



TECHNOVOS
ENGINEERING & CONSULTING LLP

AGILE | COLLABORATE | DELIVER

From Ideation to Implementation

ENGINEERING SERVICES AND NEW PRODUCT DEVELOPMENT
CASE STUDY-MINI TUNNEL BORING MACHINE

Area of our Focus- Services we offer Are:

1. New Product Development
2. Product Ideation and Concept Study
3. Legacy Conversion
4. ECN / ECR
5. CAD Conversion (2D to 3D)
6. Reverse Engineering
7. Product Indigenization
8. Re-Engineering or Product Re-Evaluation
9. Product Engineering and Prototyping
10. BPR (Business Process Reengineering)
11. Technical & Product Manual Publication



OUR DOMAIN EXPERIENCE



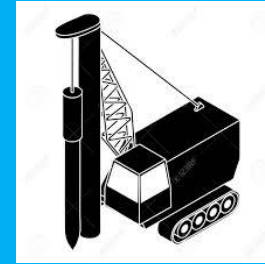
MATERIAL
HANDLING



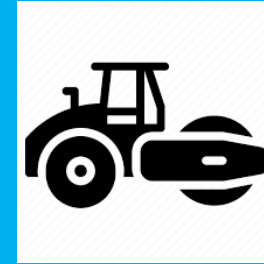
EARTH MOVING



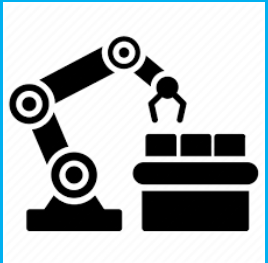
AGRICULTURAL



DRILLING



ROAD INFRA



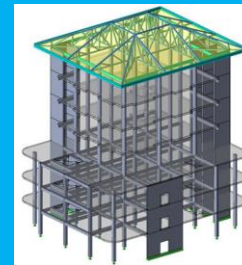
INDUSTRIAL



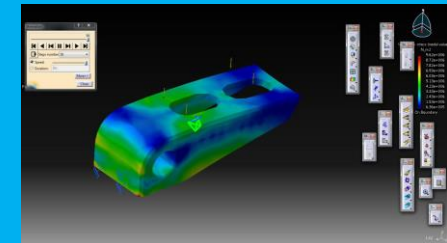
BPR &
PROCESS
AUTMATIO



MINING
MACHINERY



STRUCTURAL
DESIGN/
ENGINEERING



STRUCTURAL
ANALYSIS



CASE STUDIES-New Product Development

1. Mini Tunnel Boring Machine

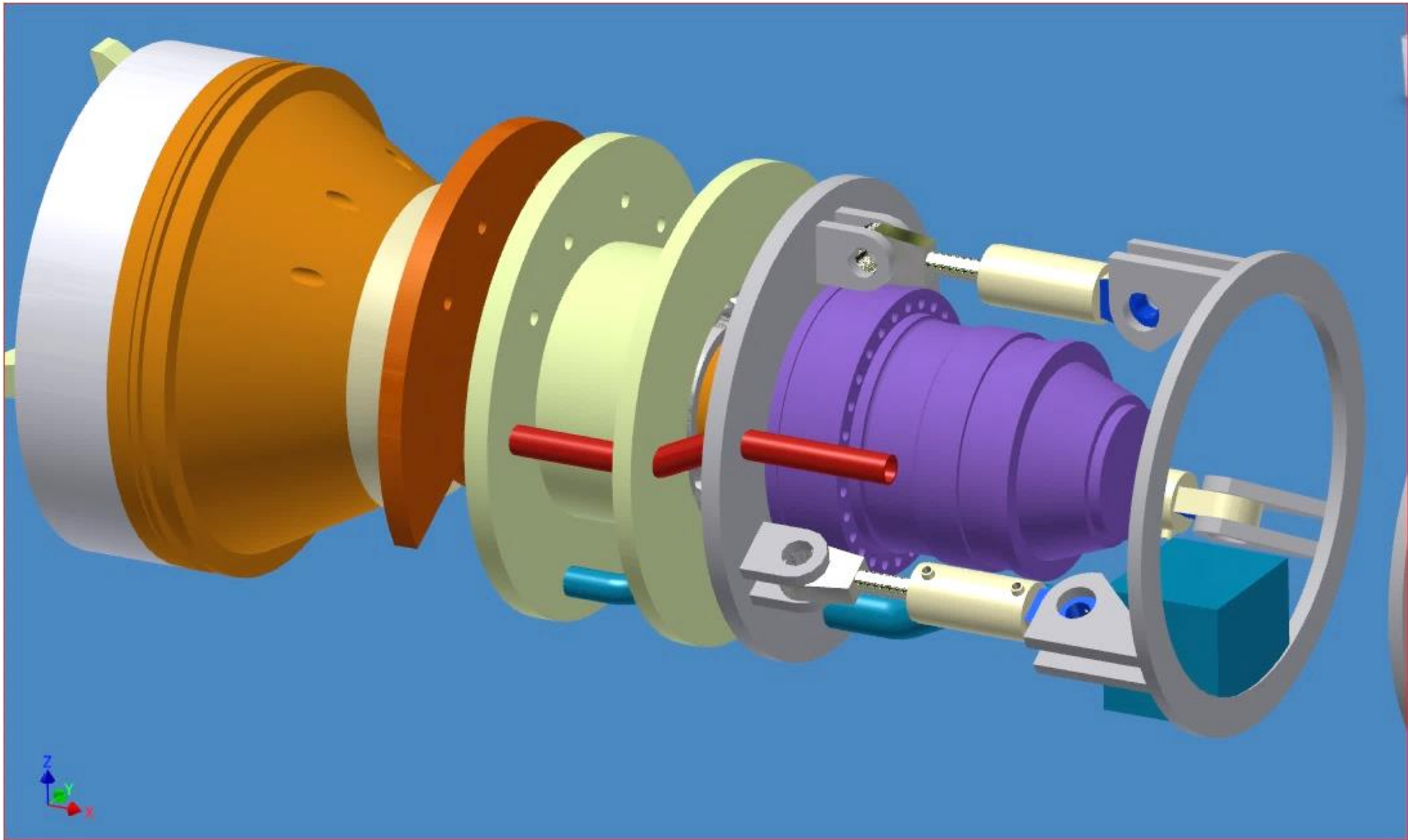


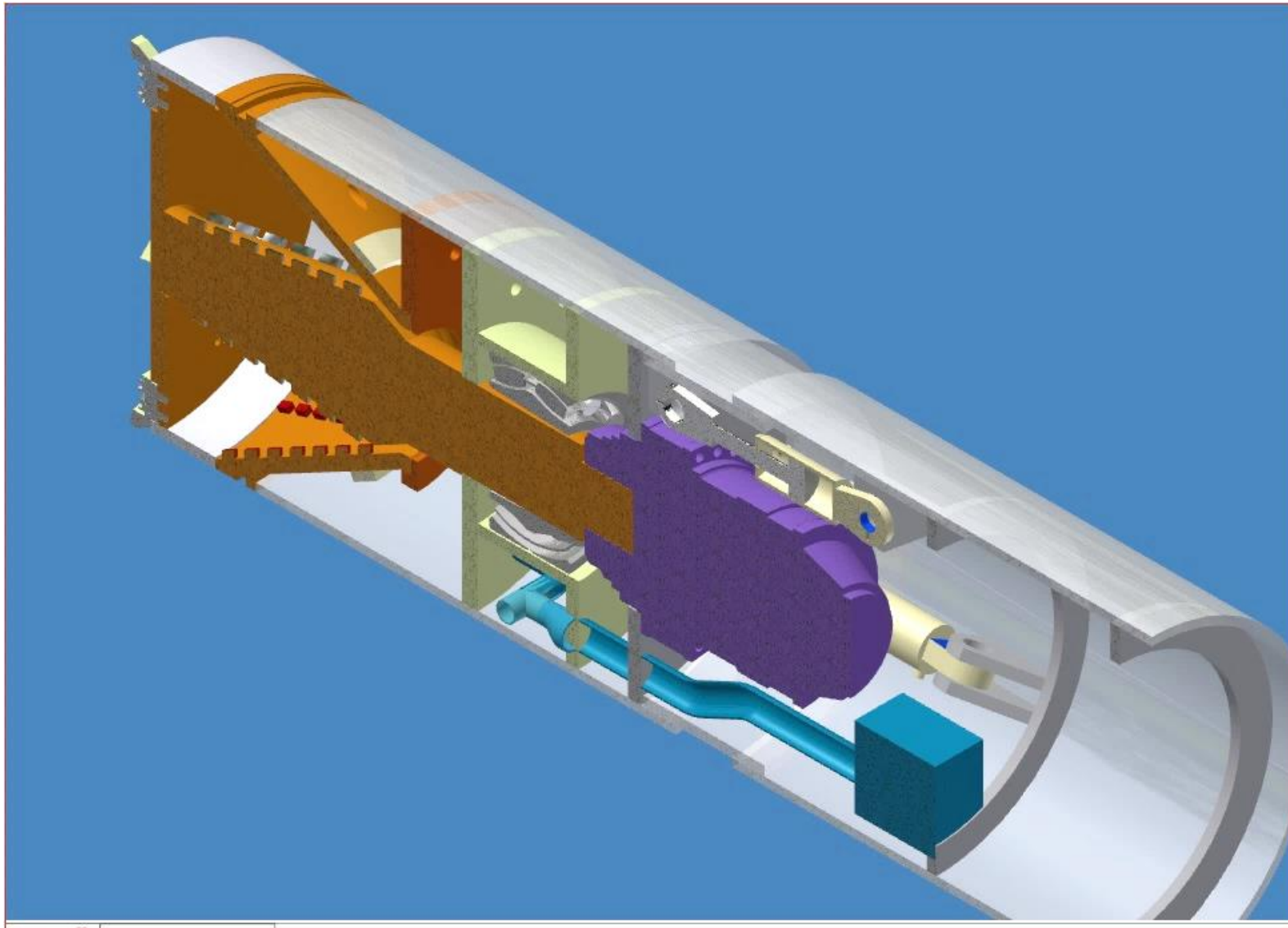
CASE STUDY:

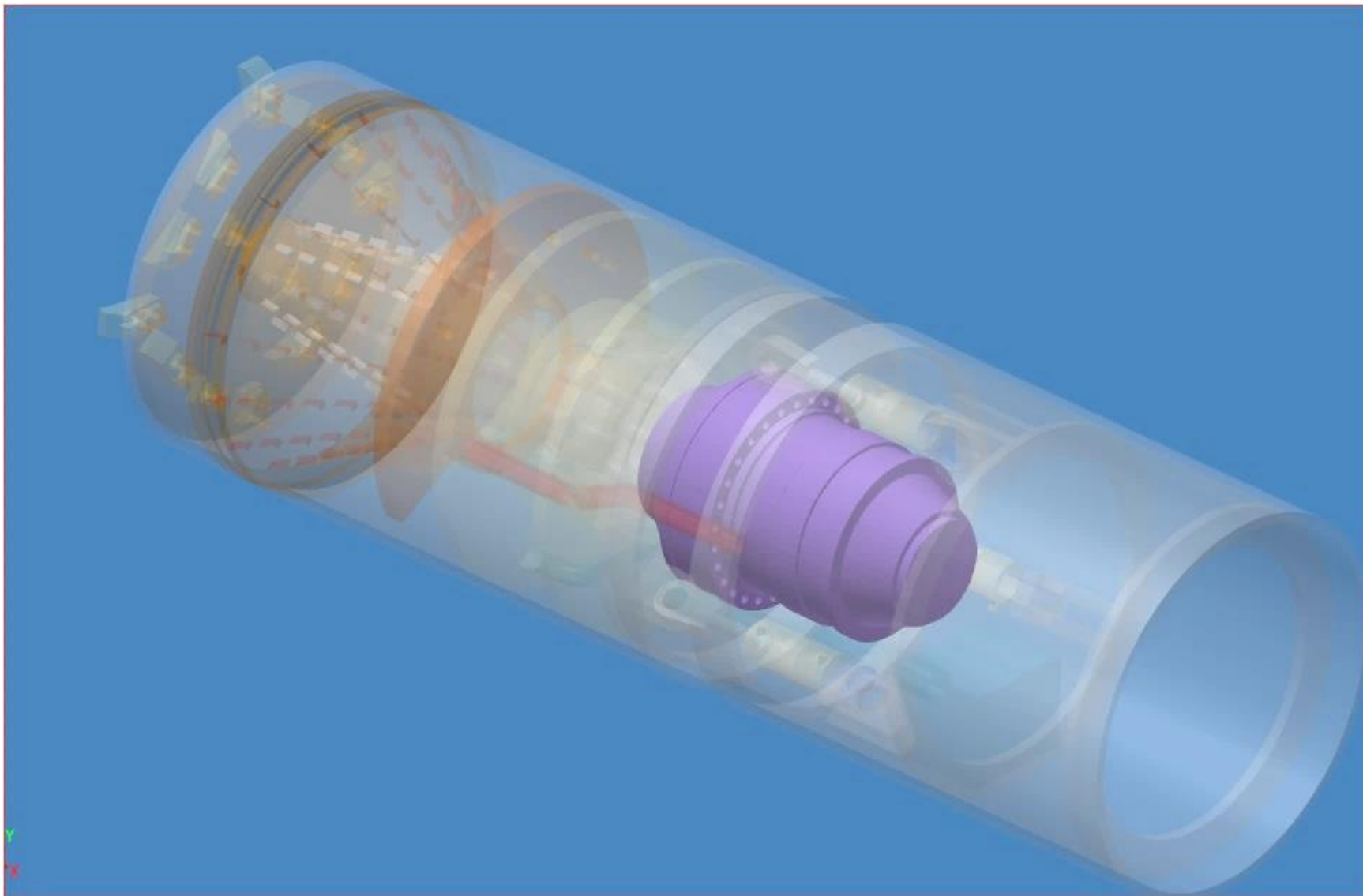
MTBM (Mini Tunnel Boring Machine)

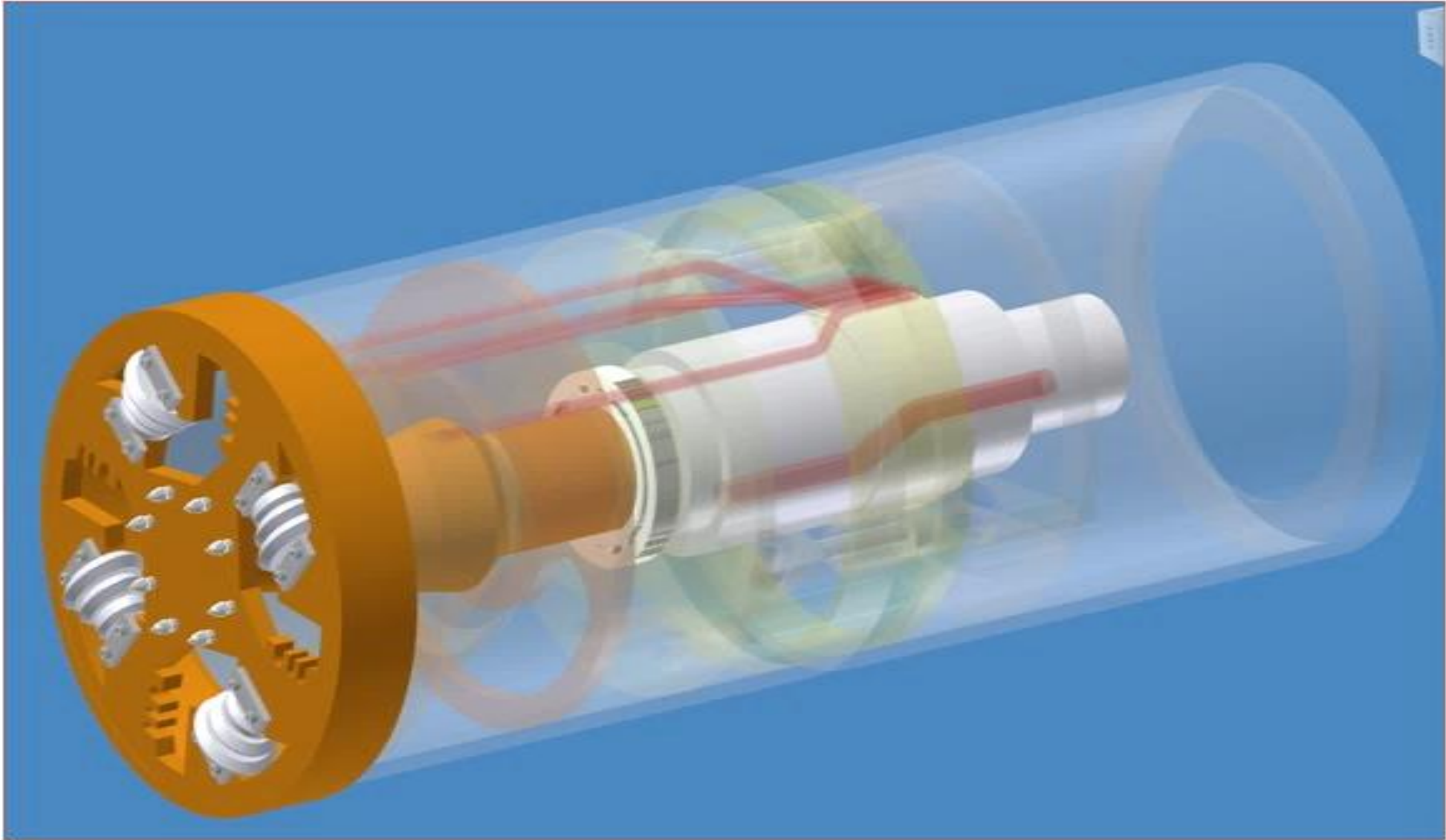
- **MTBM of 1 meter diameter used for sewer and utility tunnels**
- **Cutter head design for soft soil and mixed rock formations**
- **FEA of cutter head and body**
- **Design for mounting of cutter head hydraulic power pack, slurry system, fresh water supply for tunneling / cleaning, Bentonite system for soil stabilization**
- **CAD PLATFORM: SOLIDWORKS**
- **DURATION: 1 YEARS**
- **SCOPE: PRODUCT DESIGN & DEVELOPMENT. ANALYSIS AND RESULTS INTERPRETATION, STRUCTURAL ANALYSIS.**

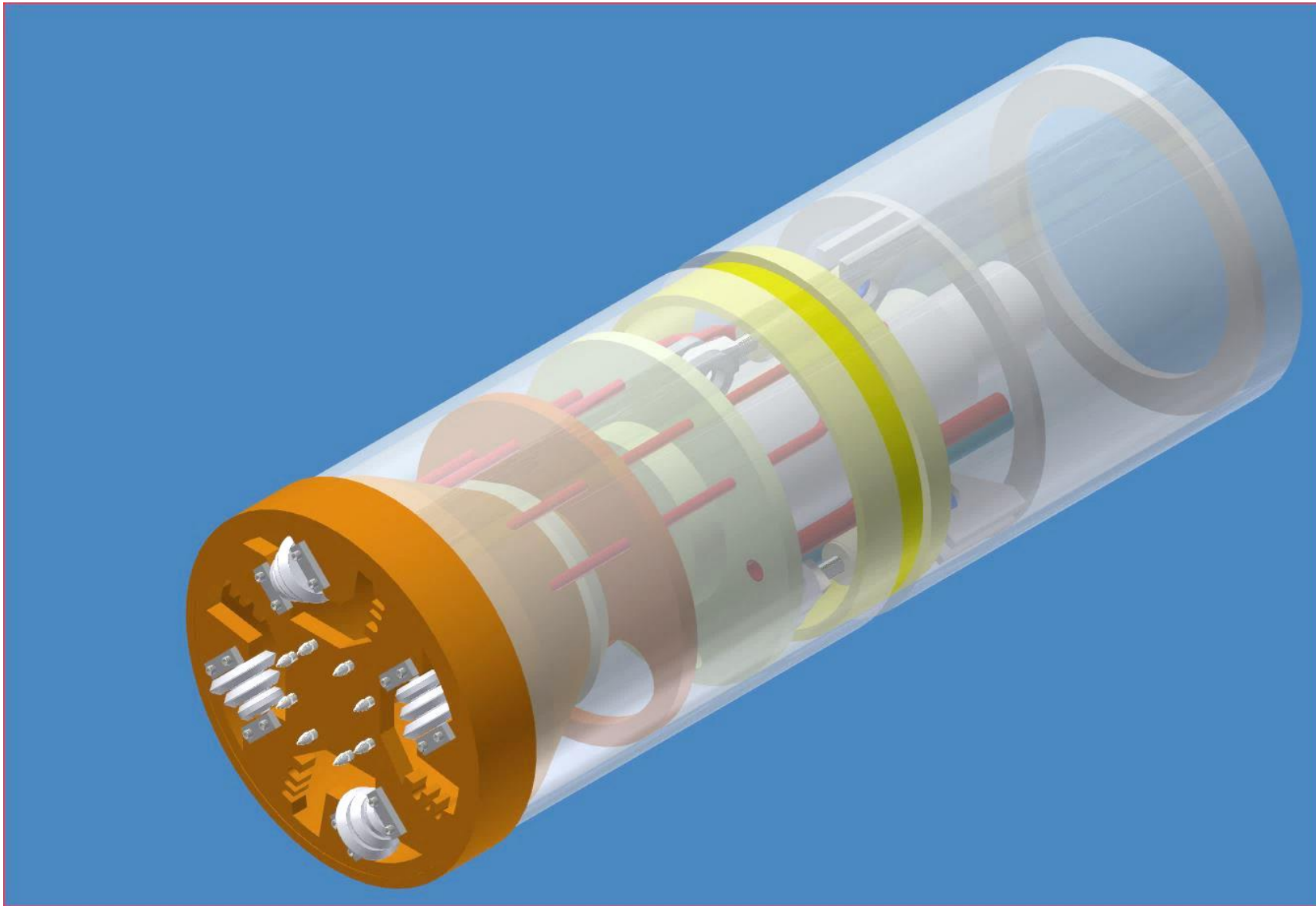


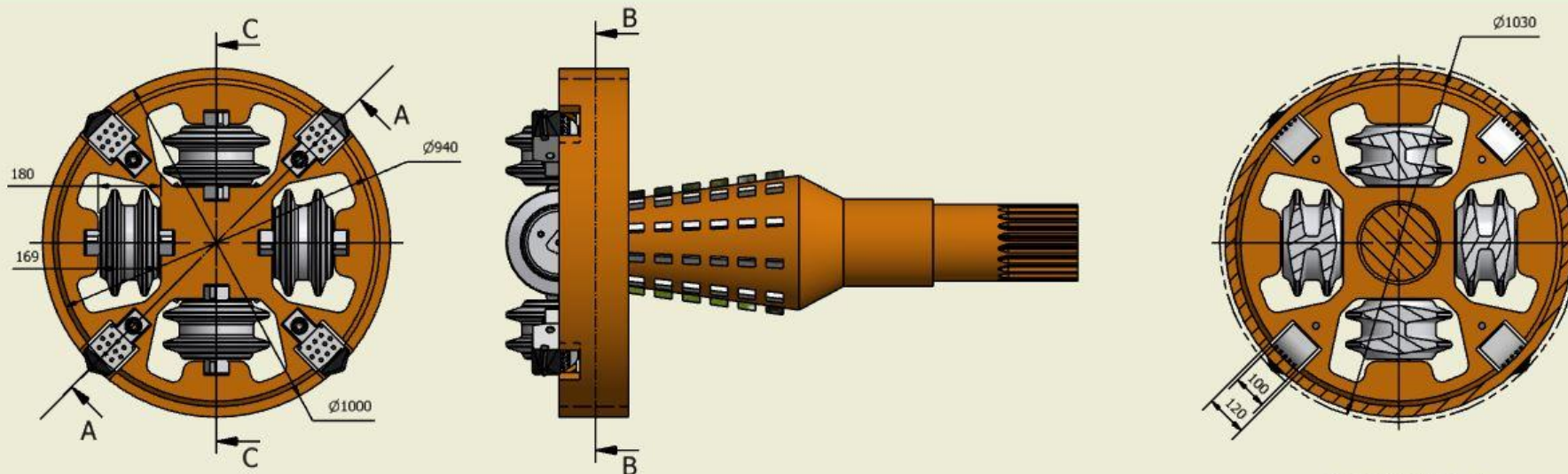




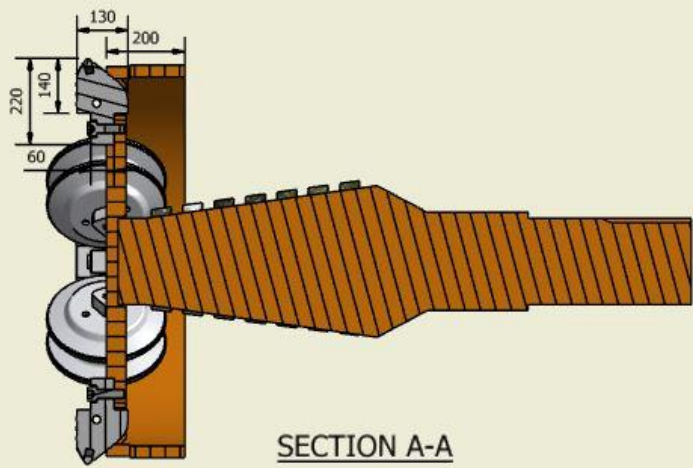




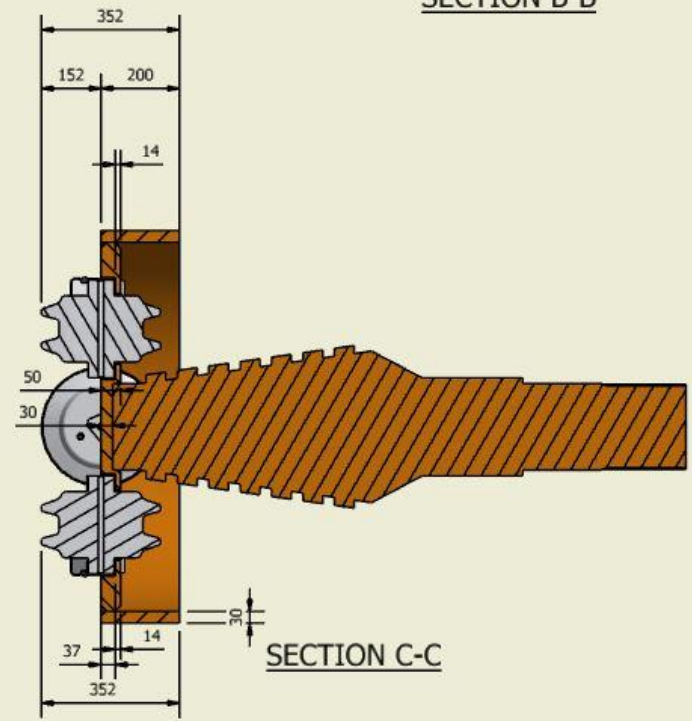




SECTION B-B

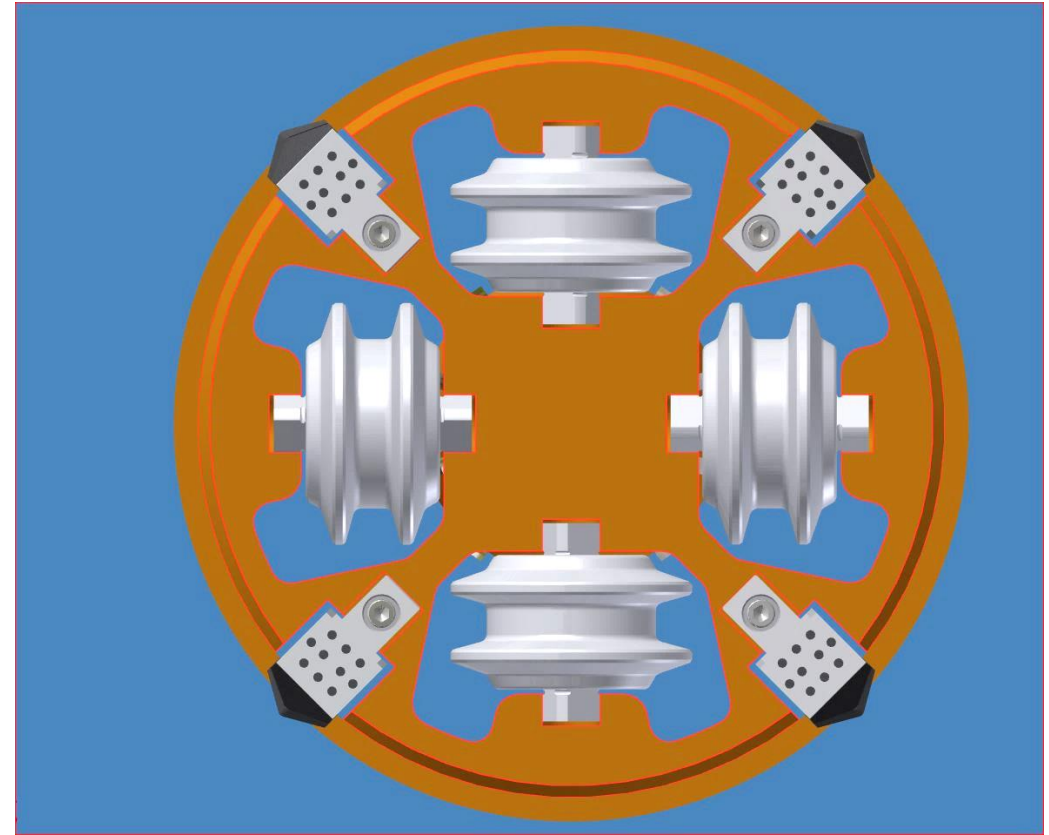
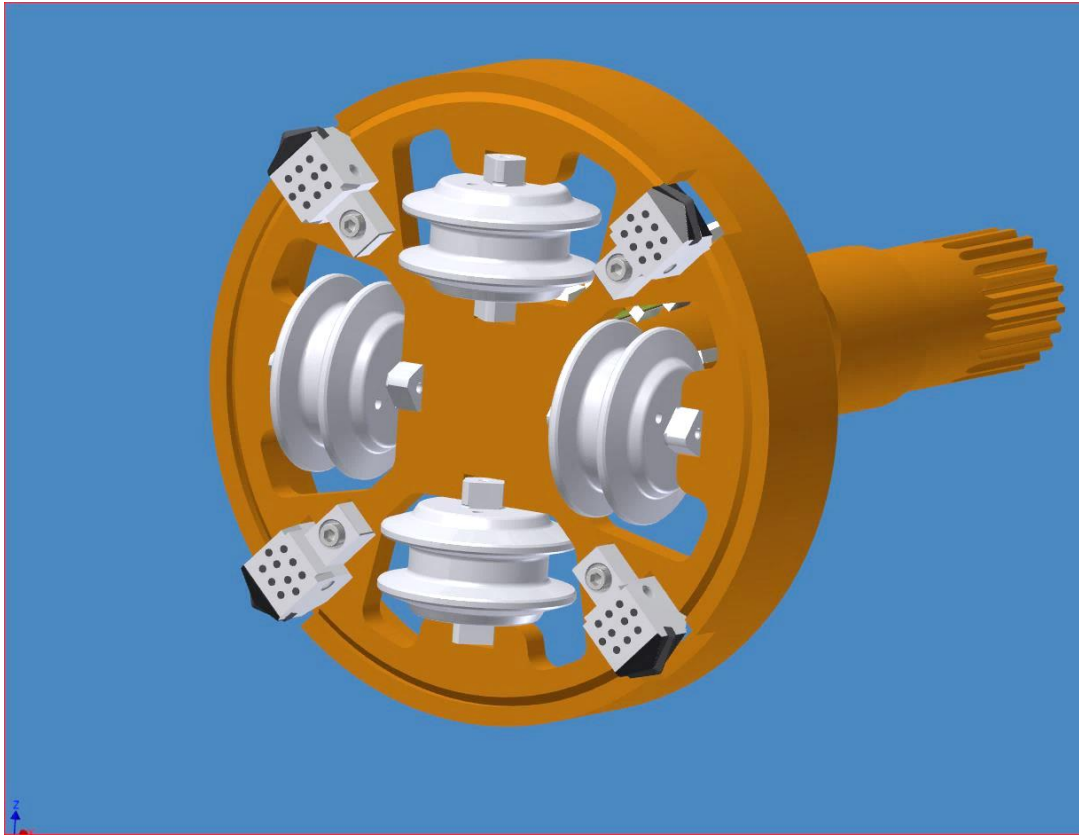


SECTION A-A



SECTION C-C



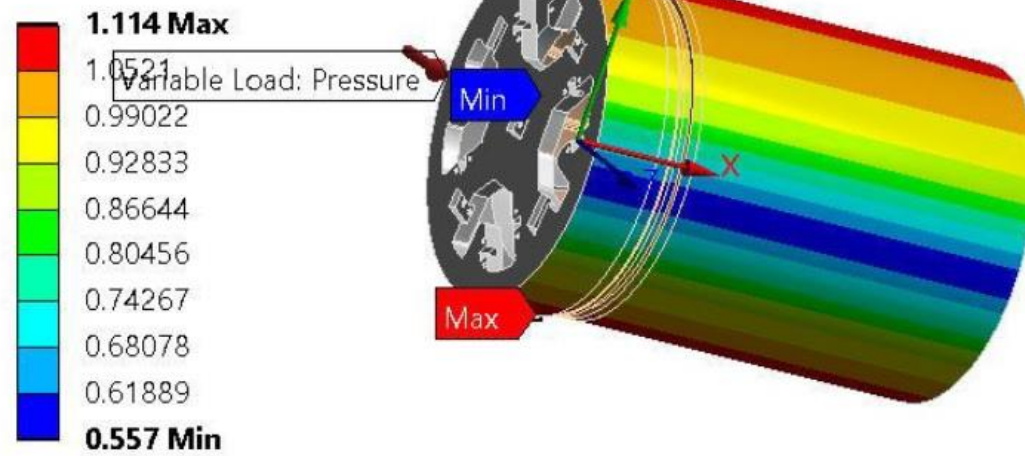


B: MTBM_Case1

Pressure

Time: 1. s

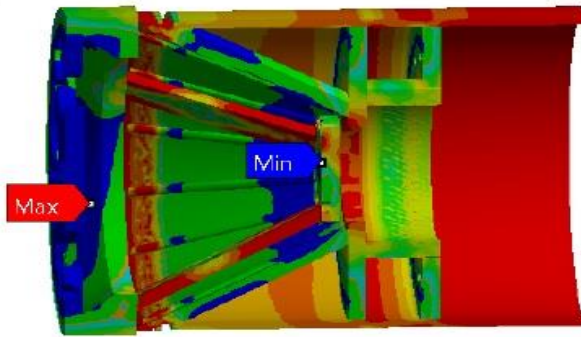
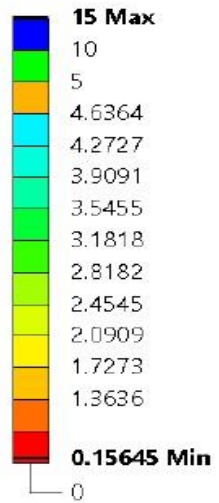
Unit: MPa



Meshed MTBM Demonstration Model

B: MTBM_Case2

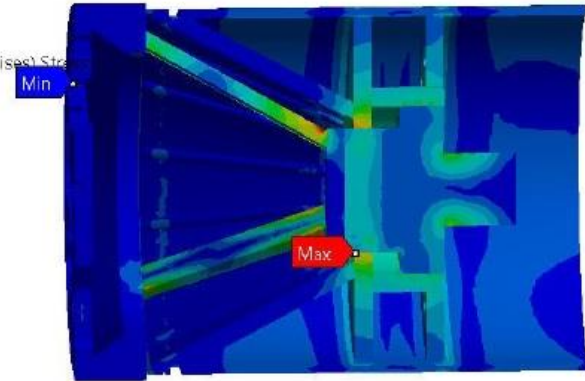
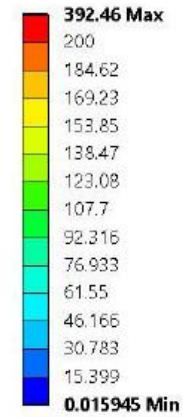
Safety Factor
Type: Safety Factor
Time: 1



Von mises Stress

B: MTBM_Case1

Equivalent Stress
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1





Bharath Anantha Srinivas- Partner
TEL (Mob) + 91 998 076 9746 / +91 861 821 9808
Email: bharath@technovos.co.in

CONTACT US FOR
MORE INFORMATION

