... Woolley Crestex Rulligan MATTGO Flanagan Ironworks Turner Oilfield Service TEM (Tulsa Equipment Manufacturing) Monoflo Baylor USF (Utility Steel Fabricator... UNIFLEX DSS (Drilling Support Services) Sauerman ROSS HILL Gator Hawk EMD (Electro Motive Division) Hydra Rig Vector Monoflo Tech Power Bowen Rucker Fidmarsh Oil Tools Solutions MATTGO Lucker Hydra Rig Pacific Inspection Robert Johnson Continental Emsco Peck-O-Matic Cooper HITEC Continental Em... Robert Johnson Custom D... & Insert Koomsey Oilwell Shaffer MATTGO Elmar Oilwell National Quality Tubing Vector Baylor Sauerman Ideco LOUIS ALL... ROSS HILL Molde Ideco E... Aktro Peck-O-Matic Specialty Miller Oilfield Cabot Koomsey Rucker Monoflo Elmar Custom Die Insert Elmar Varco Card... Retsco M & W Gregory Ve... Tech Power Norson Tech Power Best Flow Products TEM (Tulsa Equipment Manufacturing) BLM Weston Oilfield Engineering... Services McElroy Marine Machinery DELCO National Chimo Equipment Brandt Ideco Gator Hawk Brandt SSR Shaffer R... Star Fiberglass HALCO Gardner Denver Advanced Wirecloth Shaffer Sauerman PCE Flanagan Ironworks Bowen RM... Varco Wheatley Gato Oilwell Rig Oilwell Griffith Skytop Brewster Specialty PEP AmClyde Nelson Tuboscope K... Actuality Tubing Gordon Creek National Oilwell Oil Tools Solutions Mathey Albin's Enterprises Gardner Denver IPS... McElroy Marine Machinery Nelson Tuboscope UNIFLEX Heppburn AmClyde Omega Pumps Houston Scientific IRI... Scientific Miller Oilfield USF (Utility Steel Fabricators) Skytop Brewster Custom Die Insert Star Fiberglass Hydra... Wheatley Gato Unit Marine Lucker Eastern Oil Tools Stalprodukt Fritz Culver Unit Mariner Heppburn TS&M... Mathey PCE Woolley M/D TOTCO HITEC Turner Oilfield Service McElroy Marine Machinery Lucker LOUIS... Subsurface Alberta Instrument Stalprodukt Fidmarsh Turner Oilfield Services IRI International Rucker

GLOBAL  DROPS PREVENTION GROUP

Łukasz Szadkowski

KRISTIANSAND

WHERE WE ARE



NOV Employees Globally.....	65,750
RS Employees.....	22,200
RS Employees Norway.....	4,750
Operation.....	3550
Aftermarket.....	1200
Main office.....	Kristiansand

NOV Global business units

NOV's vast operations are divided into three financial reporting segments

**Rig Systems
& Aftermarket**

**Wellbore
Technologies**

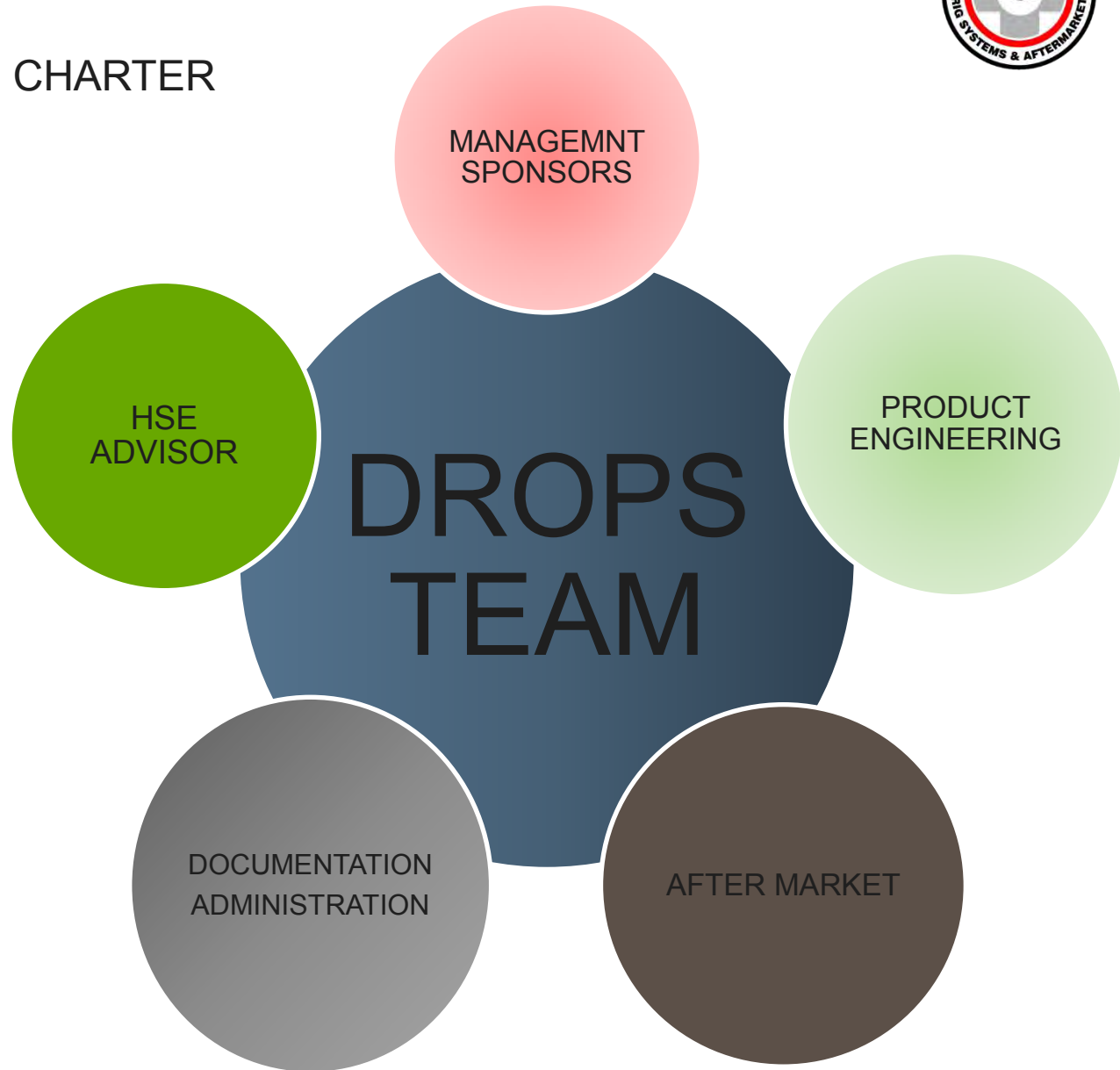


**Completion &
Production Solutions**

Rig Systems & Aftermarket



NOV DROPS CHARTER



Tracking Dropped Objects

Tracker Tickets are used by NOV for logging customer:

- Questions
- Issues
- Complaints

Tracker Tickets can be related to:

- field support, people
- field support, technical
- parts
- product performance
- product quality
- requested design changes/modifications

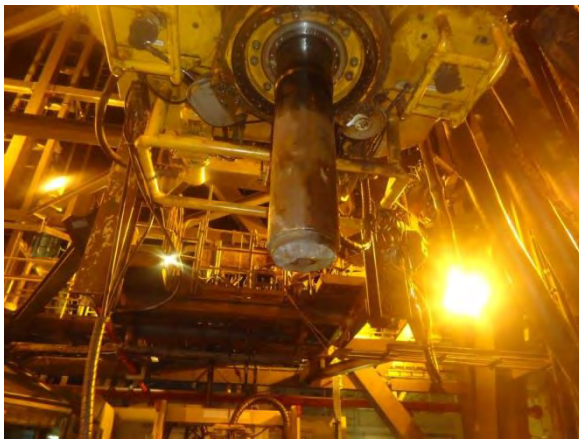


HSE incidents-unplanned and uncontrolled events that result in:

- a dropped object,
- near hit (near miss),
- injury not requiring medical care (**first aid, non-recordable**),
- injury requiring medical care (**recordable**),
- fatality,
- damage to the environment.

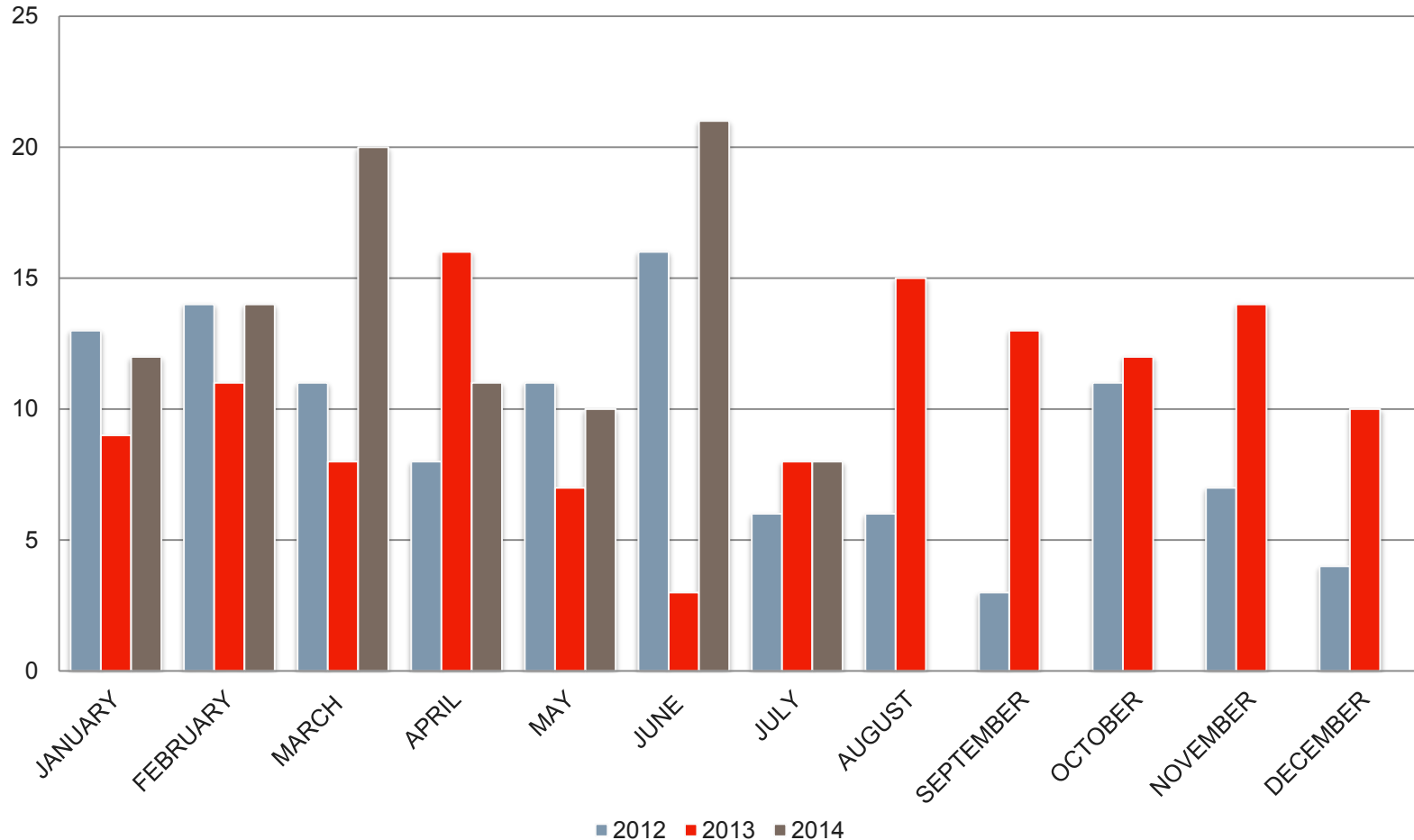
What is a dropped object for NOV DROPs?

- Part of machinery/equipment detached/separated and dropped or launched from original mounted position.
- Uncontrolled and unplanned release of stored energy



Incidents in numbers

REGISTERED DROPPED OBJECT INCIDENTS



Average number of DROPS incidents per month:

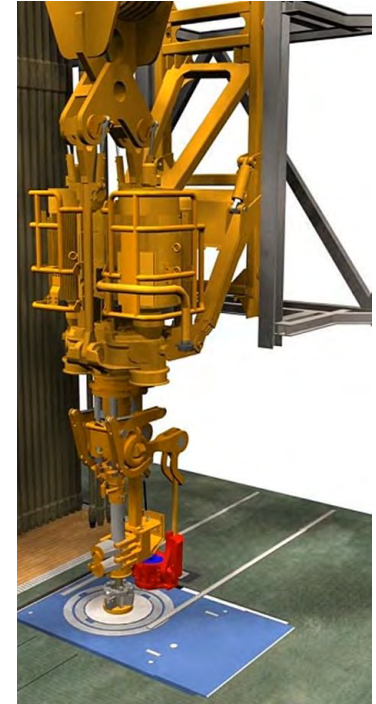
- 2012 9,2
- 2013 10,5
- 2014 12,0

Reasons:

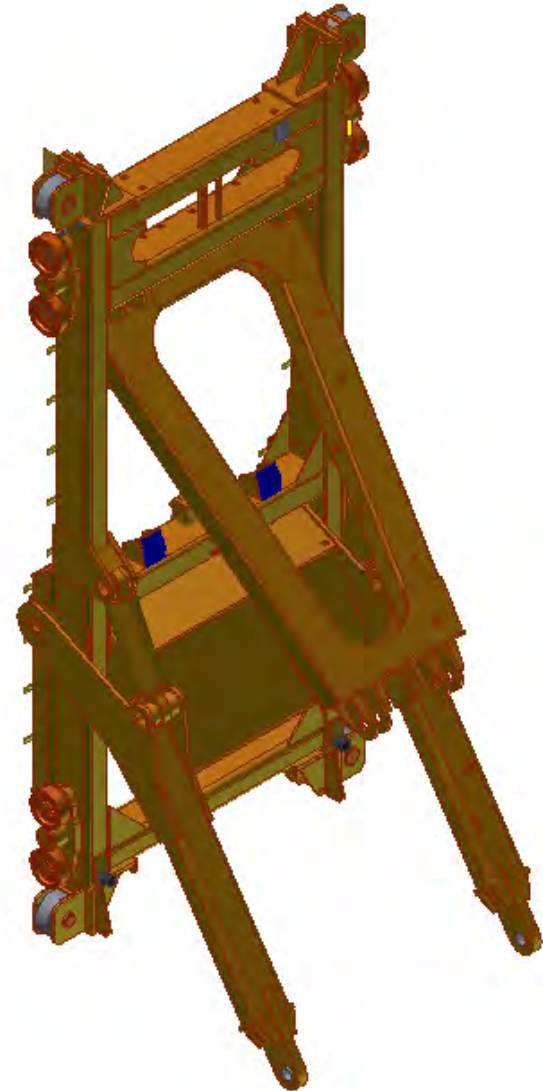
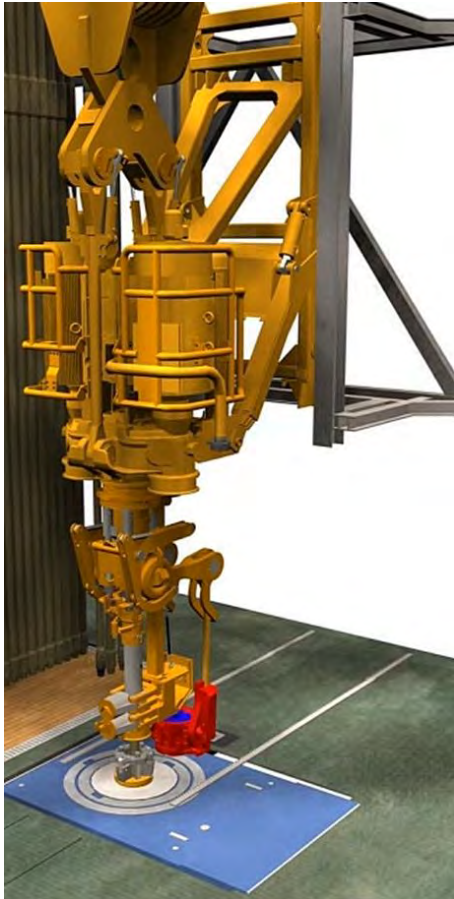
- Increase number of equipment in operation
- Internal Dropped Object focus (NOV)
- High Customers focus on DROPS
- Growing industry awareness

LESSONS LEARNED:

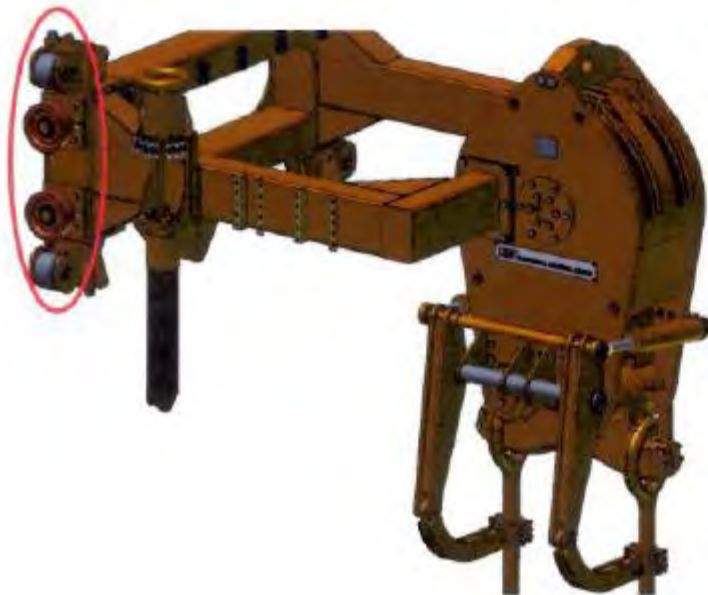
- HPS DOLLY TRACK ROLLERS
- BRIDGE RACKER TACHO
- CRANE BOOM REST
- INSTALLATION



HPS DOLLY TRACK ROLLERS



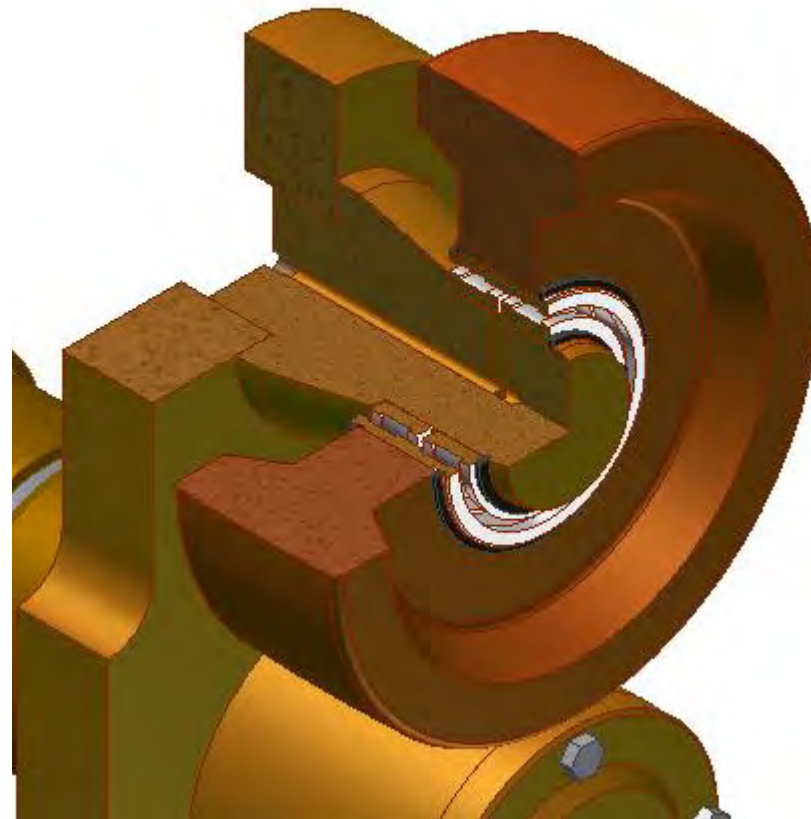
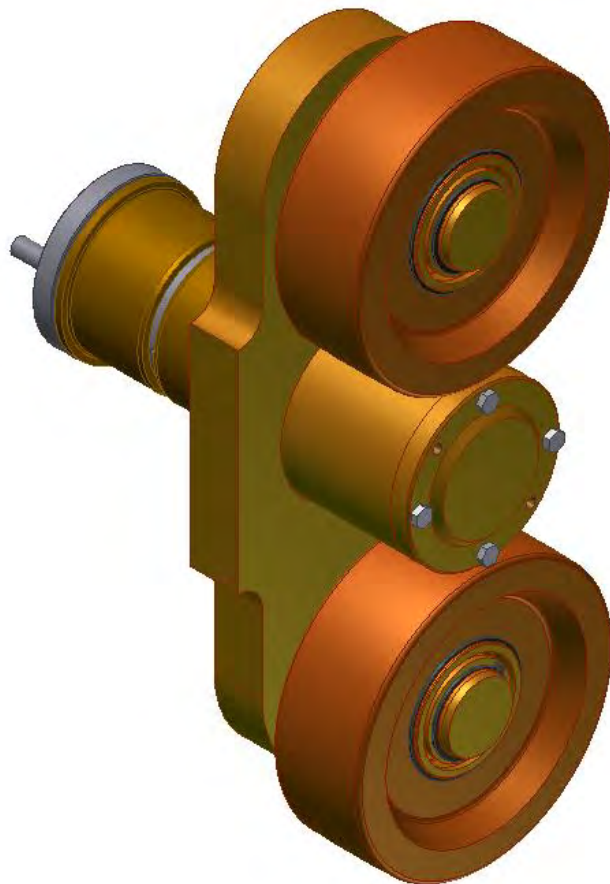
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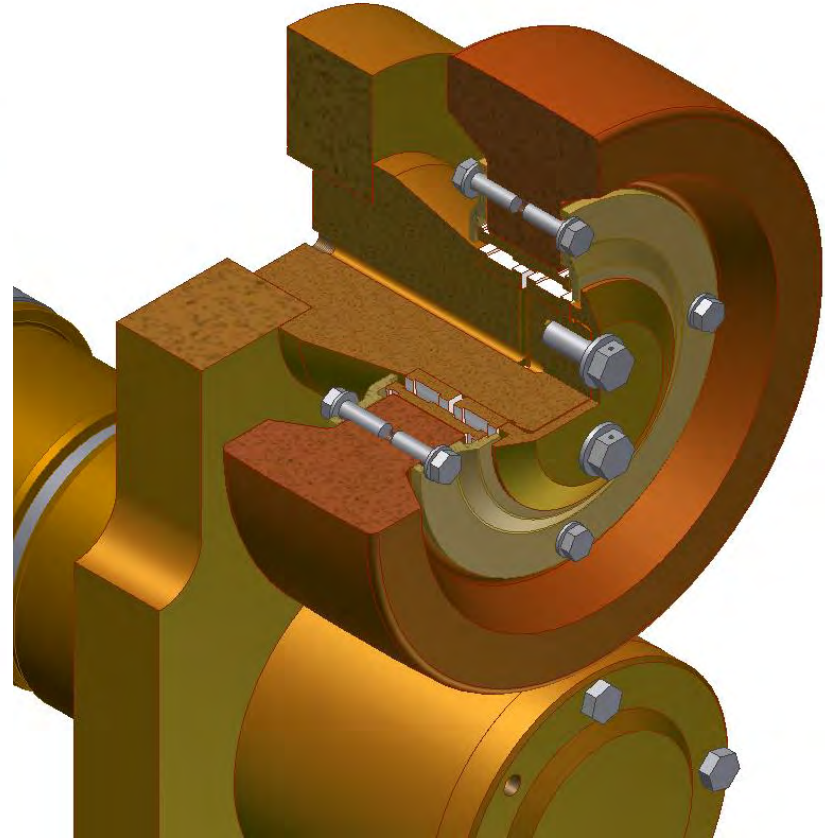
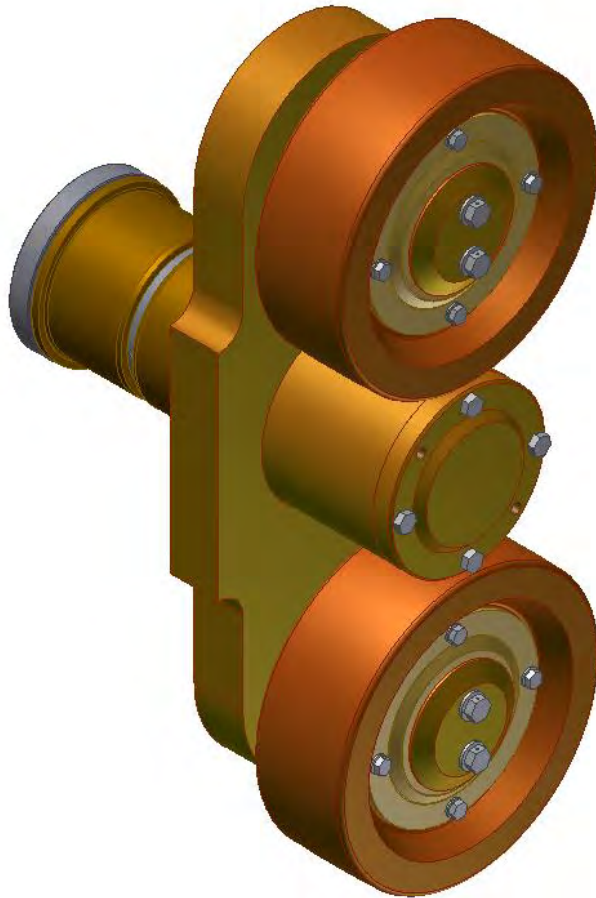
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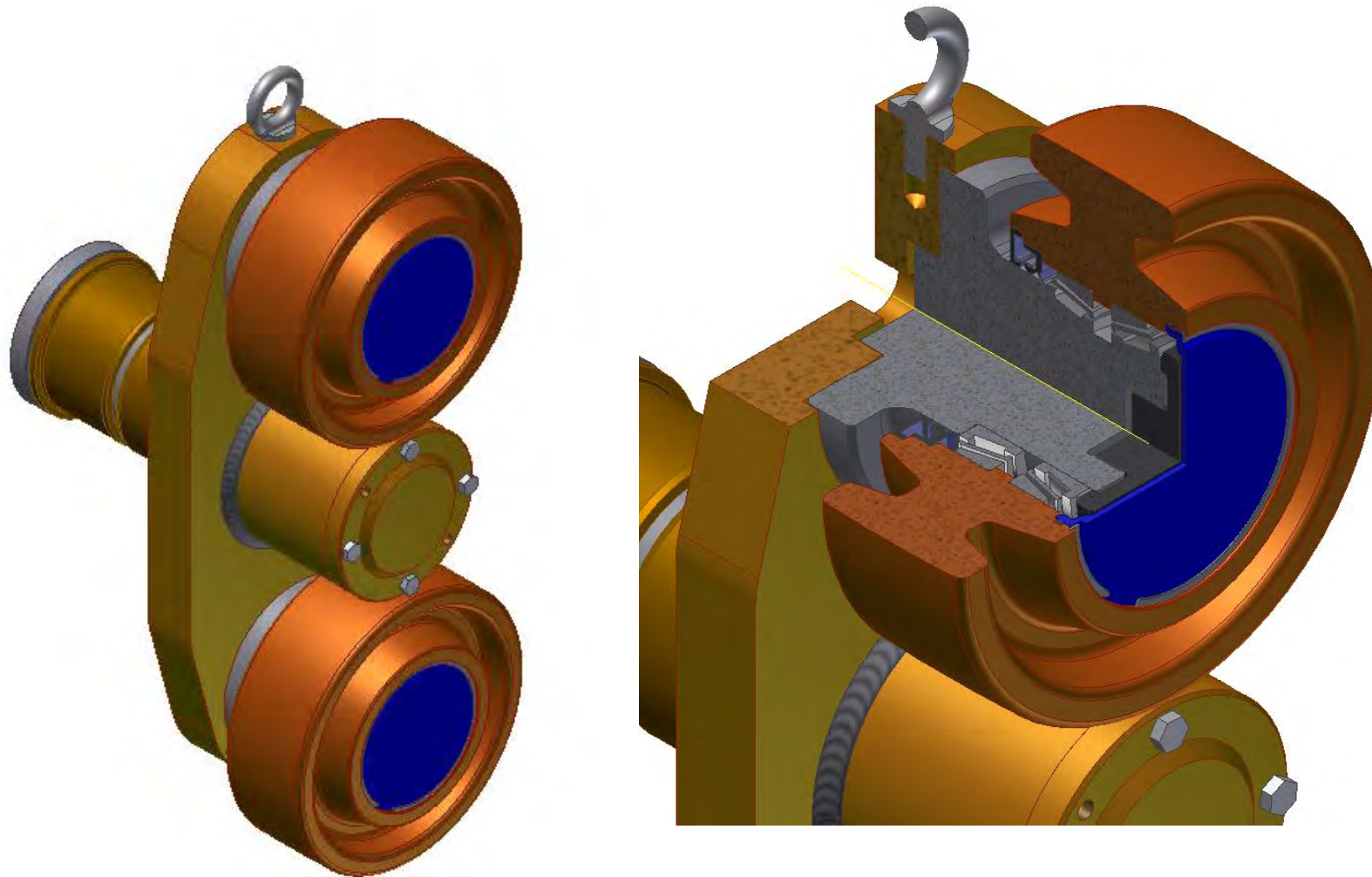
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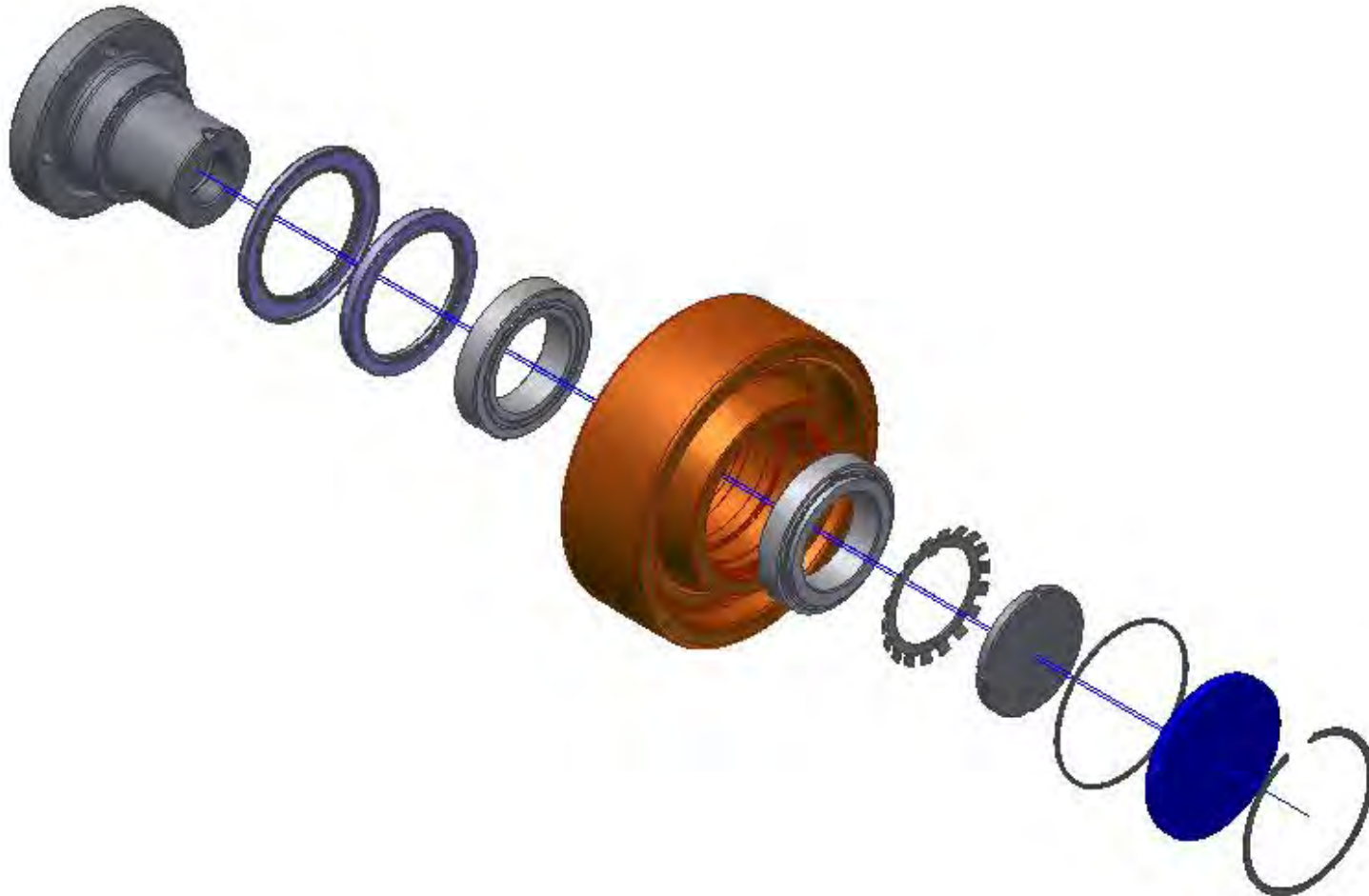
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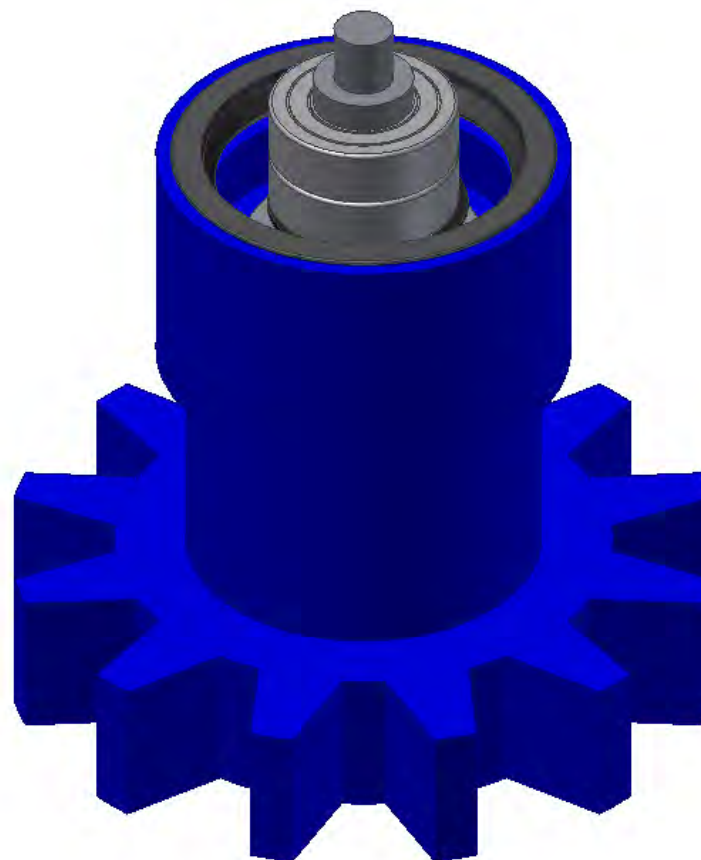
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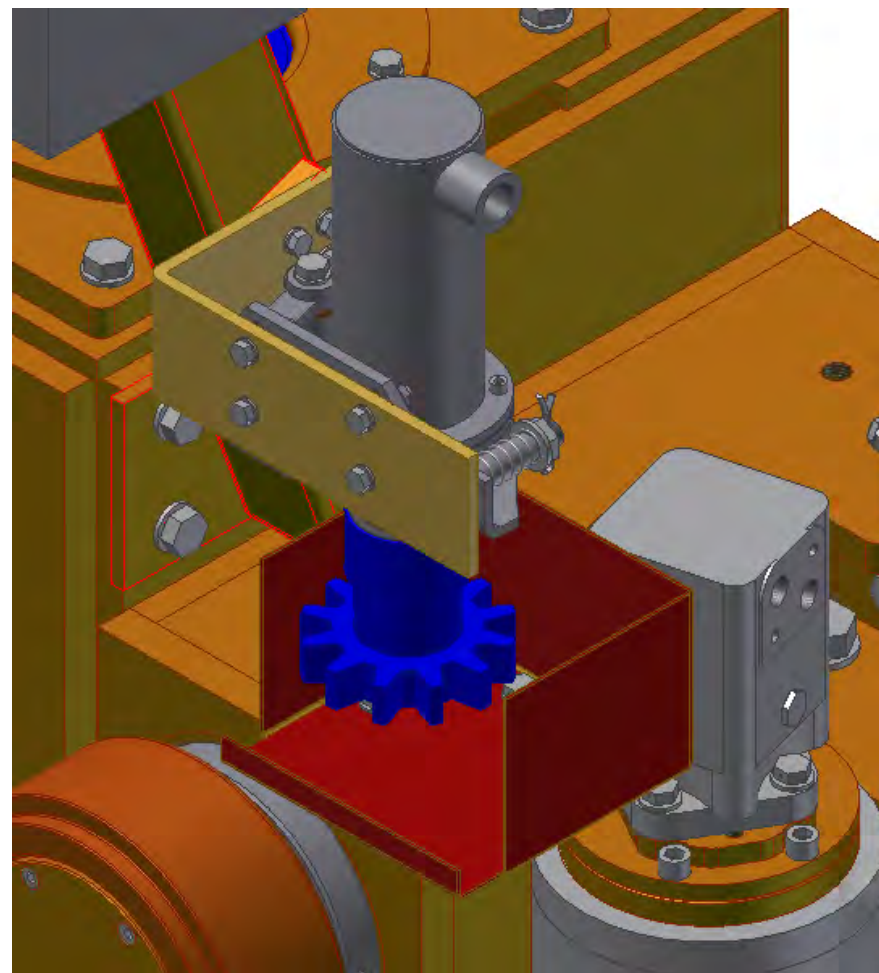
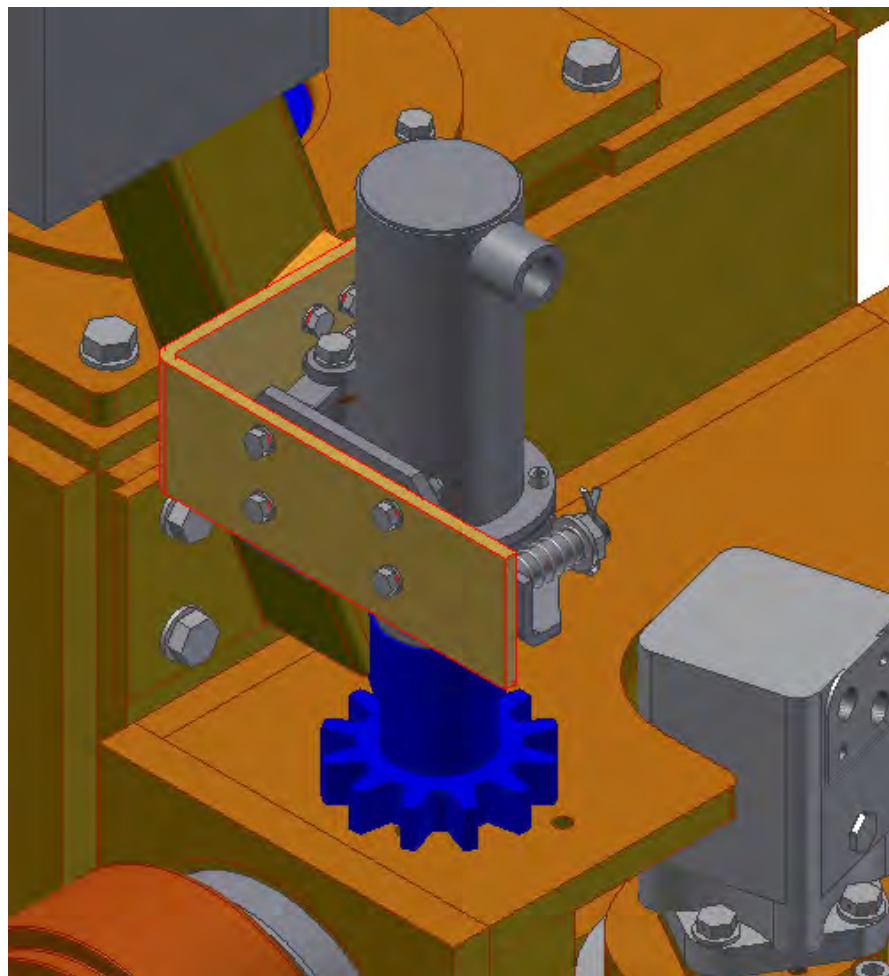
BRIDGE RACKER TACHO



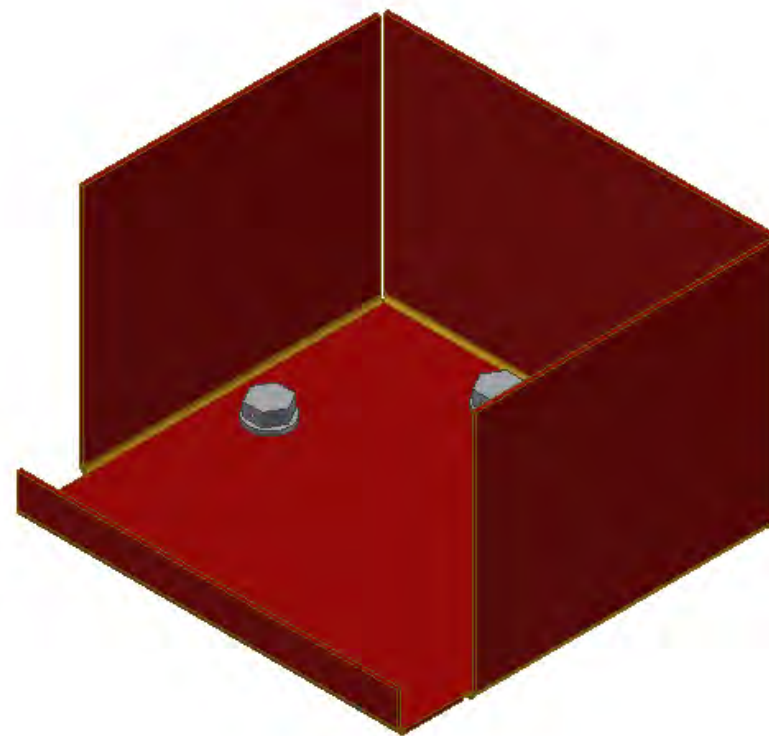
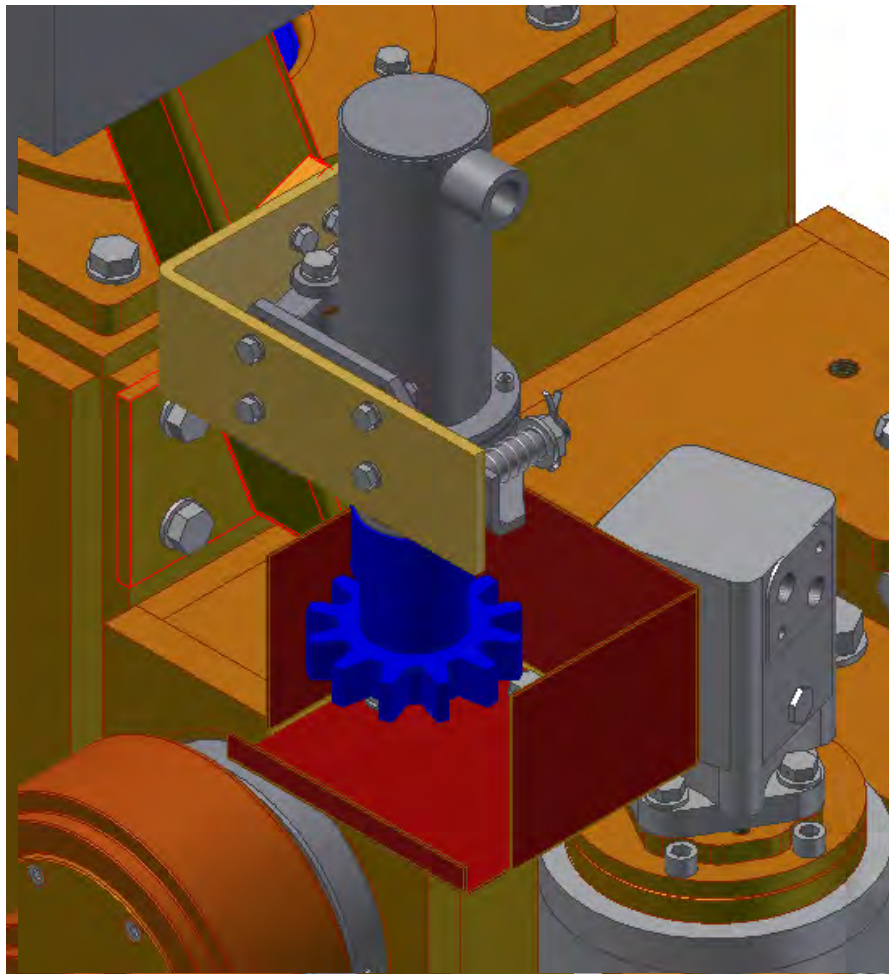
BRIDGE RACKER TACHO



BRIDGE RACKER TACHO



BRIDGE RACKER TACHO



CRANE BOOM REST



Fall Energy = $M \times G \times H$
Fall Energy = $18\text{kg} \times 9.8 \text{ m/s}^2 \times 10\text{m}$
Fall Energy = 1764 J

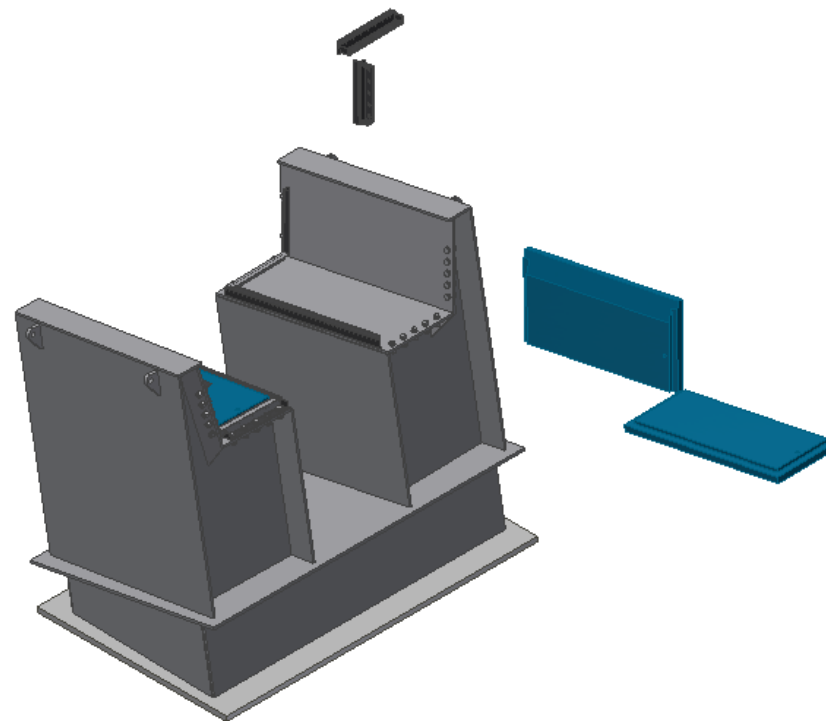
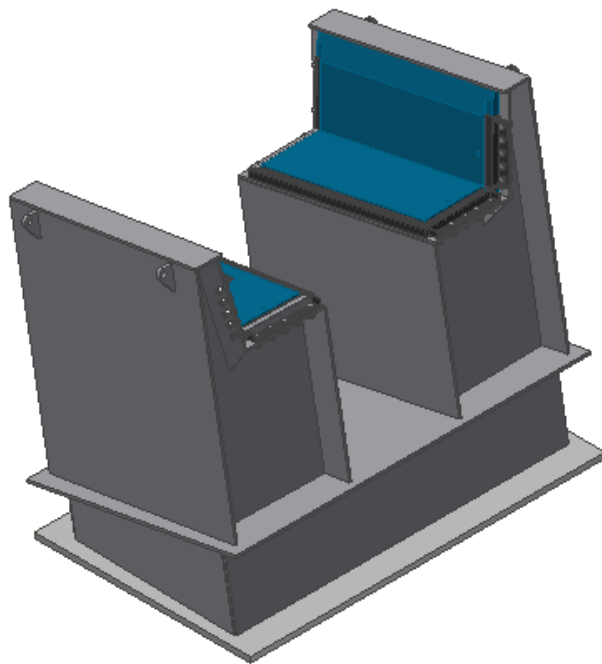


CRANE BOOM REST

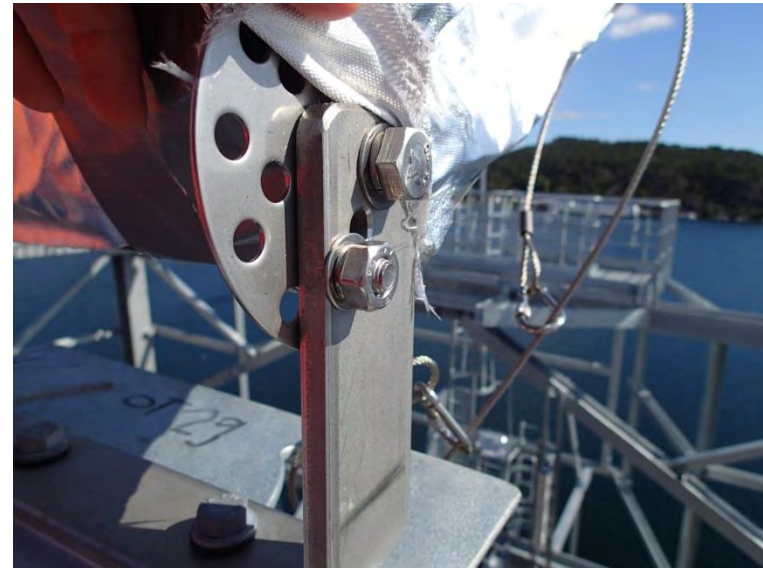


CRANE BOOM REST





INSTALLATION



INSTALATION



INSTALATION





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