

SIXD

SixD ENGINEERING
SOLUTIONS PVT LTD

SIMPLIFYING DIMENSIONS

REVERSE ENGINEERING

Critical Parts Design Development

**SPARES, COMPONENTS & EQUIPMENT 2D MANUFACTURING
DRAWING DEVELOPMENT**

SIXD TIMELINE

ESTABLISHED SixD with
DEFENCE, HEAVY ENGINEERING
AEROSPACE & AUTOMOTIVE

2006

ADDED
STEEL INDUSTRY

2011

ADDED
CHEMICAL, OIL & GAS

2015

2016

DEVELOPED
DPM PROCESS

ADDED
CEMENT

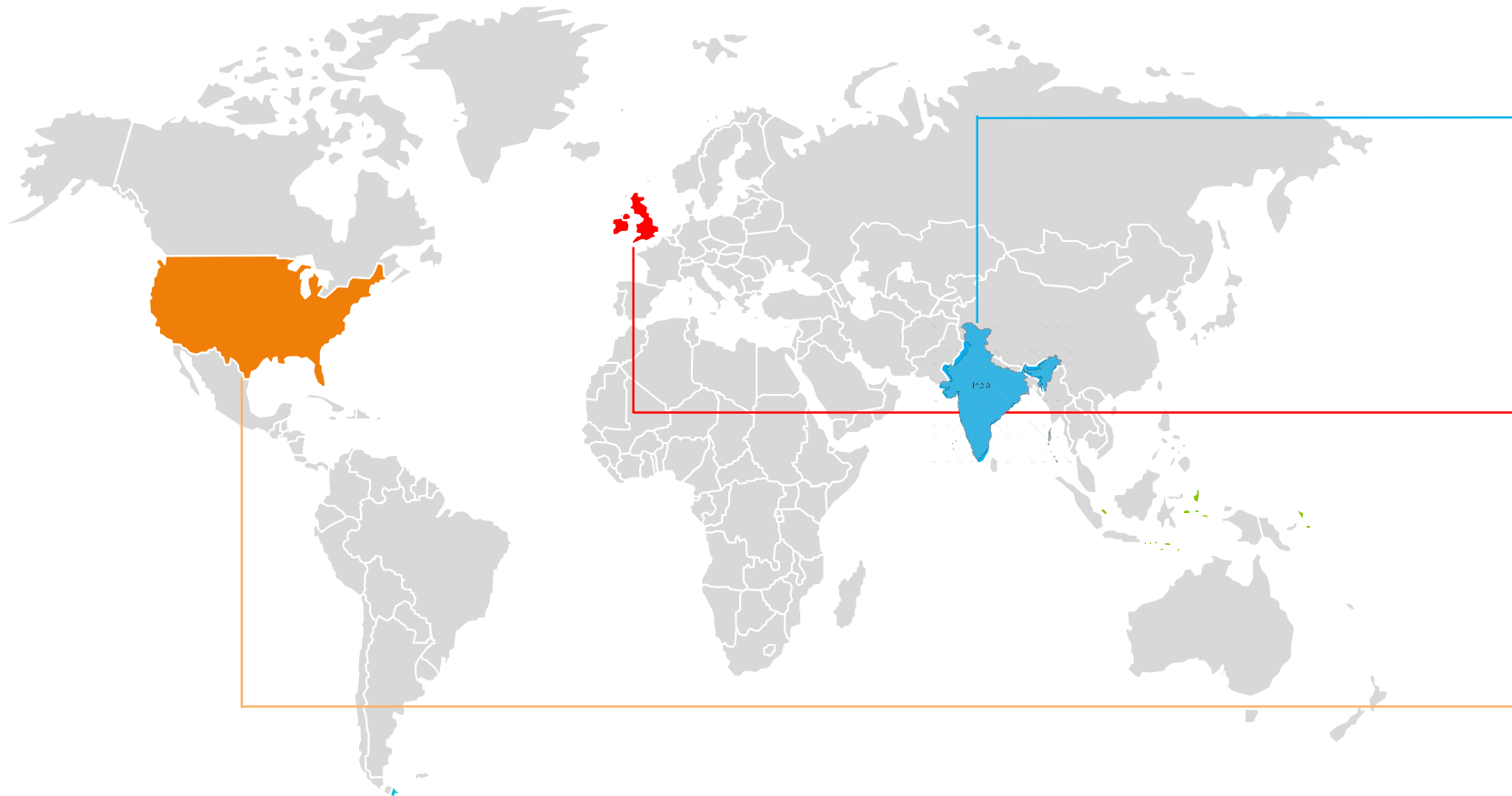
2020

SIXD EXPANSION IN
INTERNATIONAL MARKET
WITH OPENING
COMPANIES AT US & UK

WITH
DIMESNIION CONTROL &
REVERSE ENGINEERING
SERVICES

STARTED
AS-BUILT ENGINEERING

SIXD OFFICES



01

SIXD ENGINEERING
SOLUTIONS PVT. LTD.

02

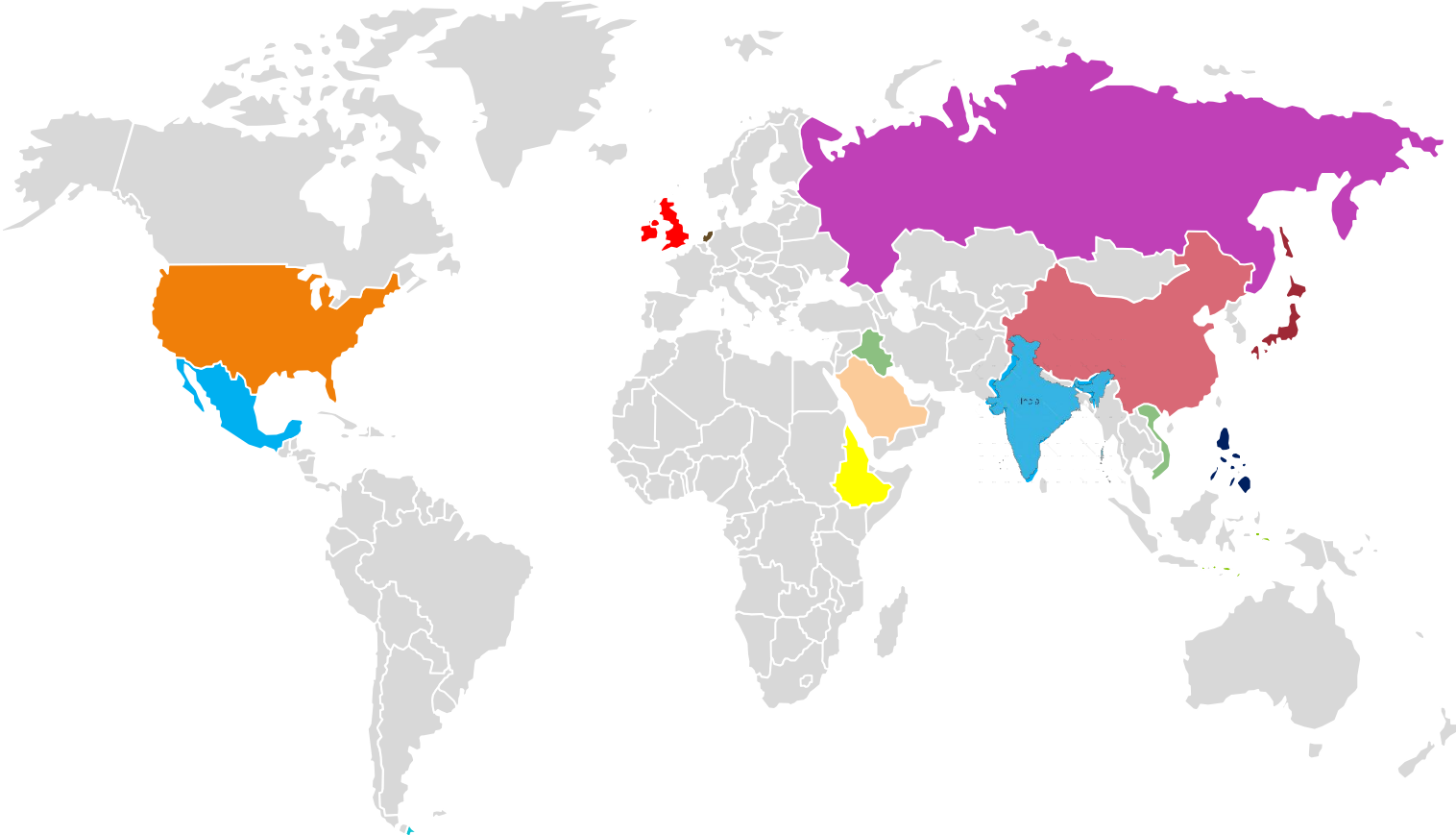
SIXD ENGINEERING
SOLUTIONS LTD.

03

SIXD LLC.

SIXD FOOTPRINTS

We have successfully completed projects all over the globe...



International Projects



Countries

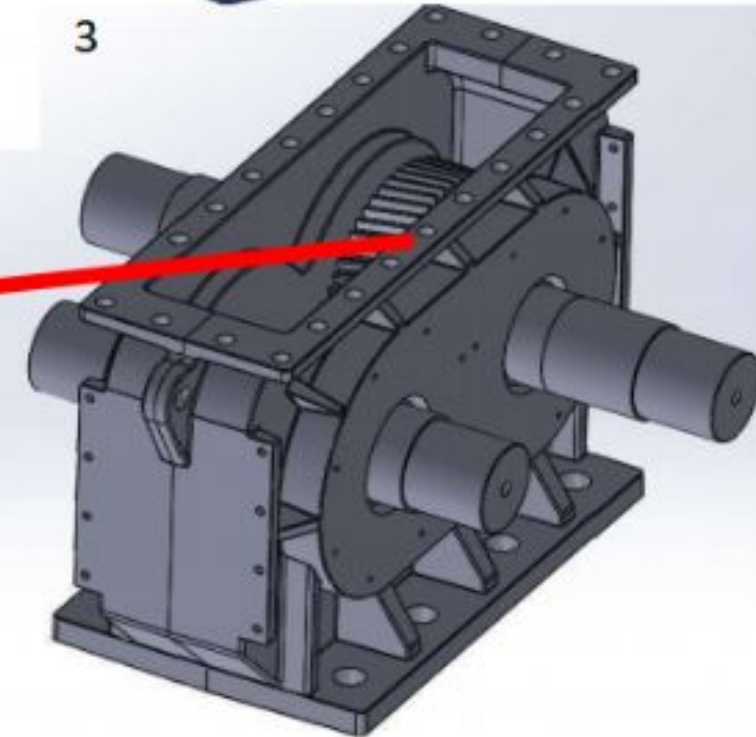
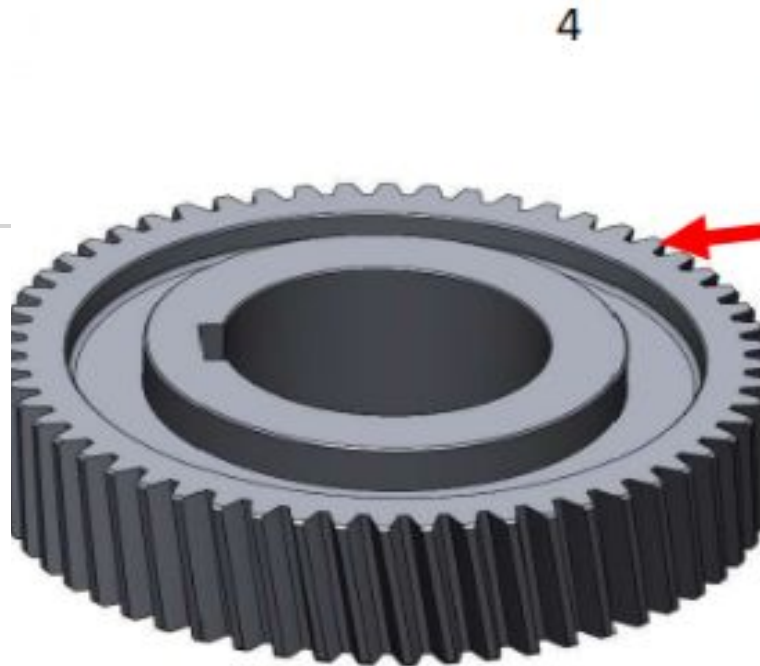
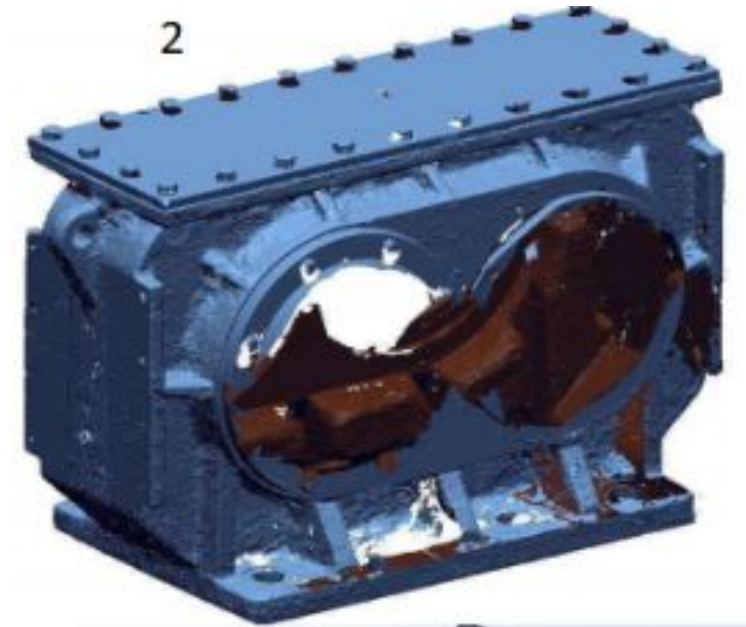
REVERSE ENGINEERING

Critical / Obsolete / Worn-out-
SPARES, COMPONENTS &
EQUIPMENT

DESIGN & 2D
MANUFACTURING DRAWING
DEVELOPMENT



**REVERSE
ENGINEERING
OUR PROCESS
WORK-FLOW**

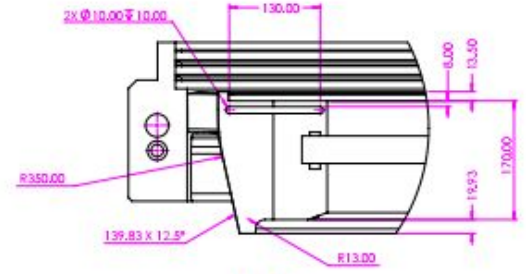
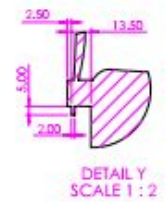
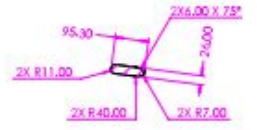
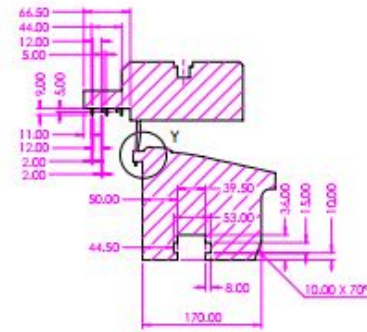
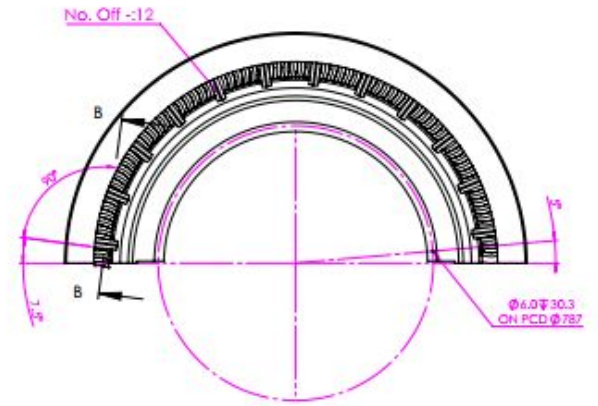
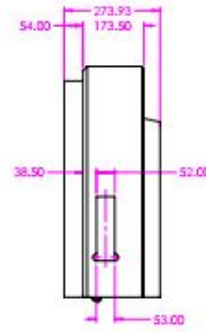
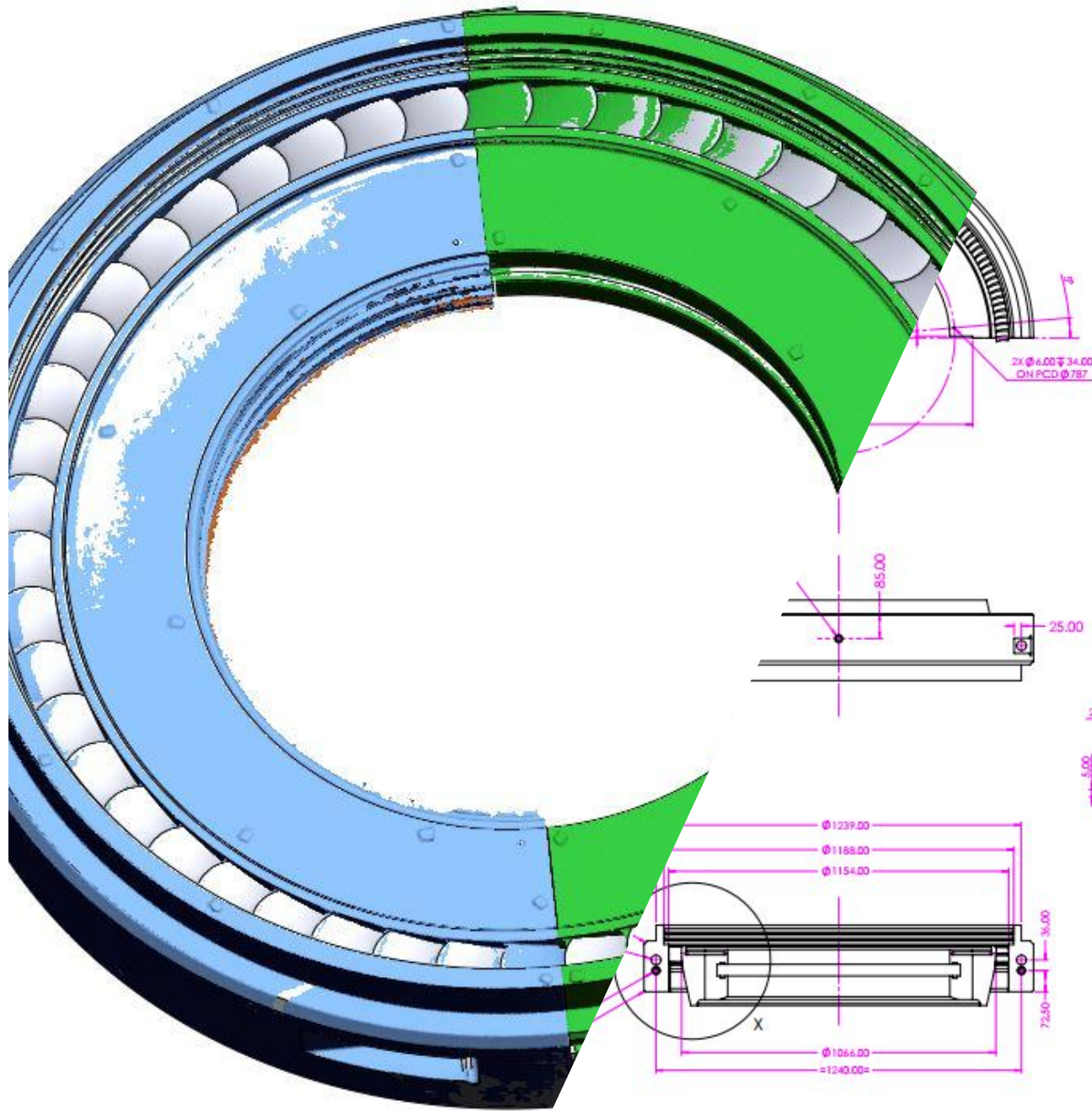




**3D SCANNING
IN PROGRESS**

BLUE LIGHT SCANNER FOR PRECISE 3D SCANNING

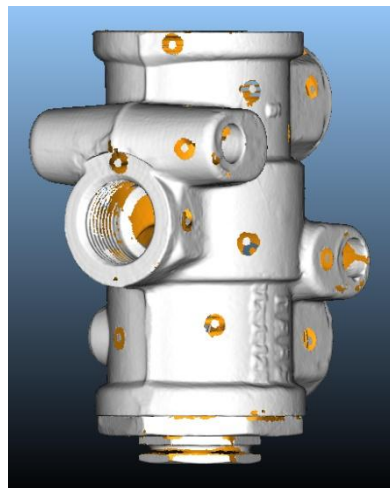




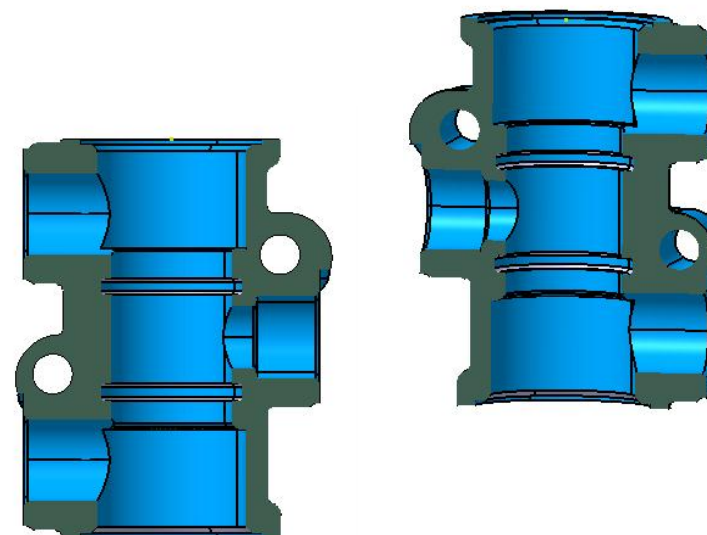
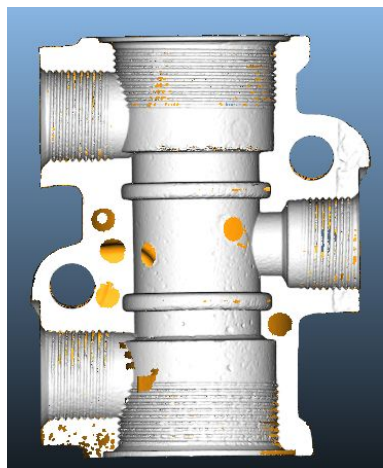
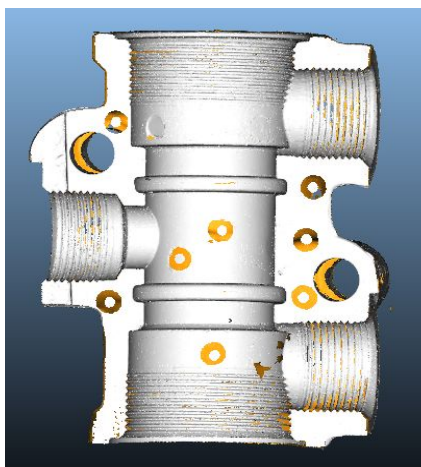
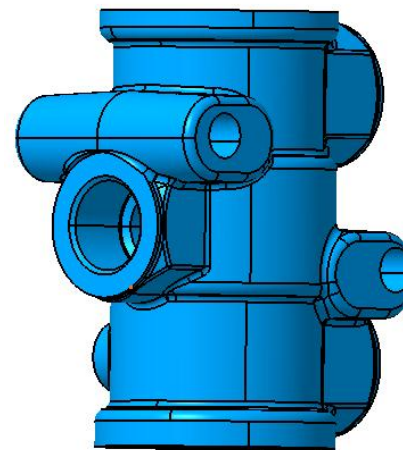
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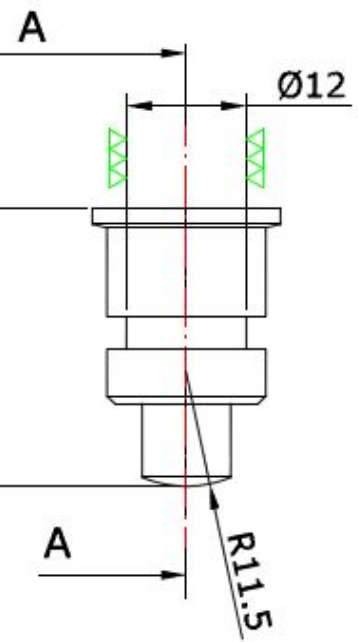
SIXD		CUSTOMER NAME			
MATERIAL	NUMBER	QUANTITY	DRAWING NO.	FINISH	
DATE	28-07-2019	PART NAME	HP_2_DIAPHRAM_TOP&BOTTOM	ENGINEERING/DESIGN/SECTION	
DRAWN BY	DIVAKAR L. AVERMA	MATERIAL NAME		ARE IN MILLIMETERS	
CHECKED BY		PART TAG		CUSTOMER	
APPROVED BY				TOSHIBA	
SIXD ENGINEERING PRIVATE LIMITED		HPD_2_TOP			
SIXD ENGINEERING PRIVATE LIMITED		SHEET NO. A2		REVISION AND SHEET GROUP INDEX	

SCAN DATA

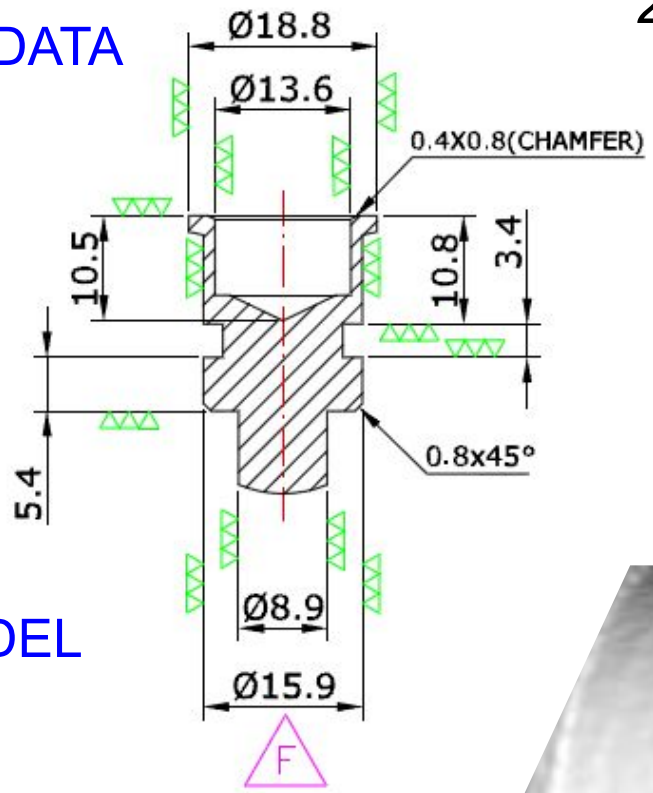


CAD MODEL

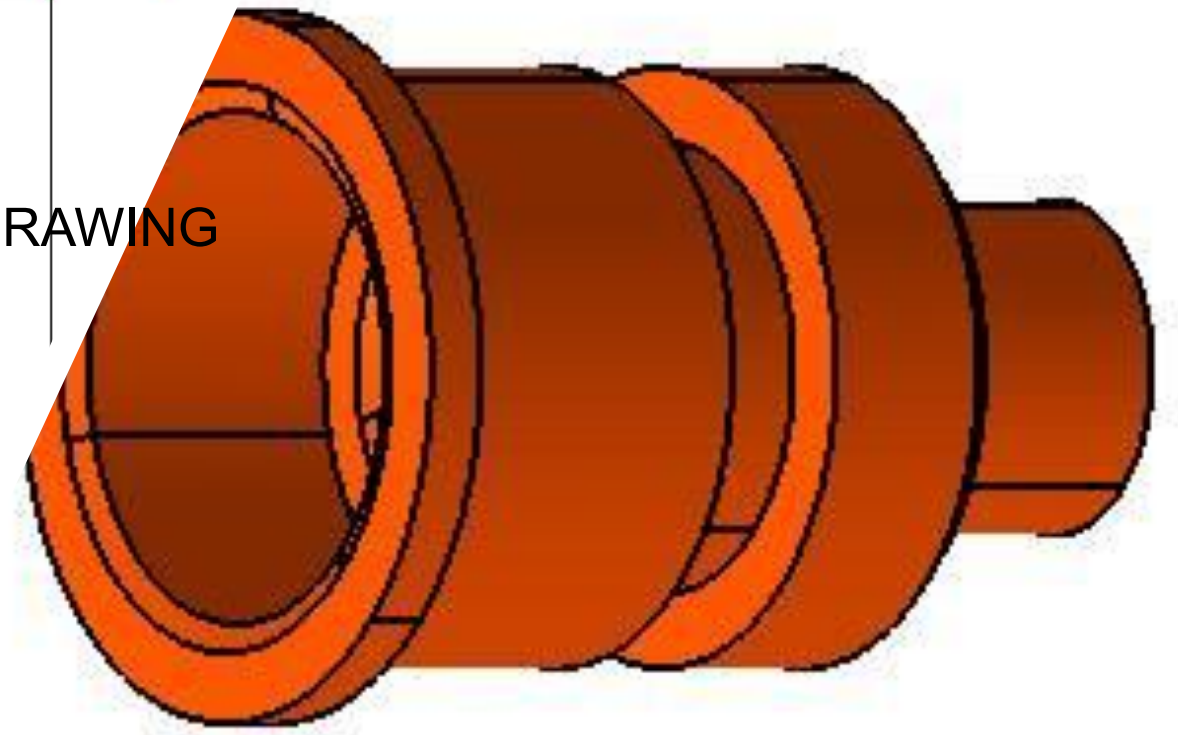




SCAN DATA



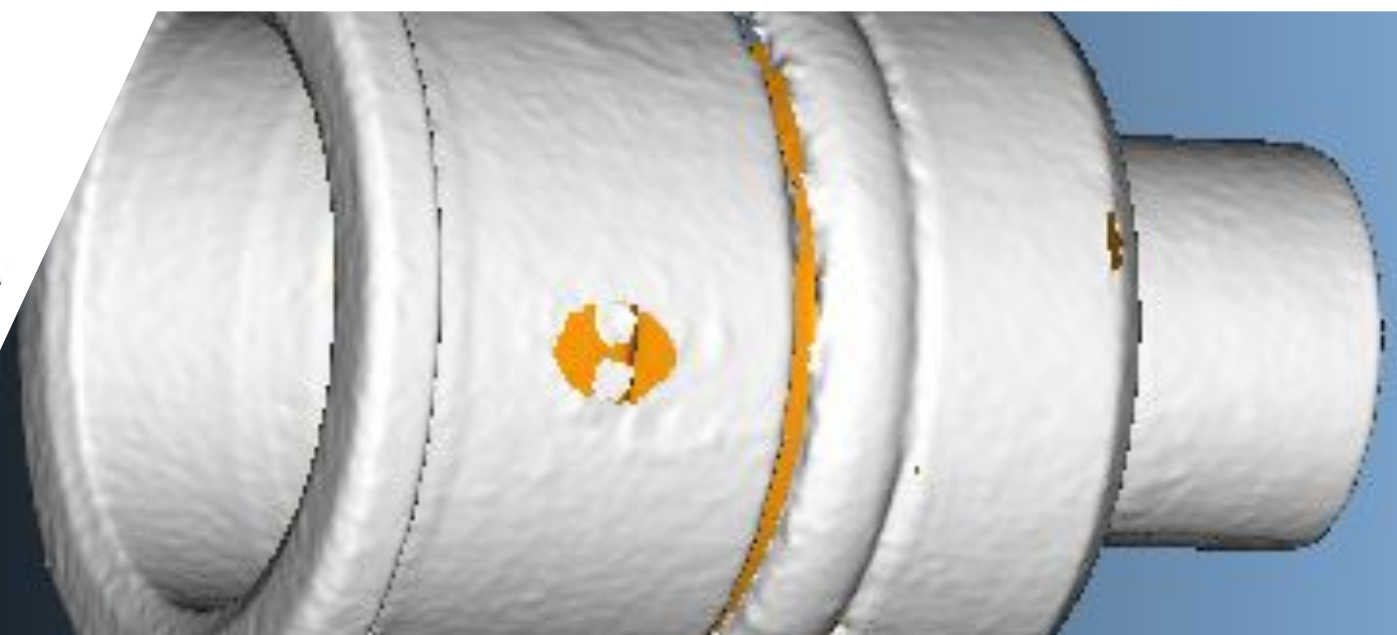
2D DRAWING



3D MODEL



SECTION VIEW A-A

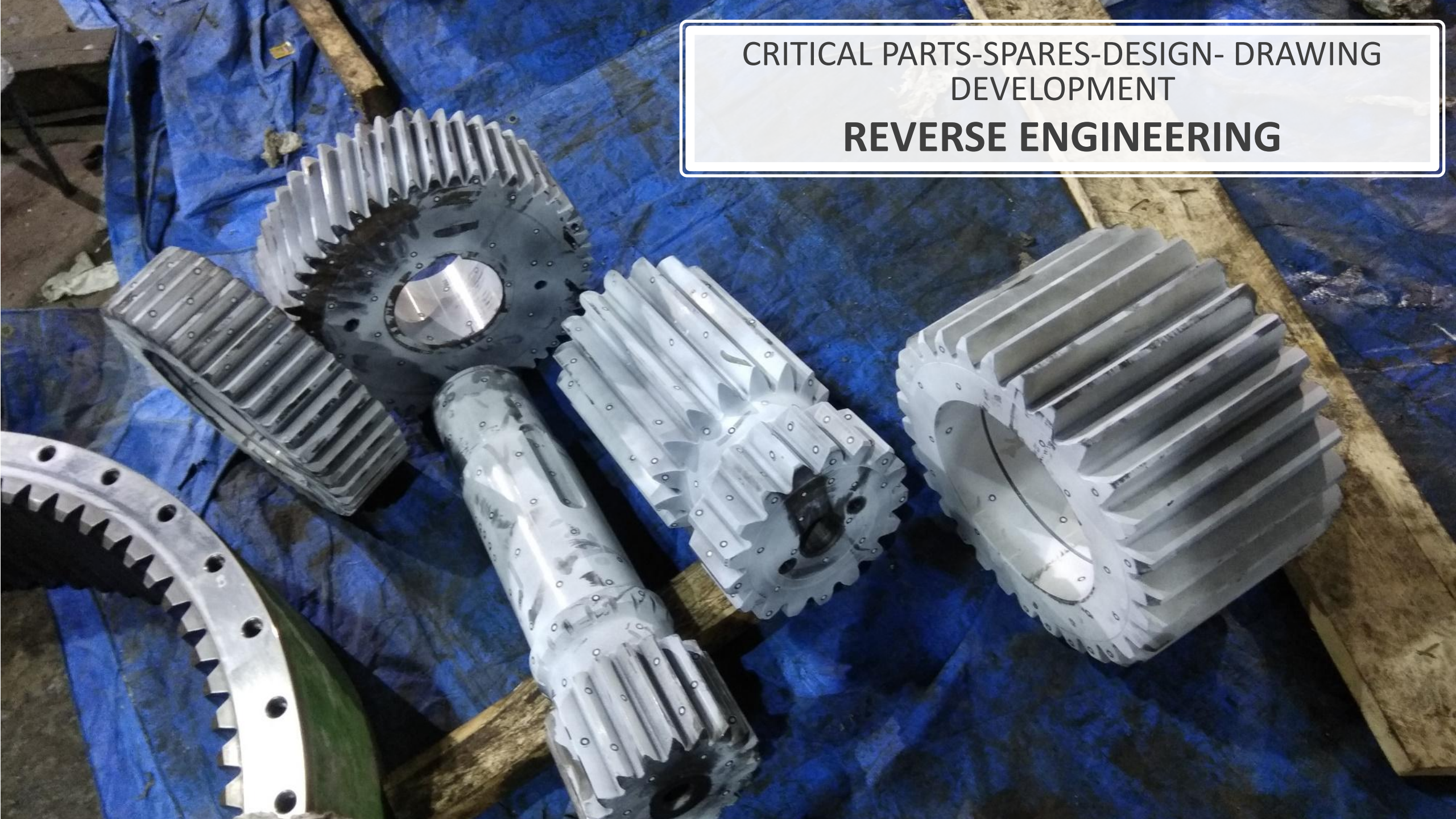


CONTROL CHARACTERISTICS		GENERAL TOLERANCE ON	
MANDATORY MEASUREMENTS	FIT / FUNCTION SPC	SAFETY CHARACTERISTICS	1 PLACE DECIMALS ± 0.25
			2 PLACE DECIMALS ± 0.1

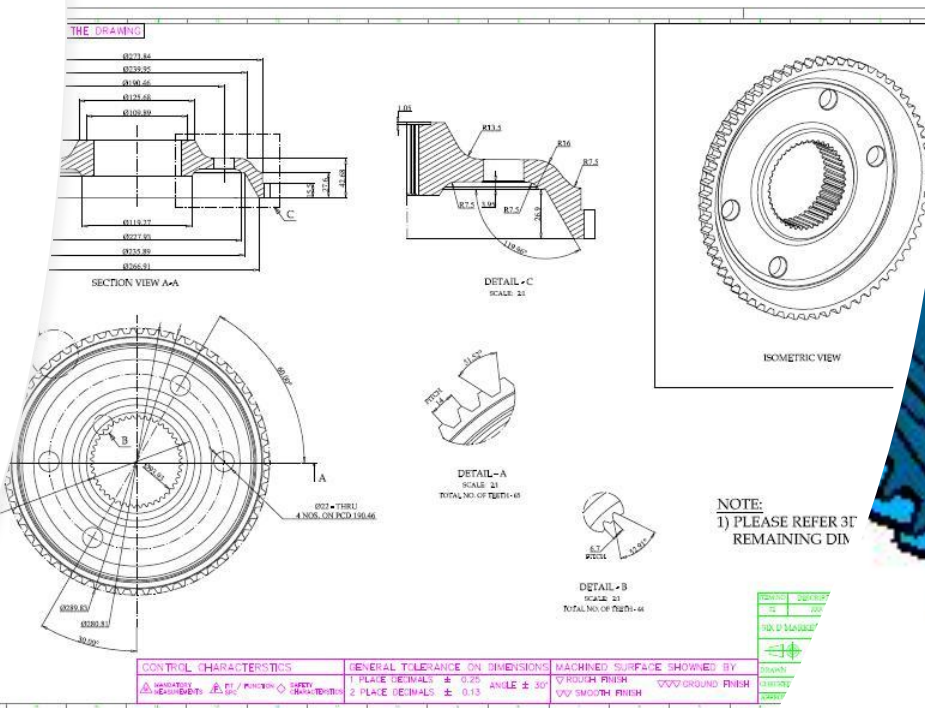
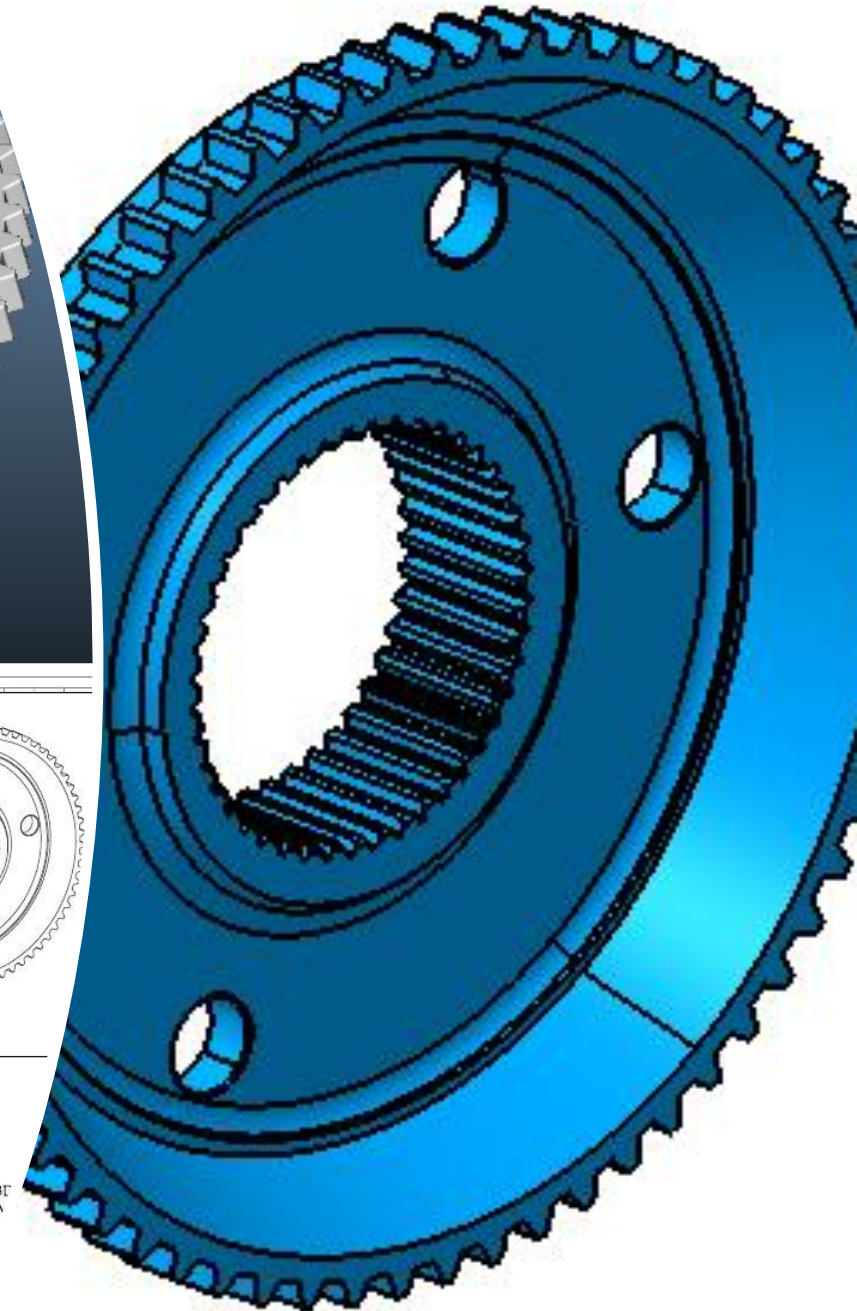
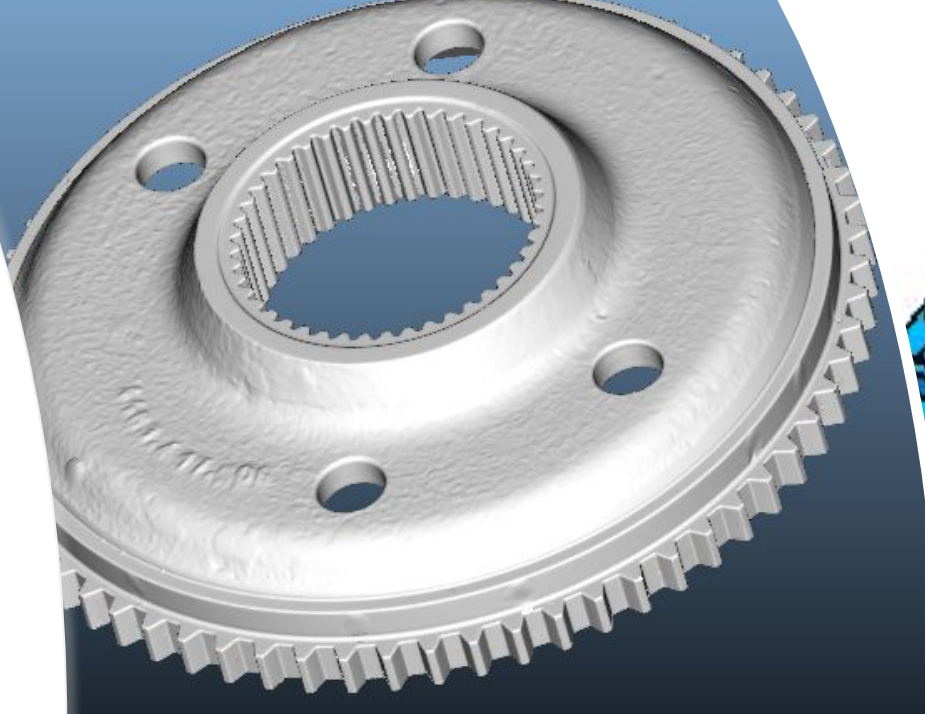
3D SCANNING AT SITE



CRITICAL PARTS-SPARES-DESIGN- DRAWING
DEVELOPMENT
REVERSE ENGINEERING



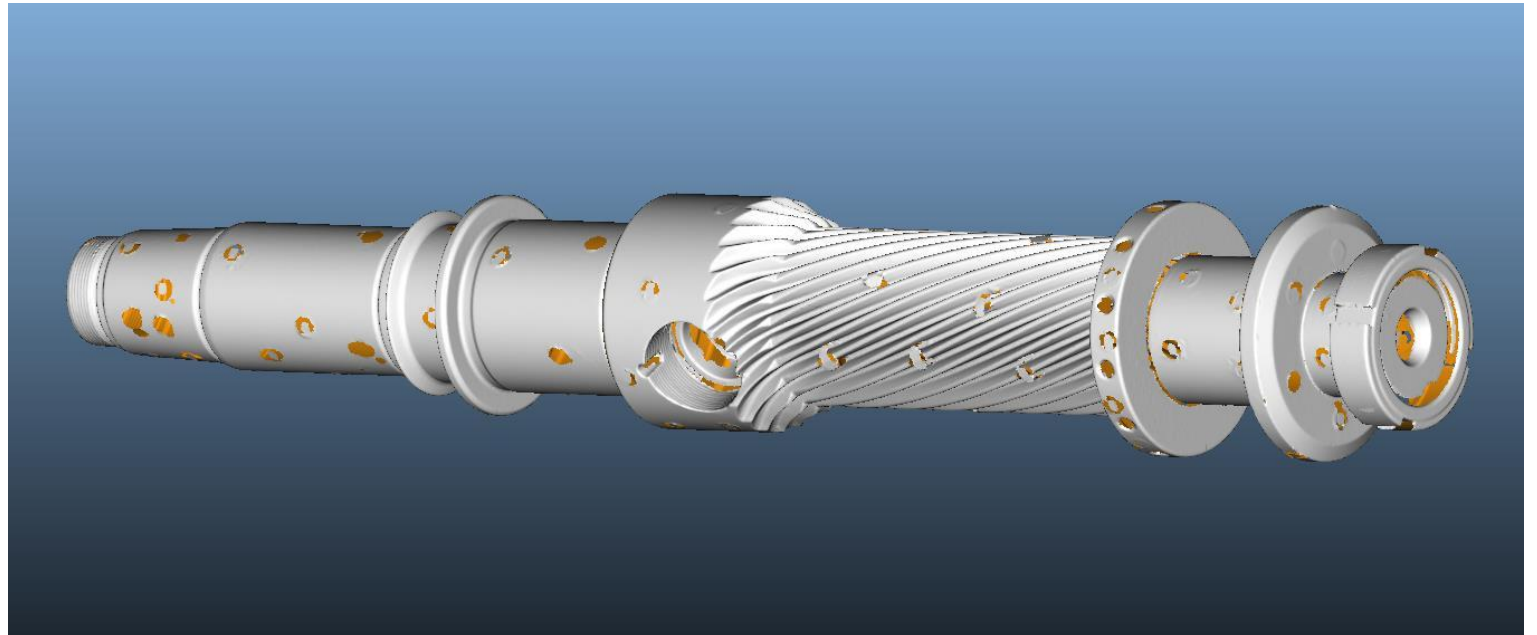
GEARS & SHAFTS
WITHIN ACCURACY
0.01mm
WORKFLOW RE
PROCESS





**CRITICAL PARTS-SPARES-DESIGN- DRAWING
DEVELOPMENT**

REVERSE ENGINEERING



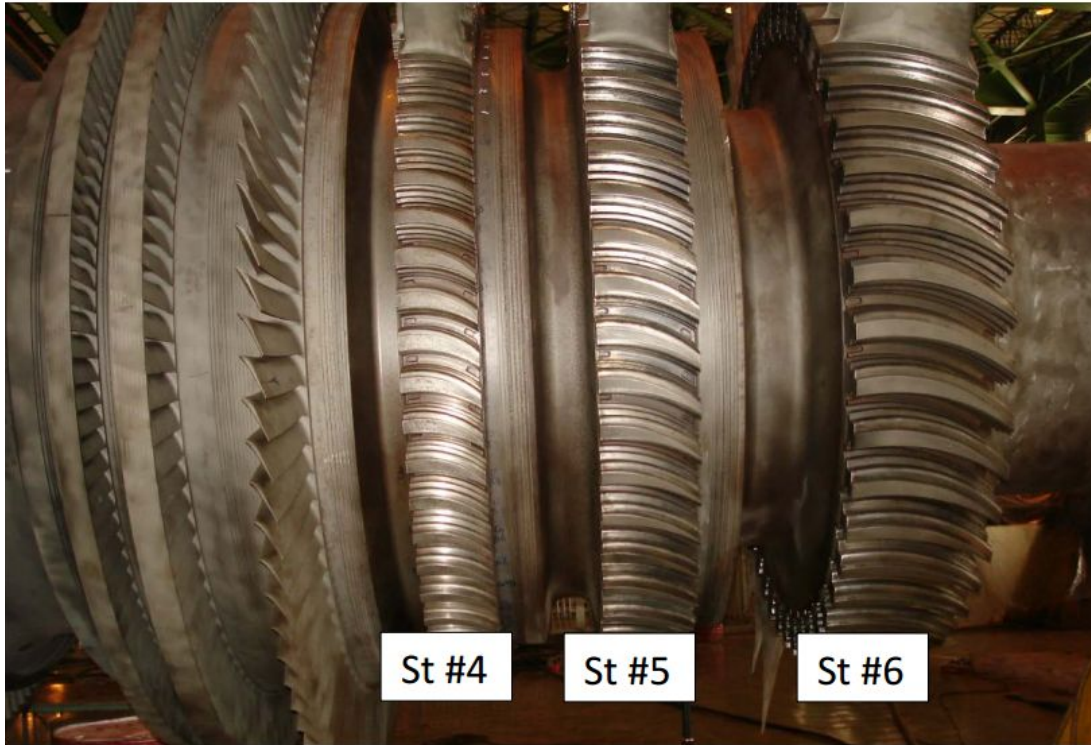
Reverse Engineering GEARS & SHAFTS



BLADES REVERSE ENGINEERING



2018/2/25 14:15



LP Rotor-St#4,#5,#6 Grooves

(Approx. Width x Depth St#4: 140x70mm, St#5: 180x80mm, St#6: 295x95mm)



LP Rotor: Fir Tree Grooves (Axial entry)

Reverse Engineering TURBINE & HEAVY ENGG



Reverse Engineering ROTOR BLADES

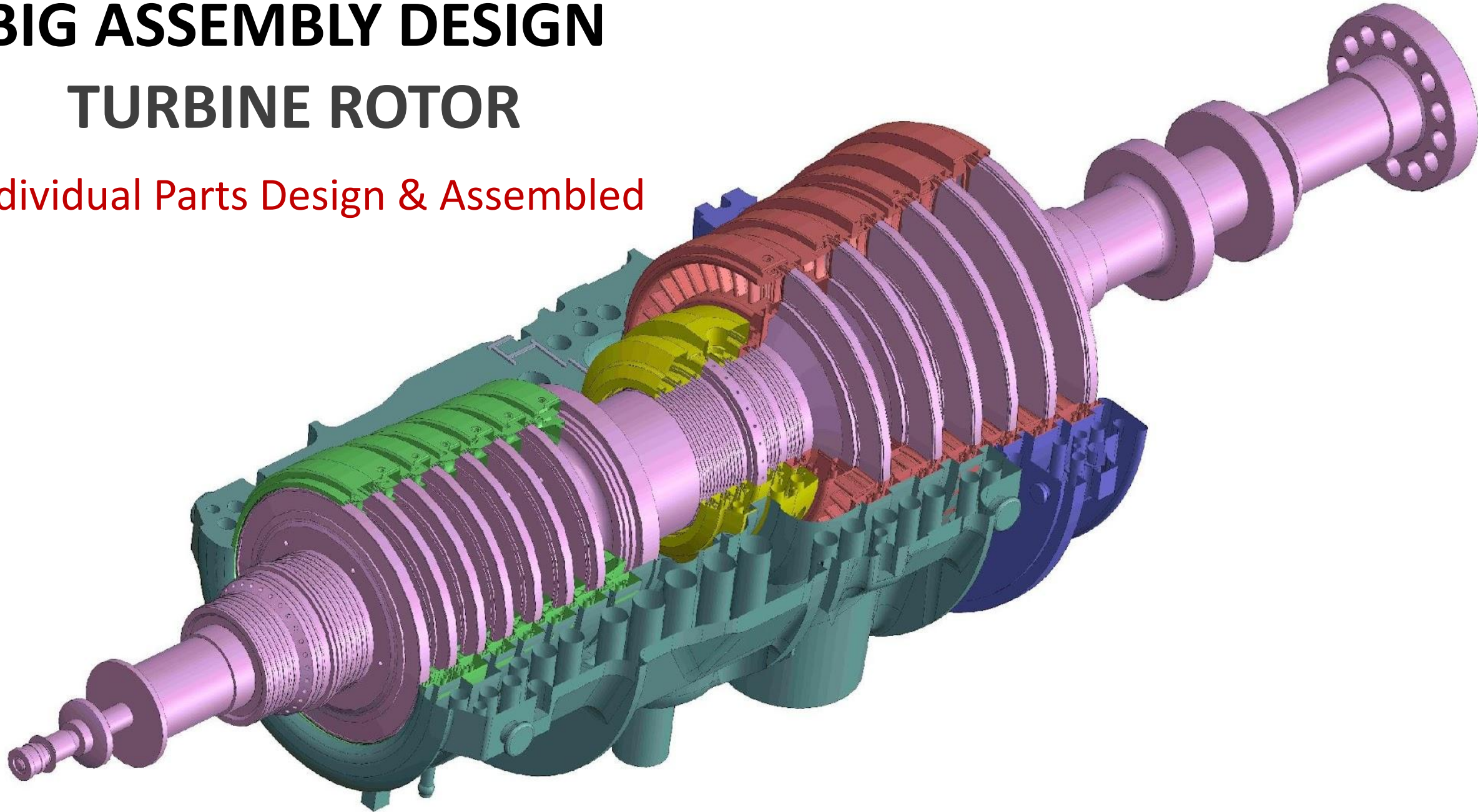


Blade size St#4: 140W x 450L, St#5: 180W x 730L

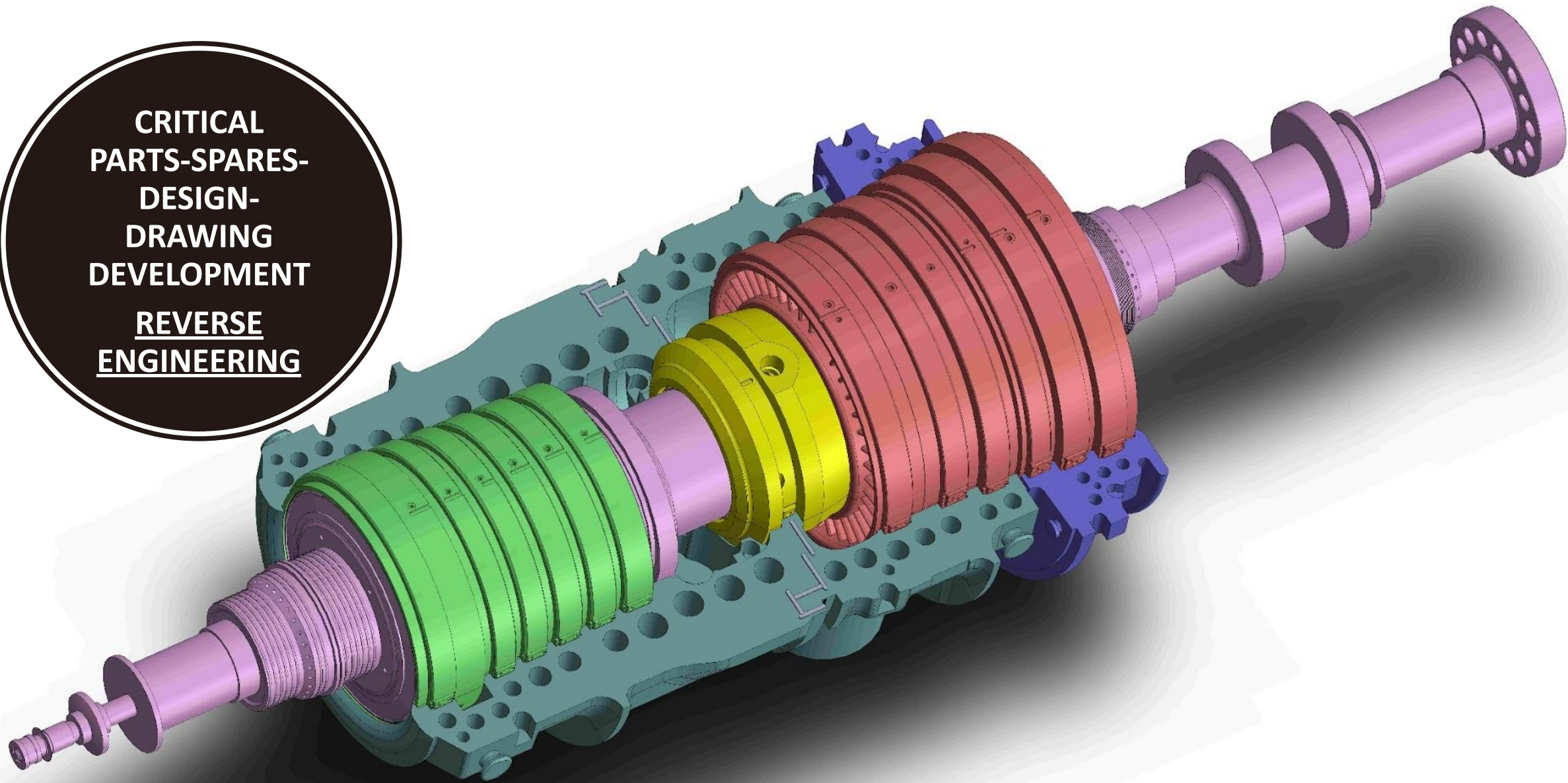
BIG ASSEMBLY DESIGN

TURBINE ROTOR

Individual Parts Design & Assembled



**CRITICAL
PARTS-SPARES-
DESIGN-
DRAWING
DEVELOPMENT
REVERSE
ENGINEERING**





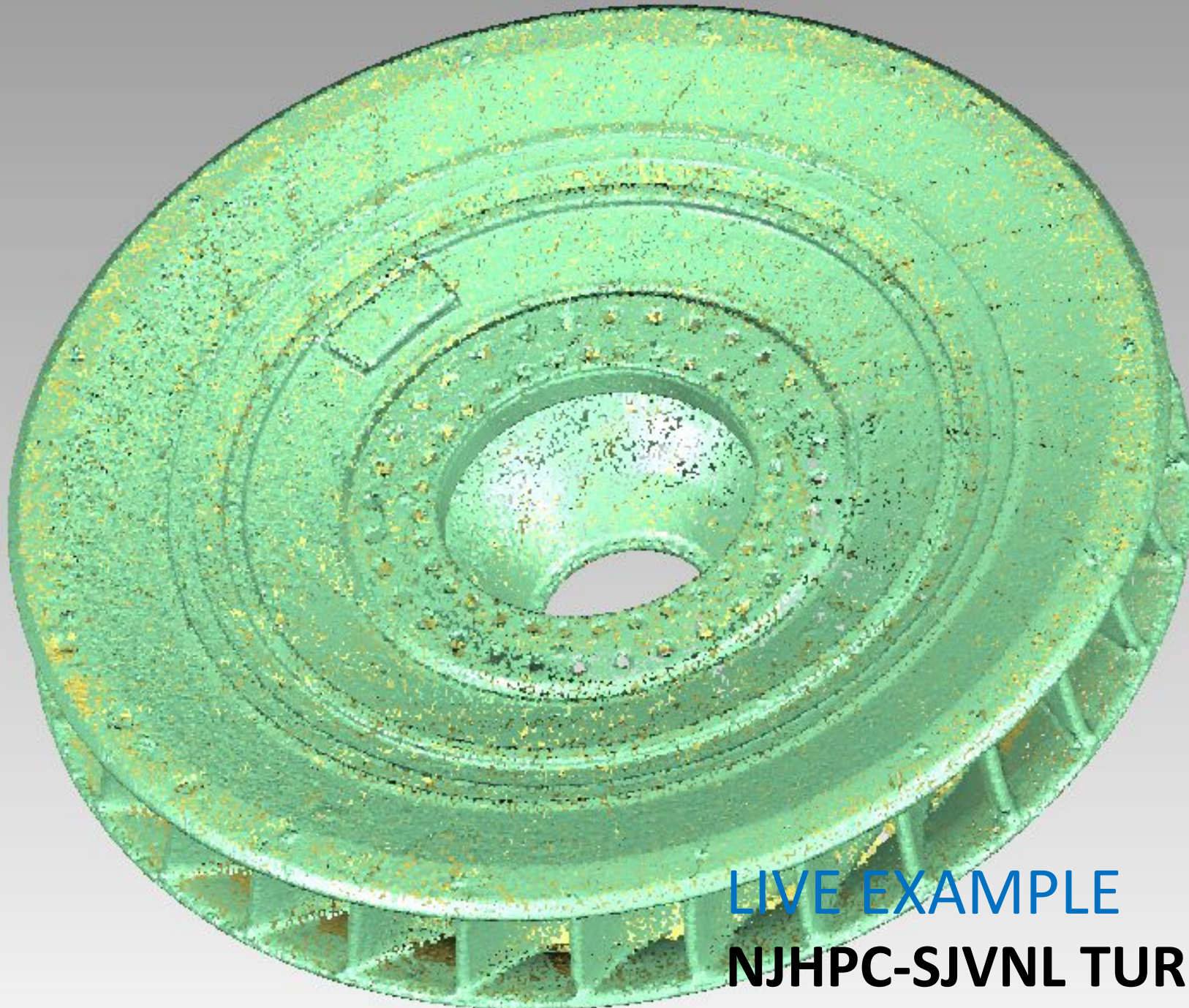
HANDHELD PRECISE 3D LASER SCANNER



**INDUSTRIAL PART
DESIGNS**



LIVE EXAMPLE-HYDRO FRANCIS RUNNER 3D SCANNING



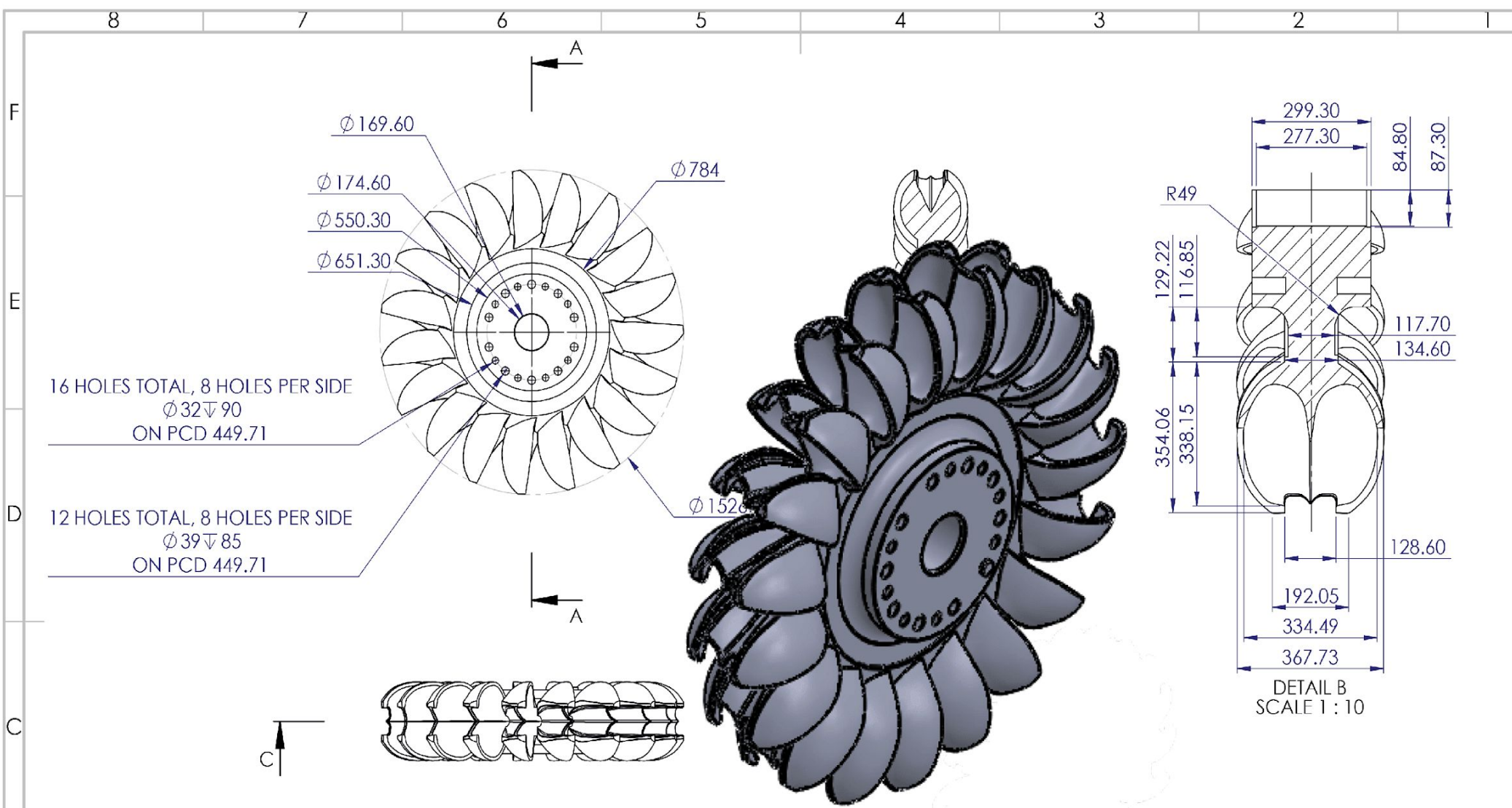
LIVE EXAMPLE

NJHPC-SJVNL TURBINE RUNNER -RE



PELTON RUNNER

Case Study VOITH



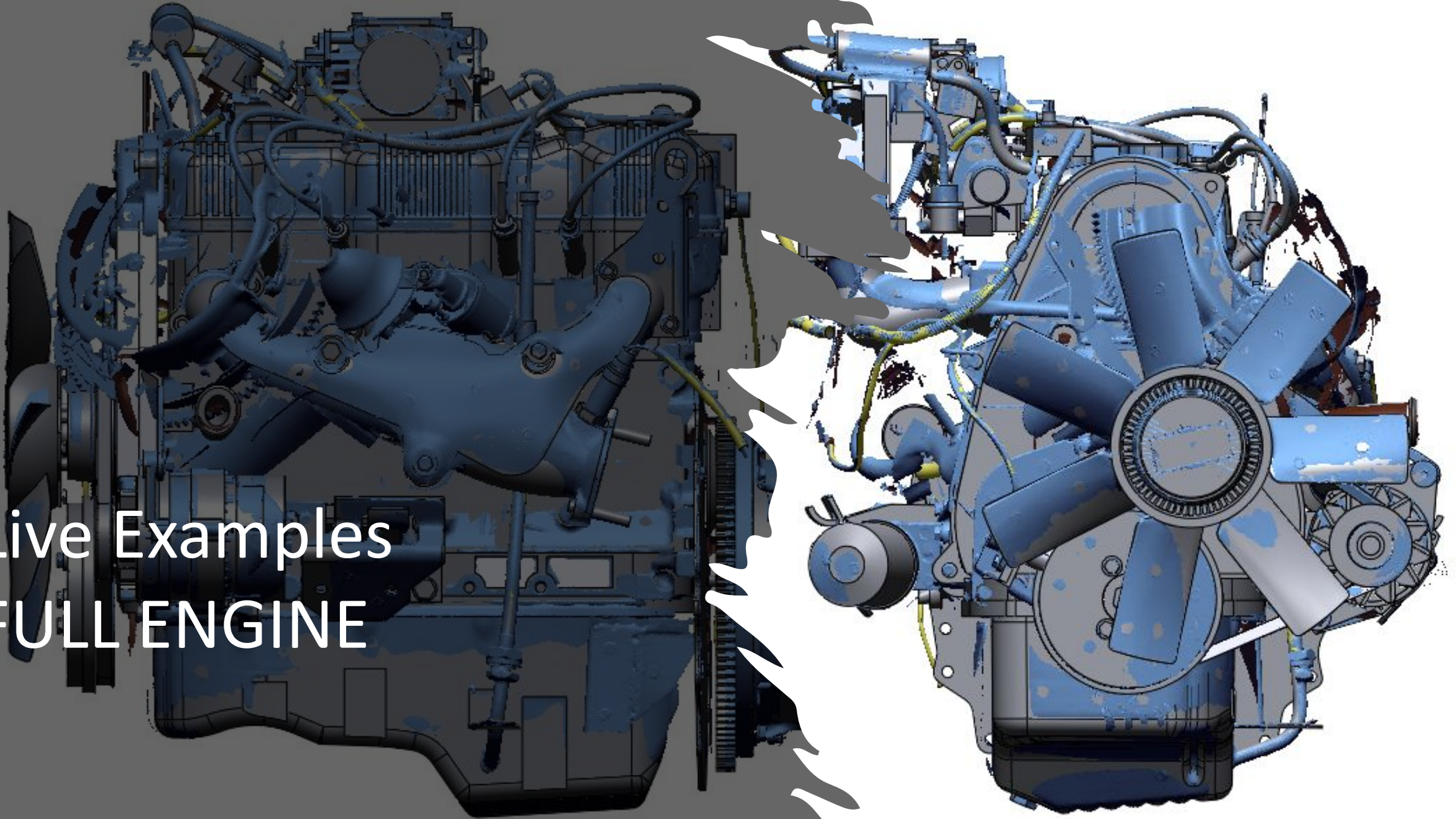
CAD FILES-AS-BUILT DOCUMENTIONS-2D DRAWINGS
SPARE DESIGN & DEVELOPMENT

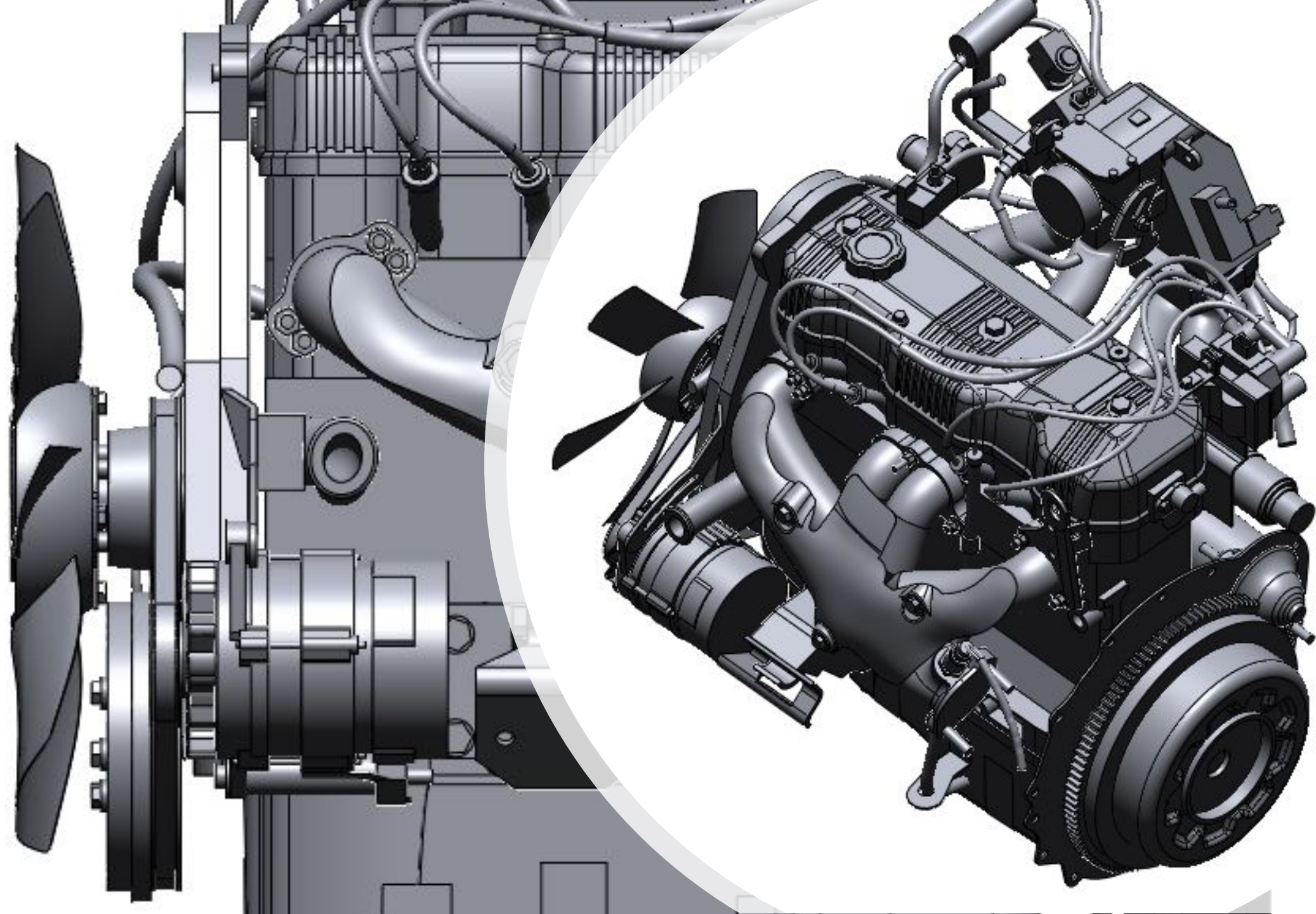


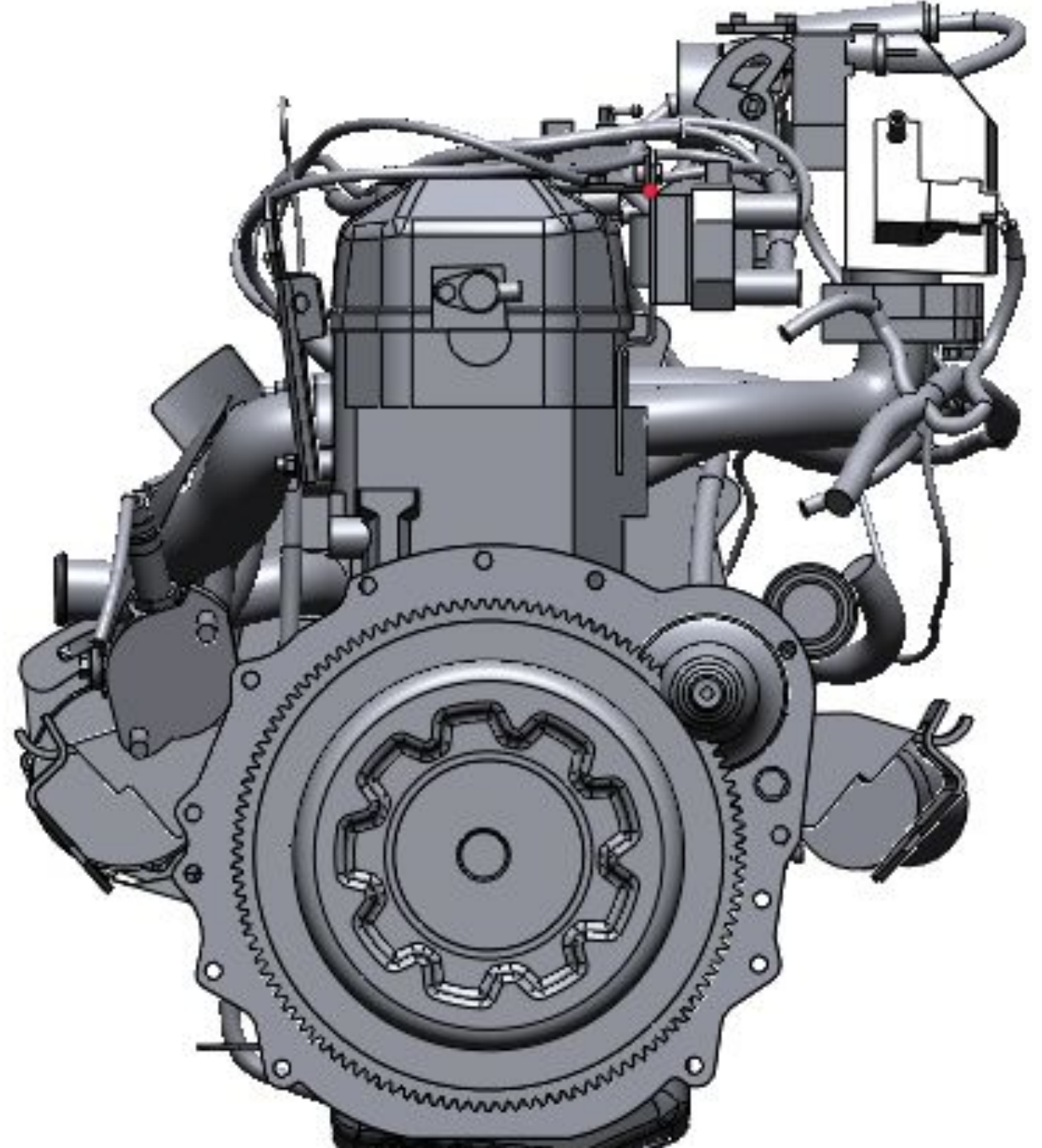
RUNNER INSPECTIONS



Live Examples
FULL ENGINE

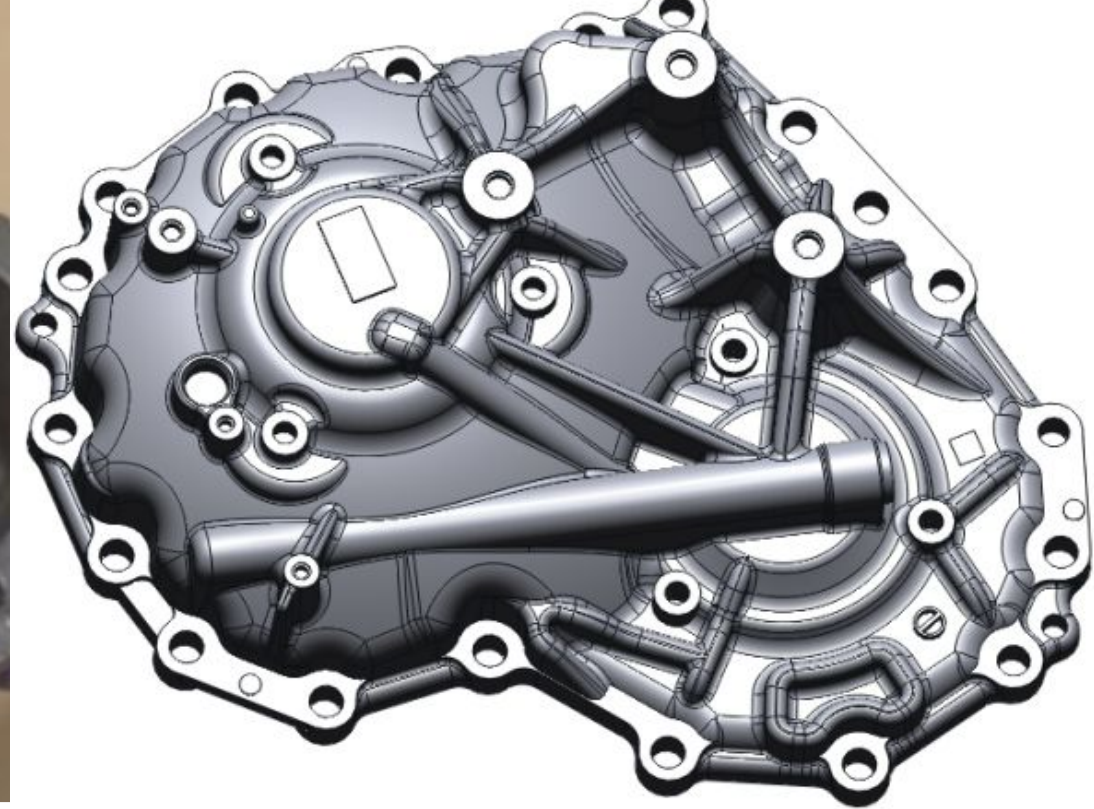






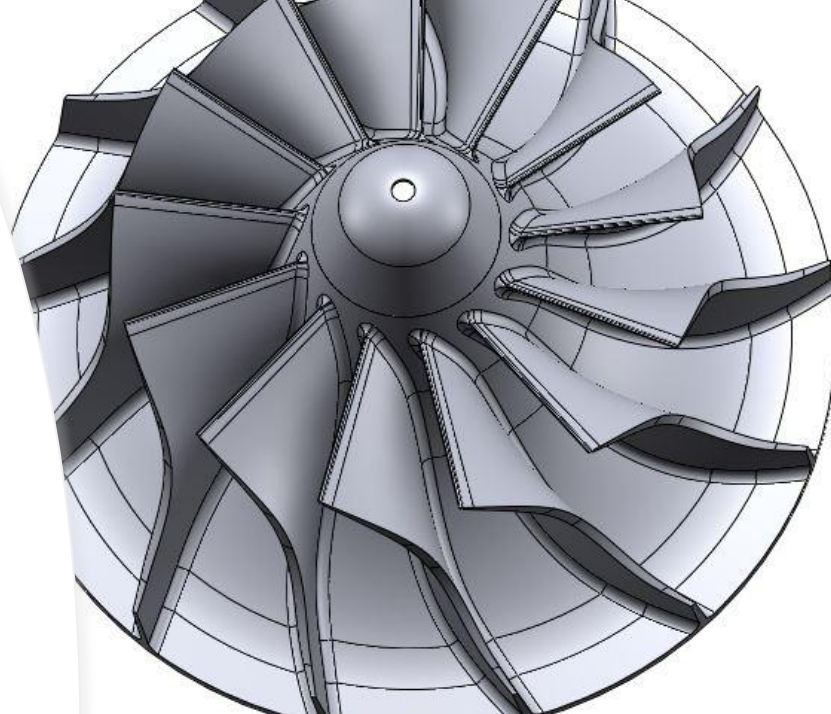


VOLVO SPECIAL ENGINES

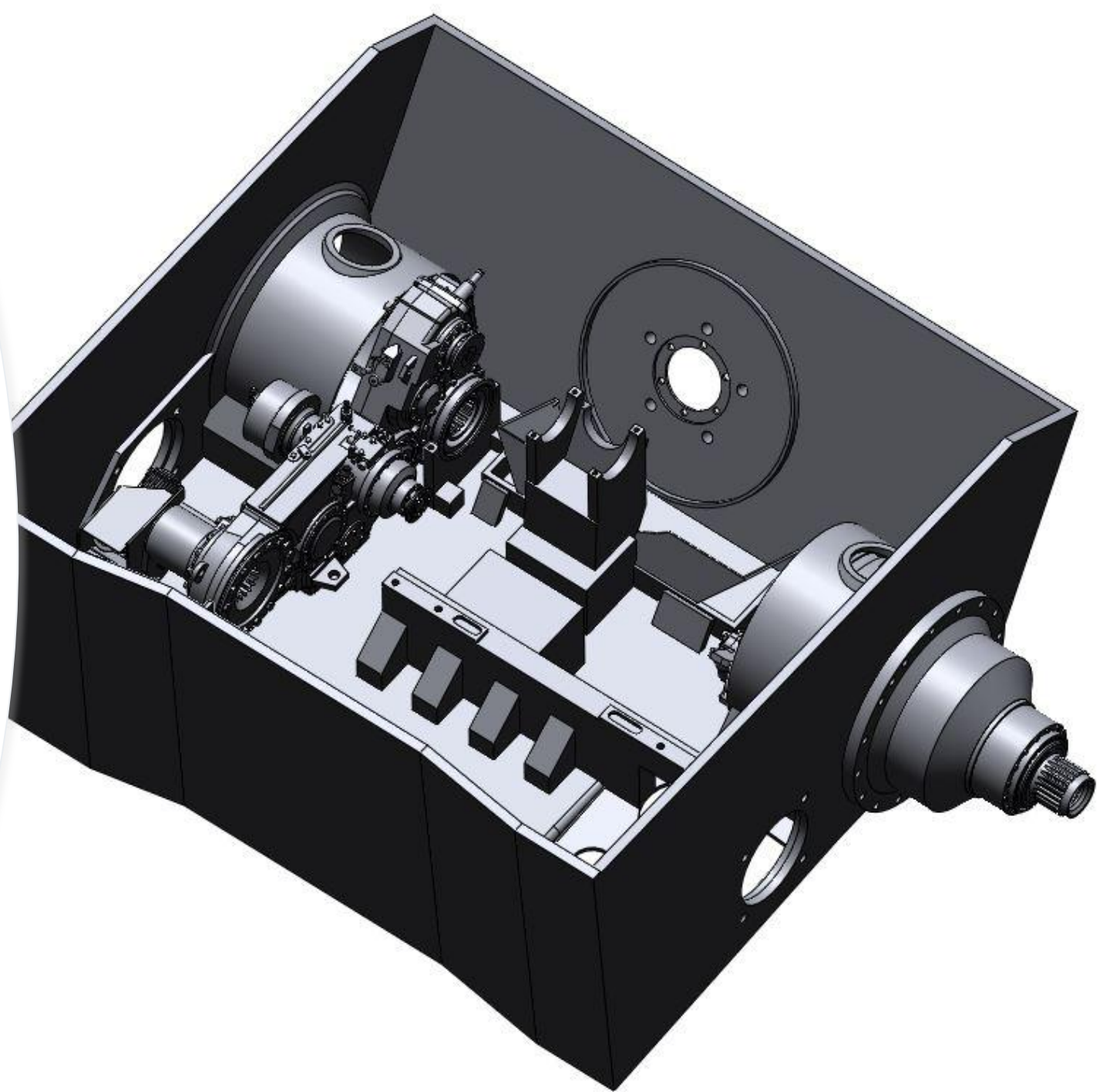


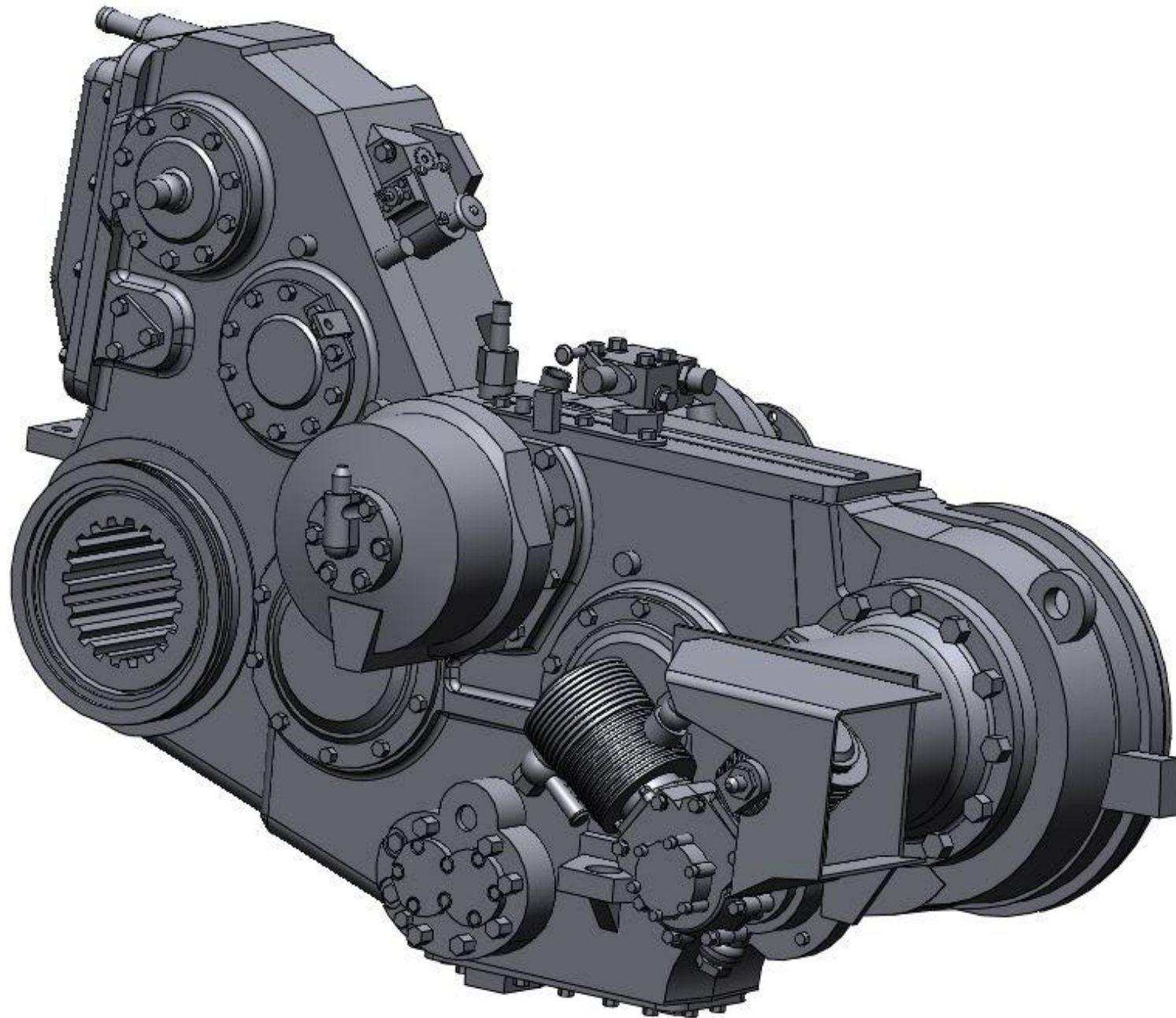
Live Examples
DIE CASTING COMPONENT

SixD Live
Examples
POWERFUL &
FLEXIBLE



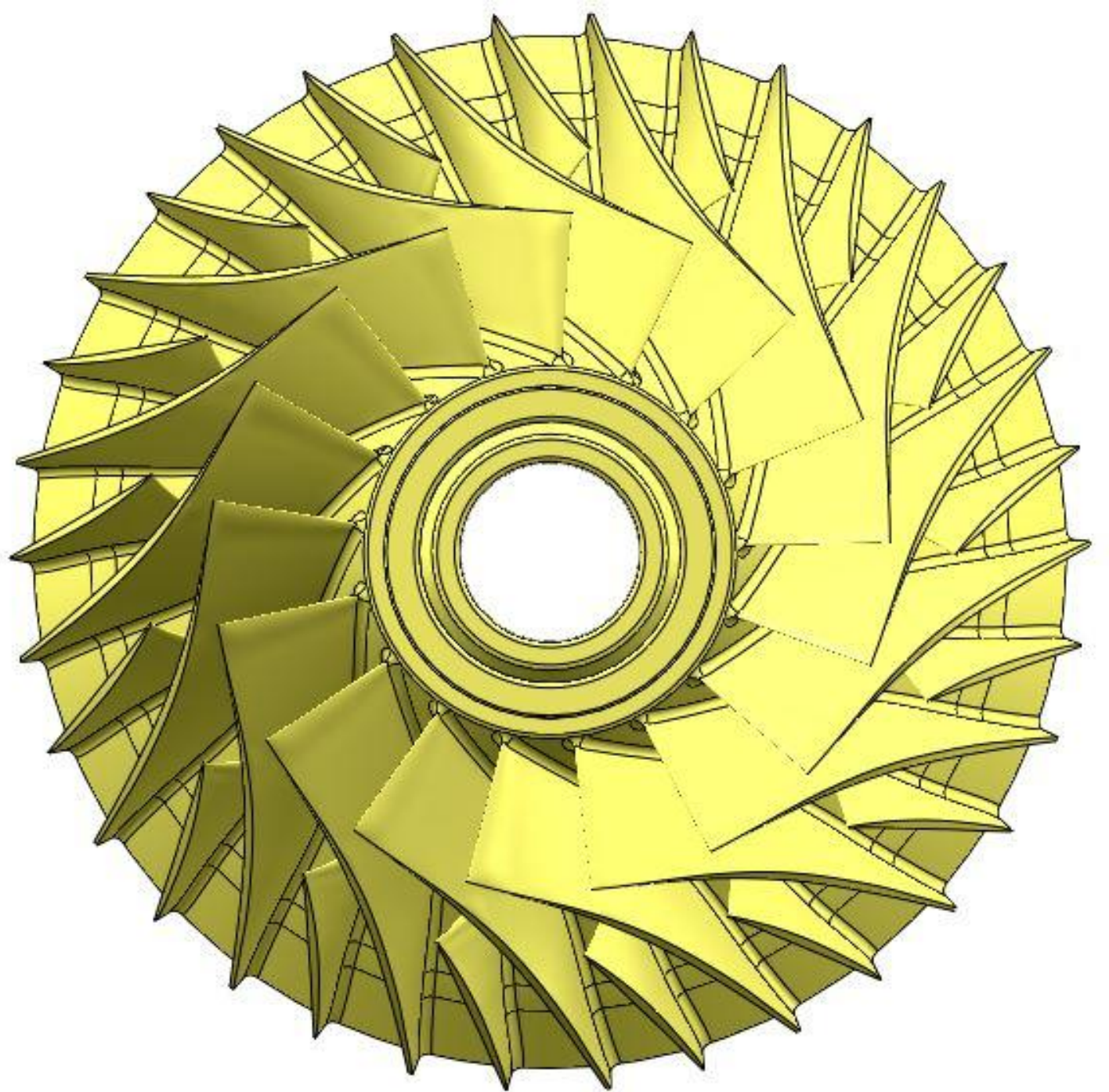
**CRITICAL
DESIGN
TANK ENGINE &
TRANSMISSION
AREA**





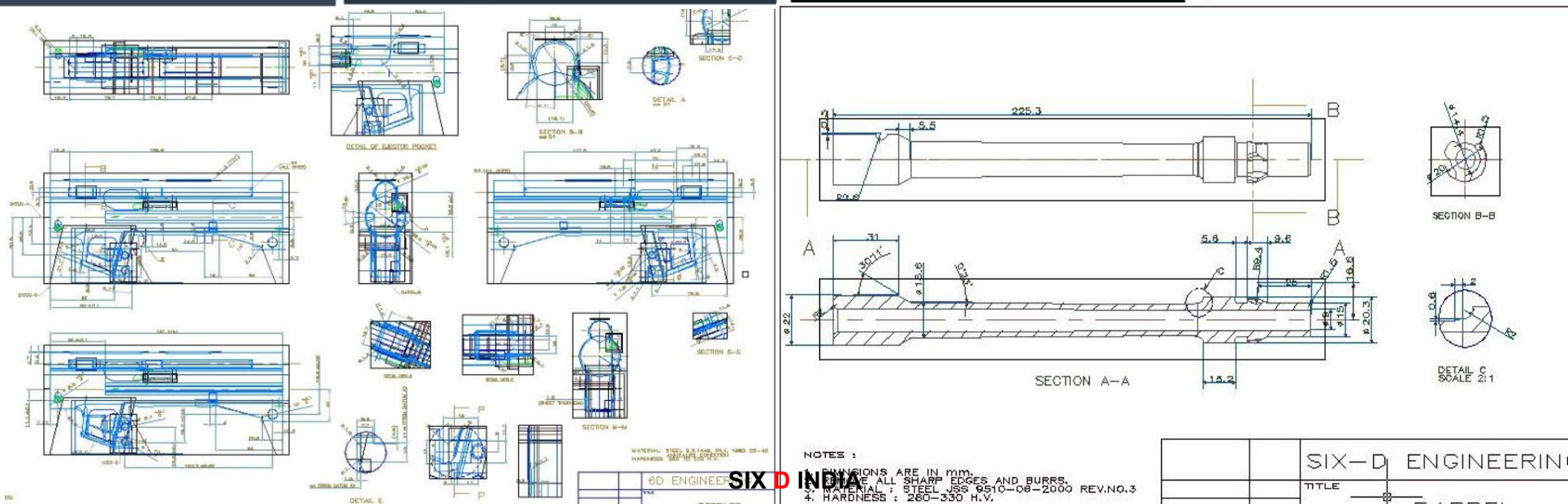
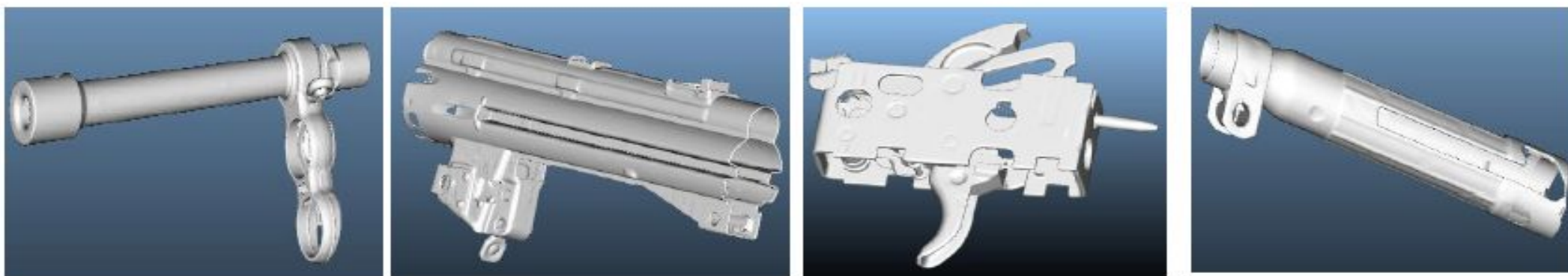
CRITICAL DESIGNS Tank transmission

CRITICAL
DESIGNS
IMPELLER OF
AEROSPACE



Reverse Engineering DEFENCE EQUIPMENT

Point Cloud Data and STL Data

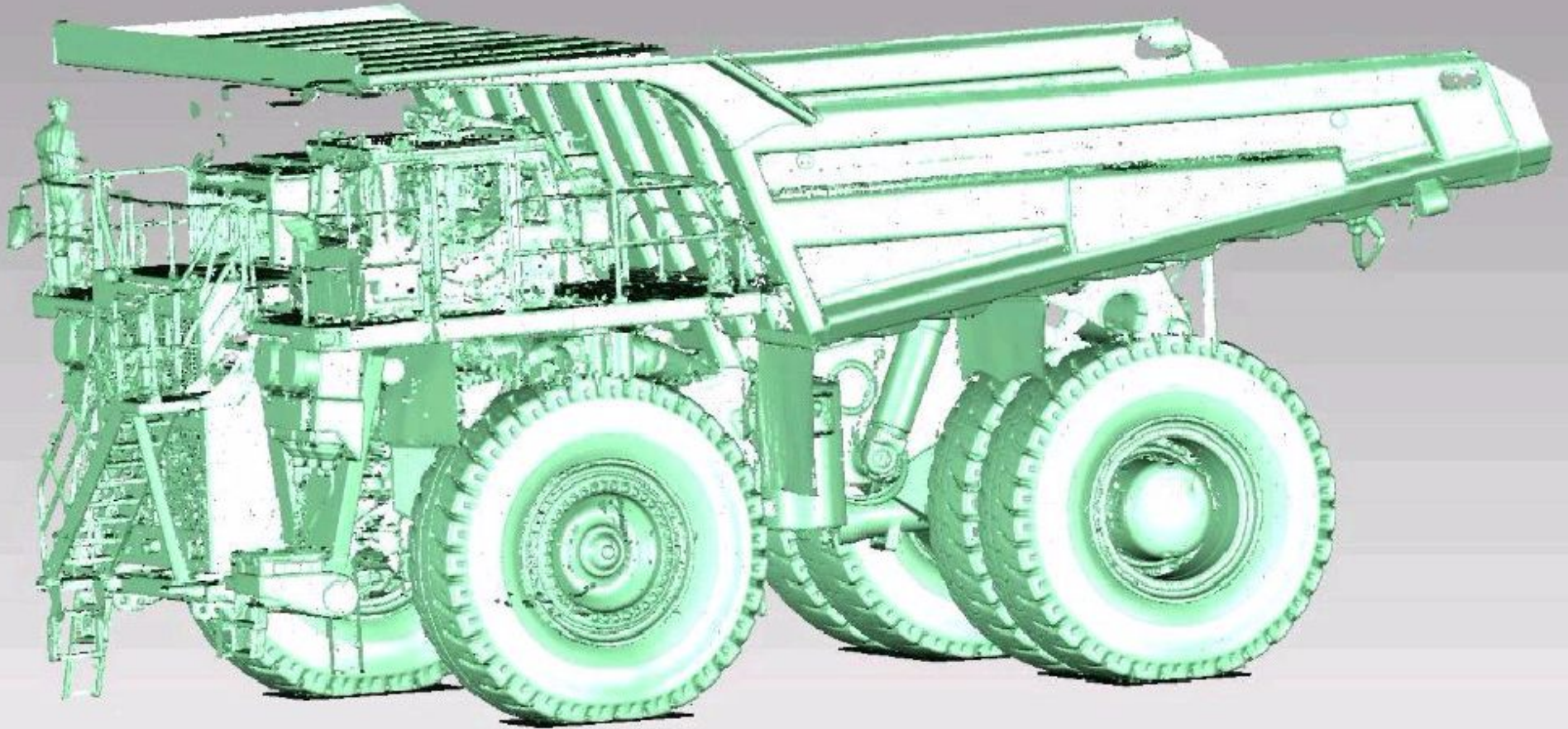




**3D
SCANNING
LARGE
OBJECTS**

3D DESIGN MINE TRUCK

FOR PERFORMANCE ENHANSMENT



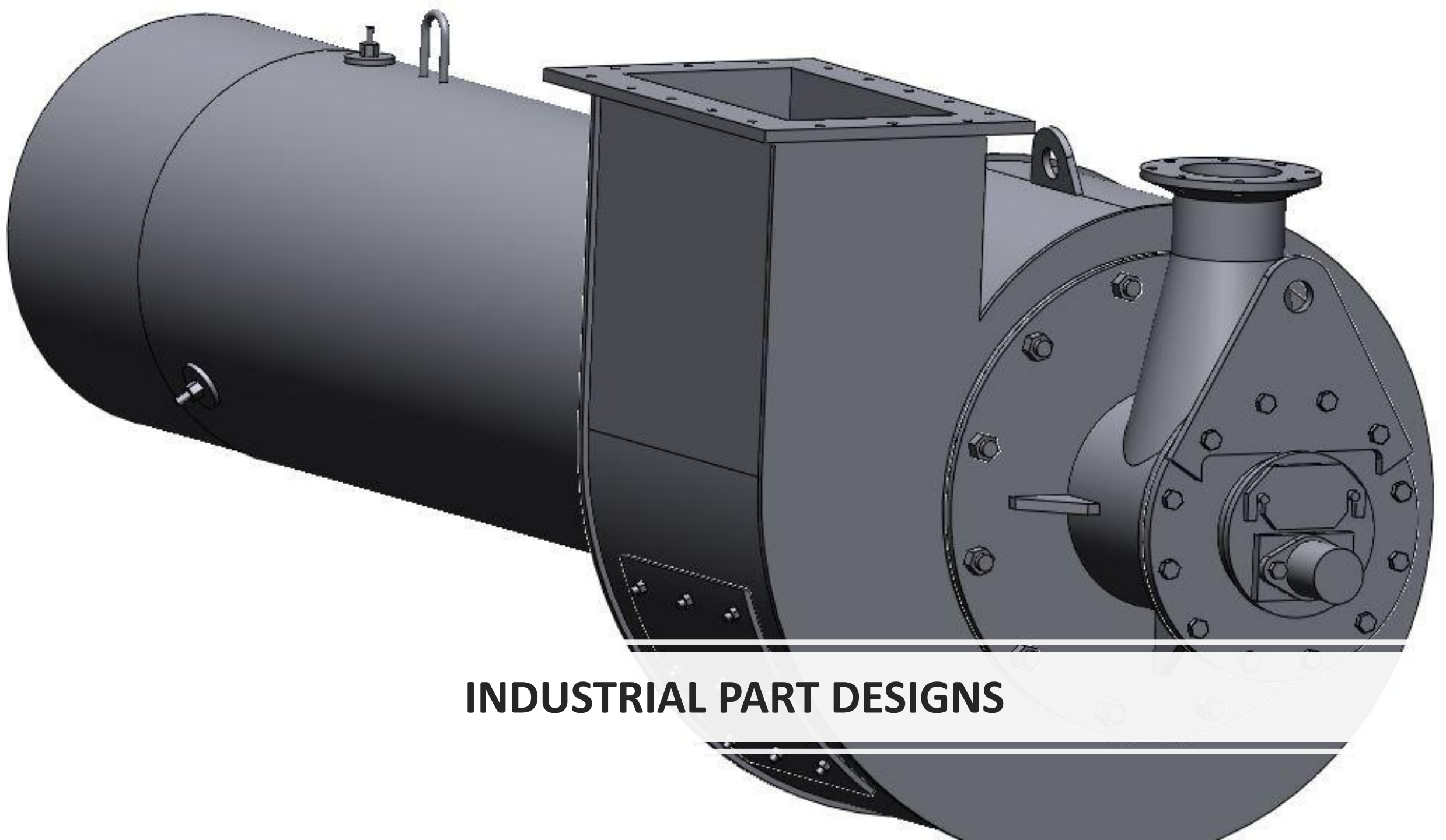
Current Points: 20,615,894

Selected Points: 0



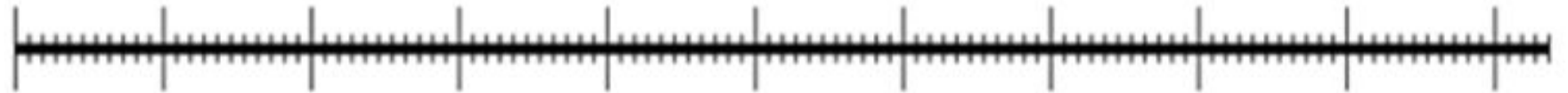


BIG STRUCTURE DESIGNS CHUTE DESIGN IN STEEL PLANT



INDUSTRIAL PART DESIGNS

Capability of
3D Scanning
& Design



0.1mm

20-25meter



**MANUFACTURING DRAWING DEVELOPMENT
FOR SPARES, COMPONENTS & EQUIPMENT
REVERSE ENGINEERING
OUTPUT FORMATS**

- 3D SCANNING & DIGITIZATION
STL
- 3D CAD MODEL GENERATION **IGS, STEP,
ETC.**
- 2D MANUFACTURING DRAWING
- MOC (MATERIAL OF CONSTRUCTION)
- MECHANICAL PROPERTISE
- DESIGN PERFORMANCE STUDIES
CFD/FEA/CAE
- PART MANUFACTURING SUPPORT
- MANUFACTURED PARTS &
COMPONENTS INSPECTION



SIMPLIFYING DIMENSIONS

REVERSE ENGINEERING CUSTOMER LIST

NAME OF PLANT	WORKING DATE	APPROX TOTAL NUMBER OF PARTS	SCOPE OF WORK	STATUS OF WORK
RELIANCE SASAN POWER LIMITED	2015-18	750	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	DRAWINGS & CAD SUBMITTED
CESC-CENTRAL TURBINE MAINTENANCE DEPARTMENT	2017-18	4	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF IP TURBINE BLADES.	DRAWINGS & CAD SUBMITTED
HINDUSTAN POWER (MB POWER) Annupur	2017-18	150	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	DRAWINGS & CAD SUBMITTED
RELIANCE POWER ROSA PLANT	2107-18	150	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	DRAWINGS & CAD SUBMITTED
ADANI POWER-MUNDRA	2016	10	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF TURBINE COMPONENTS. SUCH AS DIAPHRAGMS, TURBINE CASINGS, ROTORS, SEAL GLANDS Etc.	DRAWINGS & CAD SUBMITTED
GE-POWER (CLP JHAJAR)	2015-18	70	3D SCANNING OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	SCAN DATA SUBMITTED
GE-POWER (RELIANCE SASAN)	2015-18	80	3D SCANNING OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	SCAN DATA SUBMITTED
GE-POWER (ADANI)	2016	30	3D SCANNING OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	SCAN DATA SUBMITTED
SPECTRUM-ACB INDIA RITJA	2017-18	12	3D SCANNING & DRAWING GENERATION OF TMD-DIAPHARGM	DRAWINGS & CAD SUBMITTED
SEMBCORP - NELLUR	2017-18	110	BOILER TUBES, CRITICAL TURBINE COMPONENTS- SEAL GLANDS(HP,IP)	DRAWINGS & CAD SUBMITTED

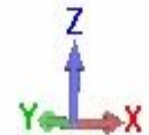


SIMPLIFYING DIMENSIONS

REVERSE ENGINEERING CUSTOMER LIST

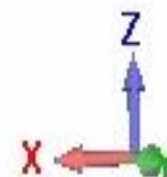
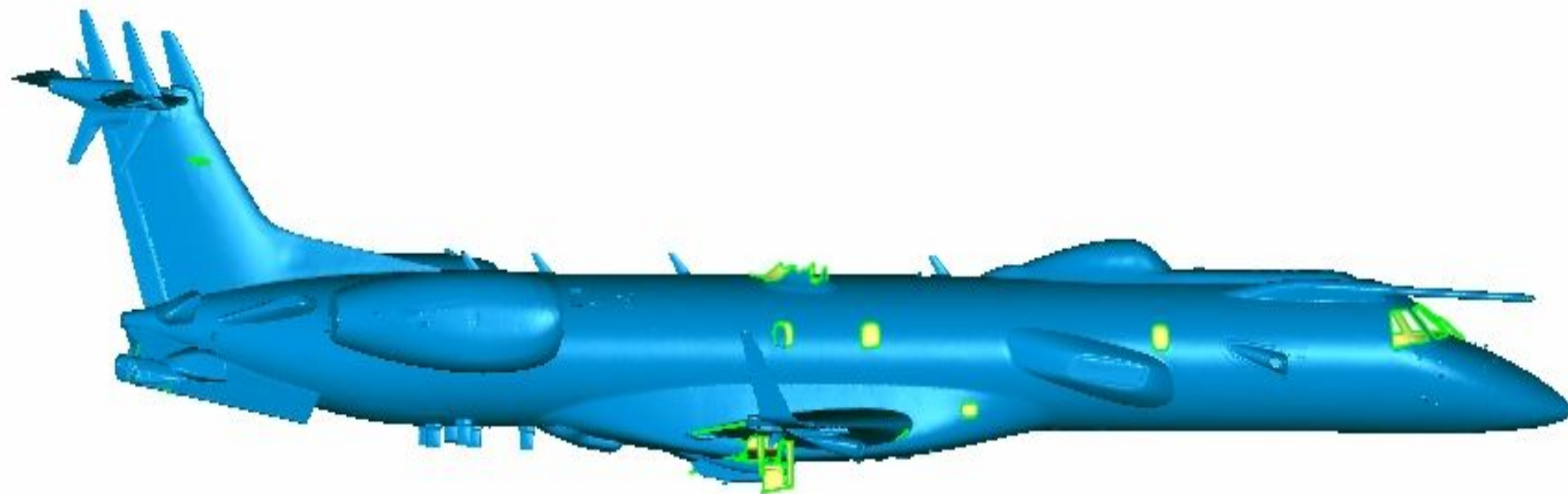
TATASTEEL-JAMSHEDPUR	2017-19	8	3D LASER SCANNING & REVERSE ENGINEERING OF SHUTES	DRAWINGS & CAD SUBMITTED
	2017-19	15	3D LASER SCANNING & REVERSE ENGINEERING OF TUYERS	DRAWINGS & CAD SUBMITTED
GE POWER-(MPPGCL BIRSINGHPUR)	2018-19	14	3D LASER SCANNING & 3D MODELLING OF TURBINE GENERATOR SHAFTS FOR R&M PURPOSE	DRAWINGS & CAD SUBMITTED
GE POWER-(BHUSAWAL THERMAL POWER STATION)	2018-19	6	3D LASER SCANNING & 3D MODELLING OF TURBINE GENERATOR SHAFTS FOR R&M PURPOSE	DRAWINGS & CAD SUBMITTED
GE POWER-(MAHAGENCO CHANDRAPUR)	2018-19	6	3D LASER SCANNING & 3D MODELLING OF KWU 500 TURBINE MODULES FOR R&M PURPOSE	DRAWINGS & CAD SUBMITTED
GE POWER-(ADANI POWER, TIRODA)	2018-19	4	3D LASER SCANNING OF HIP OUTER CASING & STEAM CHEST	3D SCAN DATA SUBMITTED
GE POWER-(VEDANTA, JHARSUGUDA)	2018-19	4	3D SCAANNING OF TURBINE VALVE COMPONENTS	3D SCAN DATA SUBMITTED
SPECTRUM INDIA (ACB) KORBA	2018-19	3	3D SCANNING & DRAWINGS GENERATION OF CEP PUMP PARTS	DRAWINGS & CAD SUBMITTED
VOITH HYDRO (VADODARA / VIETNAM)	2018-19	2	3D SCANNING, 3D MODELLING & SUBMISSION OF HIGH QUALITY DATA OF PELTON RUNNER	DRAWINGS & CAD SUBMITTED
NTECL VALLUR	2018-19	200	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	DRAWINGS & CAD SUBMITTED
RELIANCE POWER ROSA PLANT	2019	100	3D SCANNING, MODELLING & 2D DRAWING GENERATION OF CRITICAL COMPONENTS OF CHP, AHP, BOILER & TMD.	DRAWINGS & CAD SUBMITTED
HINDALCO INDUSTRIES. (ANPARA)	2019	1	3D SCANNING & 2D DRAWING GENERATION OF COAL MILL SHAFT	DRAWINGS & CAD SUBMITTED
TOSHIBA JSW POWER SERVICES PVT LTD.	2019	2	3D SCANNING & SUBMISSION OF 2D DRAWINGS GENERATION OF TURBINE BEARINGS	DRAWINGS & CAD SUBMITTED
SEMBCORP - NELLUR	2019	22	BOILER TUBES, CRITICAL TURBINE COMPONENTS- SEAL GLANDS(HP,IP)	DRAWINGS & CAD SUBMITTED

Live Examples-AVRO AIRCRAFT SCANNING-DRDO

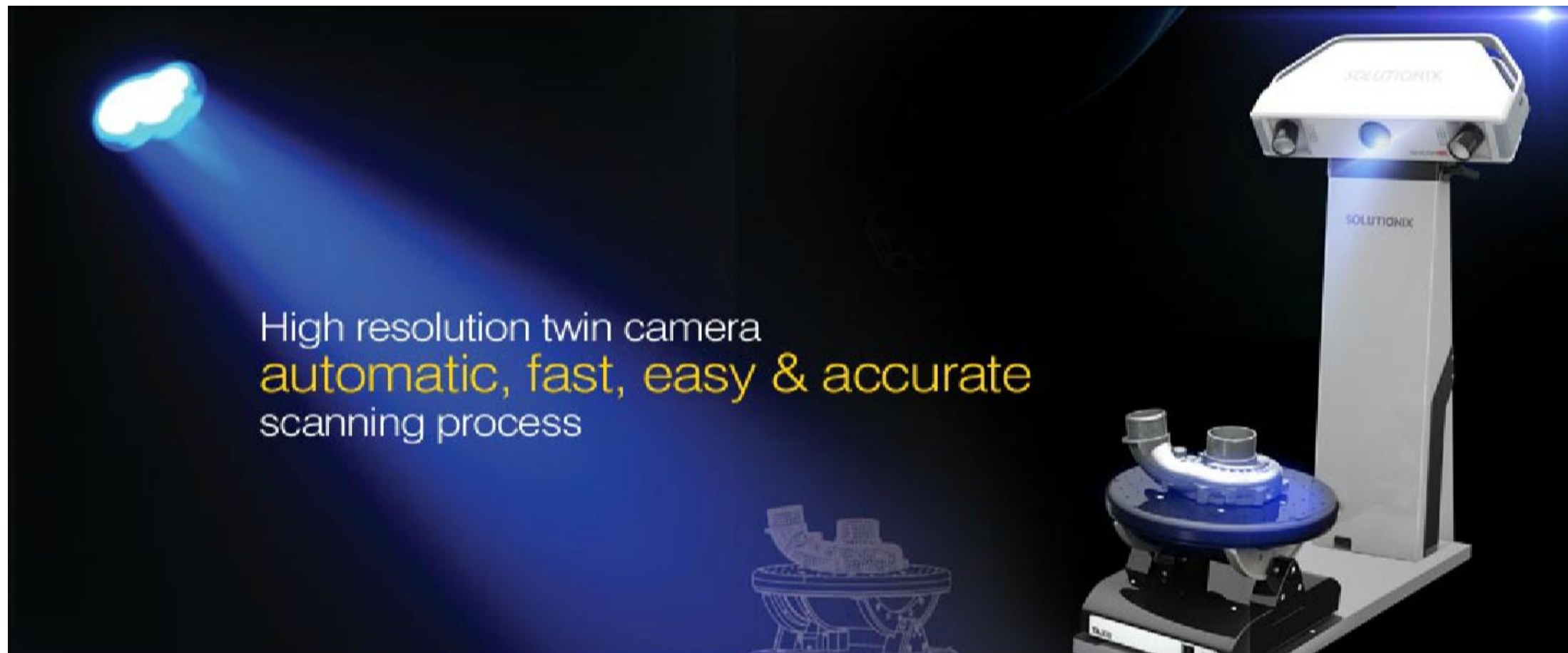


Live Examples-EMRAR

AIRCRAFT SCANNING-DRDO



Latest Blue Light based 3D SCANNER SYSTEM





NDI Optical Tracker System
PROBE & 3D LASER SCANNER

NDI Optical Tracker
System

PROBE & 3D LASER
SCANNER

SIX D INDIA



8.0
MPix
CCD

REXCON 4

3D Measurement for quality and speed



[PRECISE • FLEXIBLE • CONVENIENT]

FARO



HEXAGON



Z+F
Zoller+Fröhlich

**LONG RANGE
SCANNERS**

- WE ARE USING LATEST SCANNERS FROM HEXAGON-RTC360 , Z+F 5010, 5006i & Faro X130 ALONG WITH LEICA TS 09+ & 11+

CERTIFICATION OF INSTRUMENT

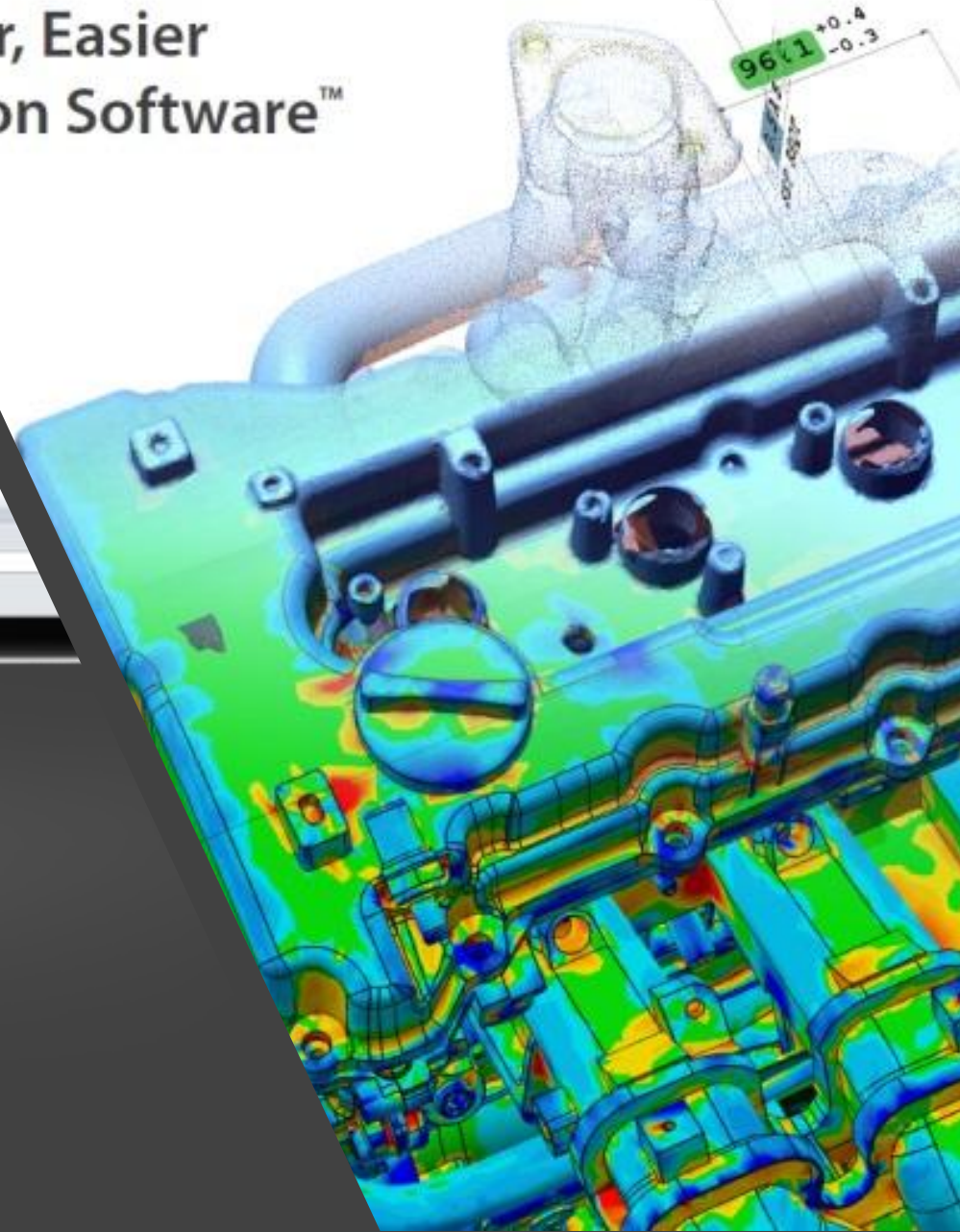
• FOR ACCURACY & PRECISION

ALL OUR 3D SCANNERS & MAPPING
SYSTEMS ARE CALIBRATED & CERTIFIED
BY GERMAN STANDARD VDI/VDE 2634



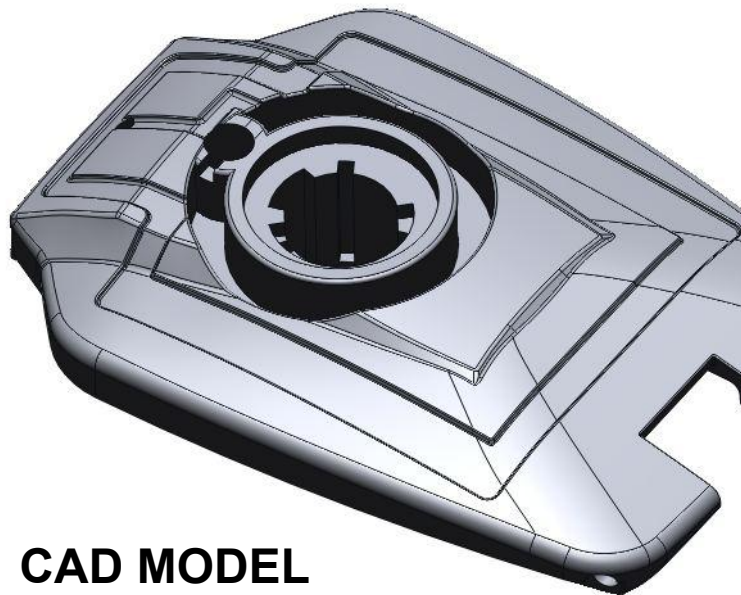
Be Safer, Easier
Inspection Software[™]

QC & Dimensional
Inspection
UNLOCK ALL DIMENSIONS

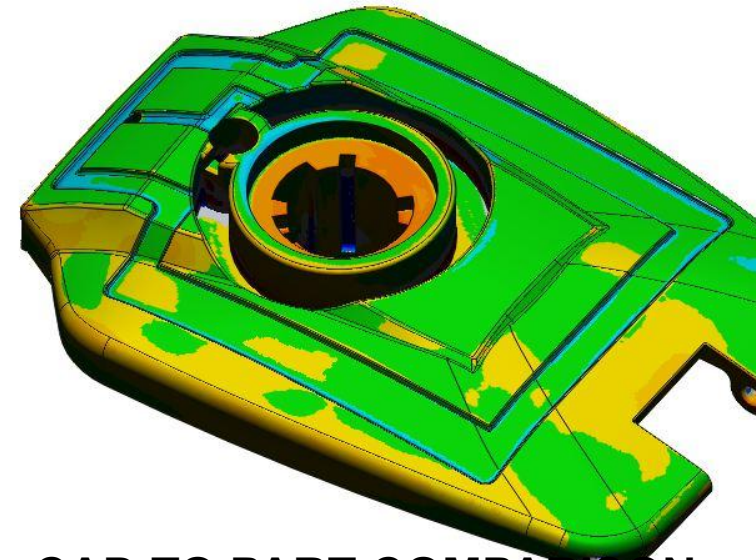




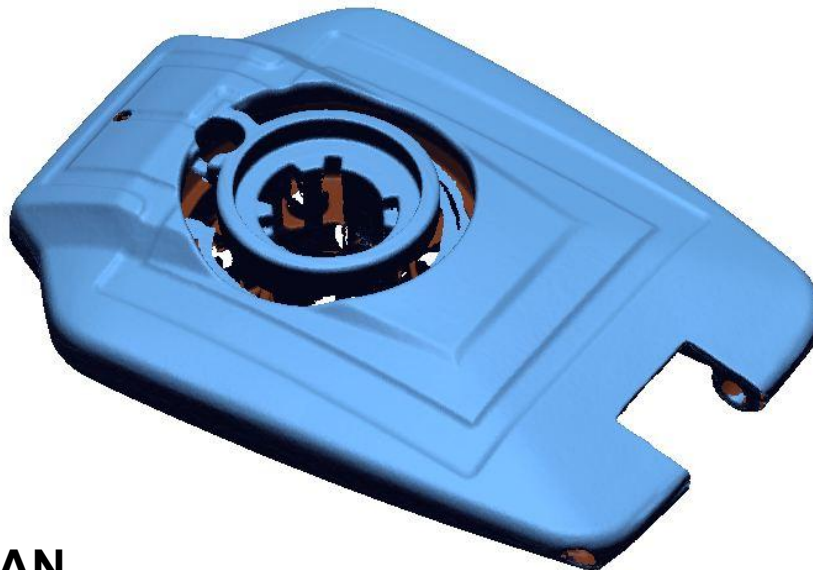
PHYSICAL PART



CAD MODEL



CAD TO PART COMPARISON



**SCAN
DATA**

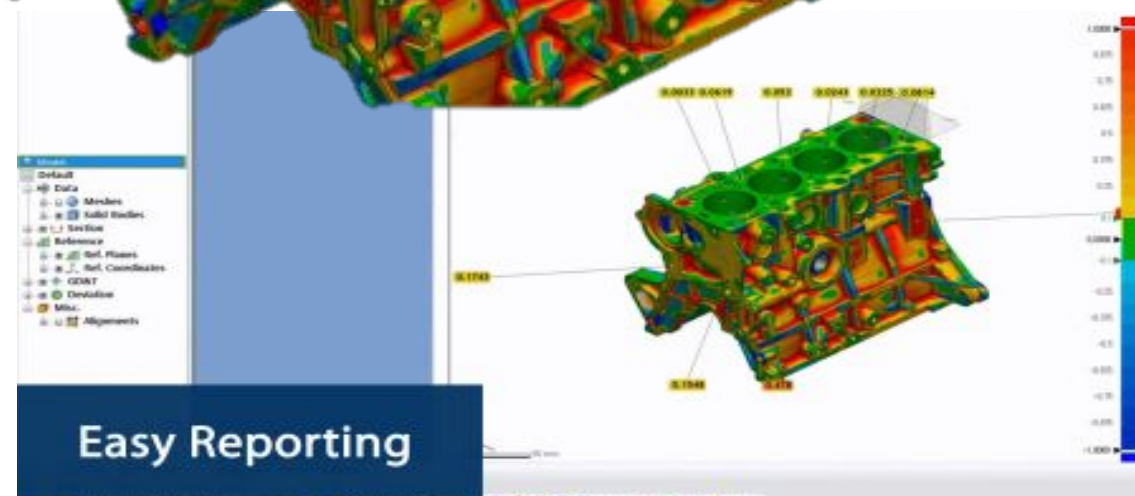
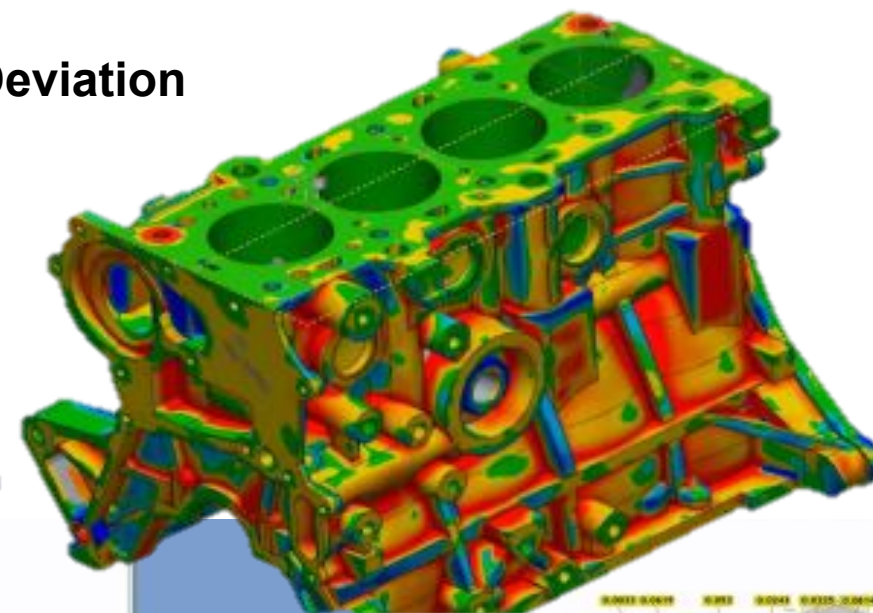
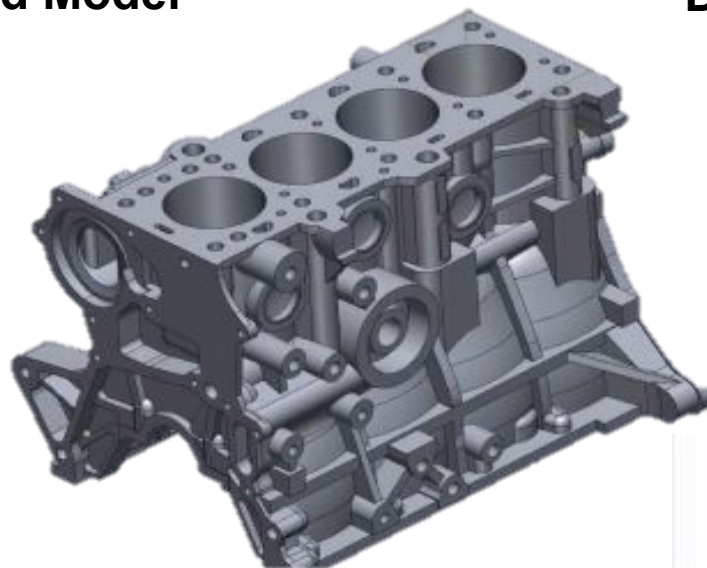
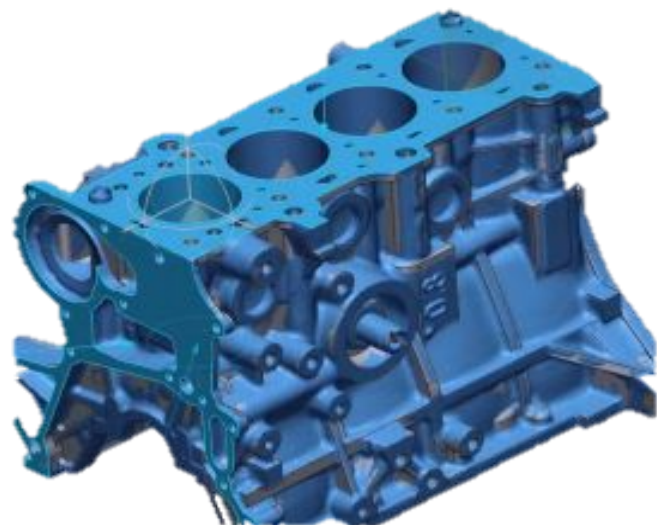
PART INSPECTION PROCESS WORK-FLOW

PART INSPECTION CAD TO PART COMPARISONS

Scan Data

Cad Model

Deviation



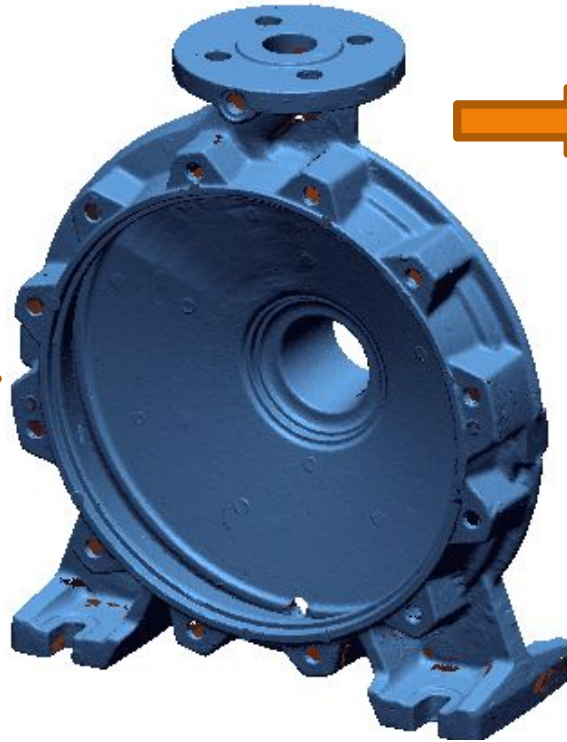
Scan Data
ALIGNED WITH CAD MODEL

PART INSPECTION CAD TO PART COMPARISONS

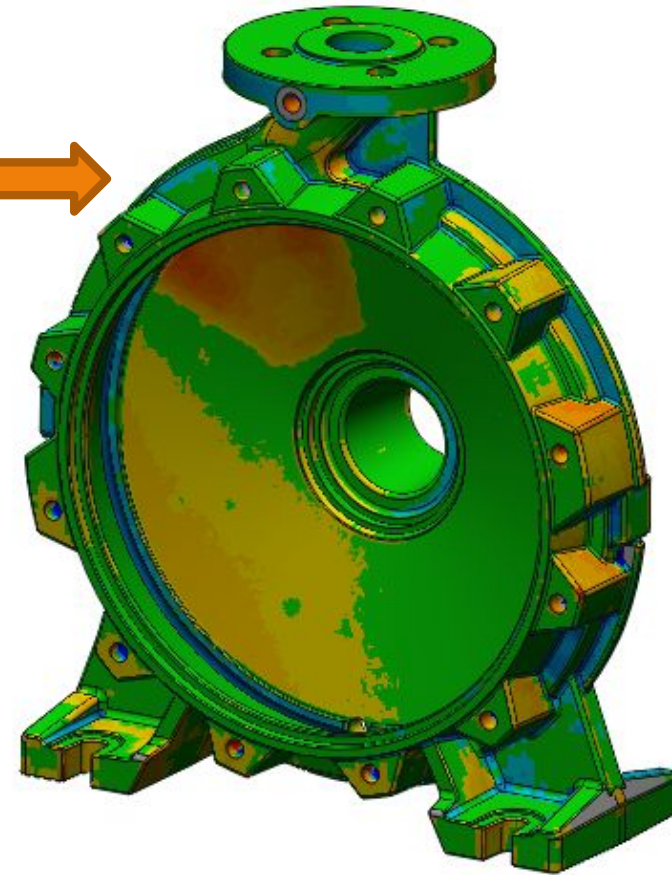
Physical Part



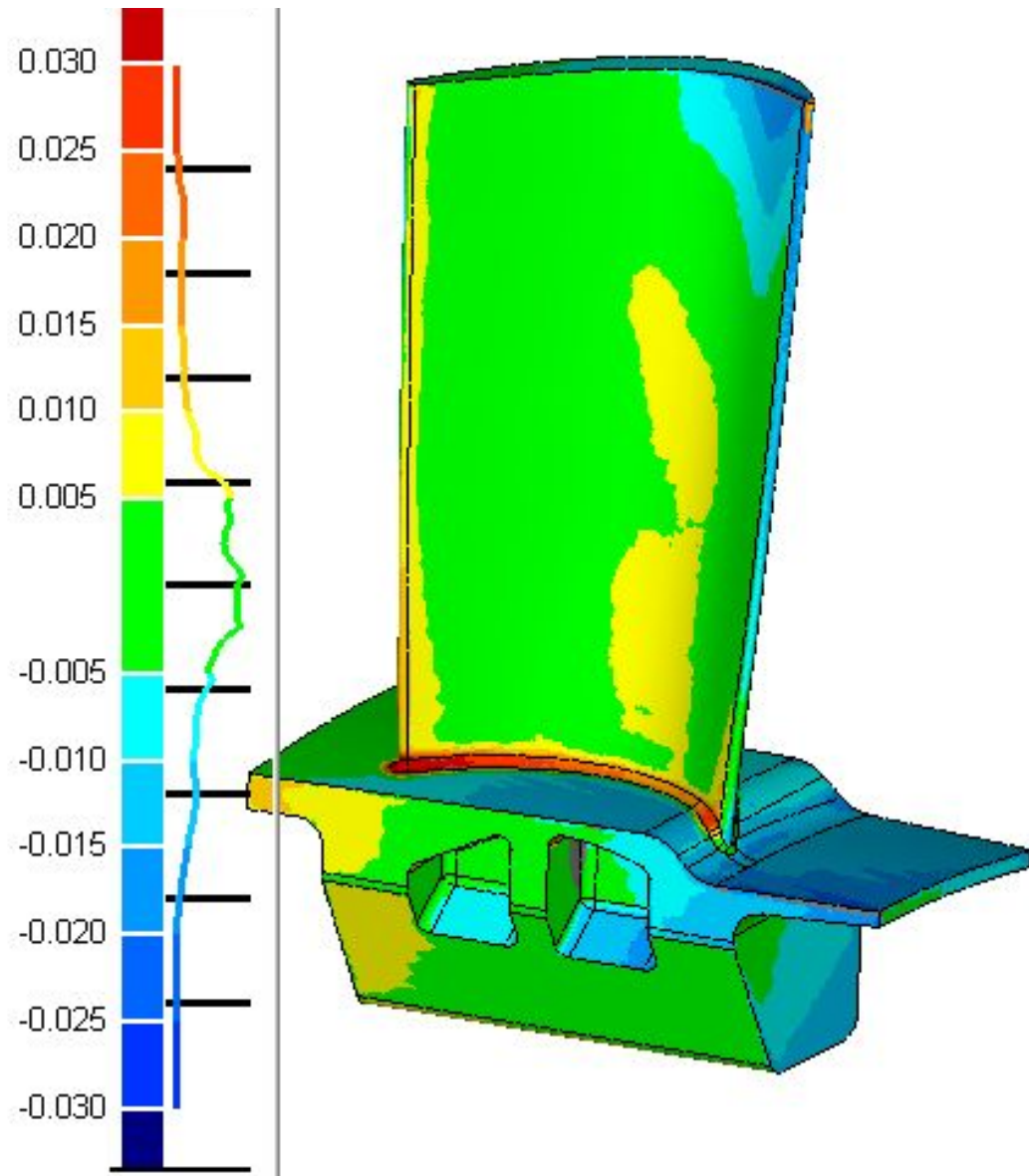
Scan Data
ALIGNED WITH CAD MODEL



Cad Model



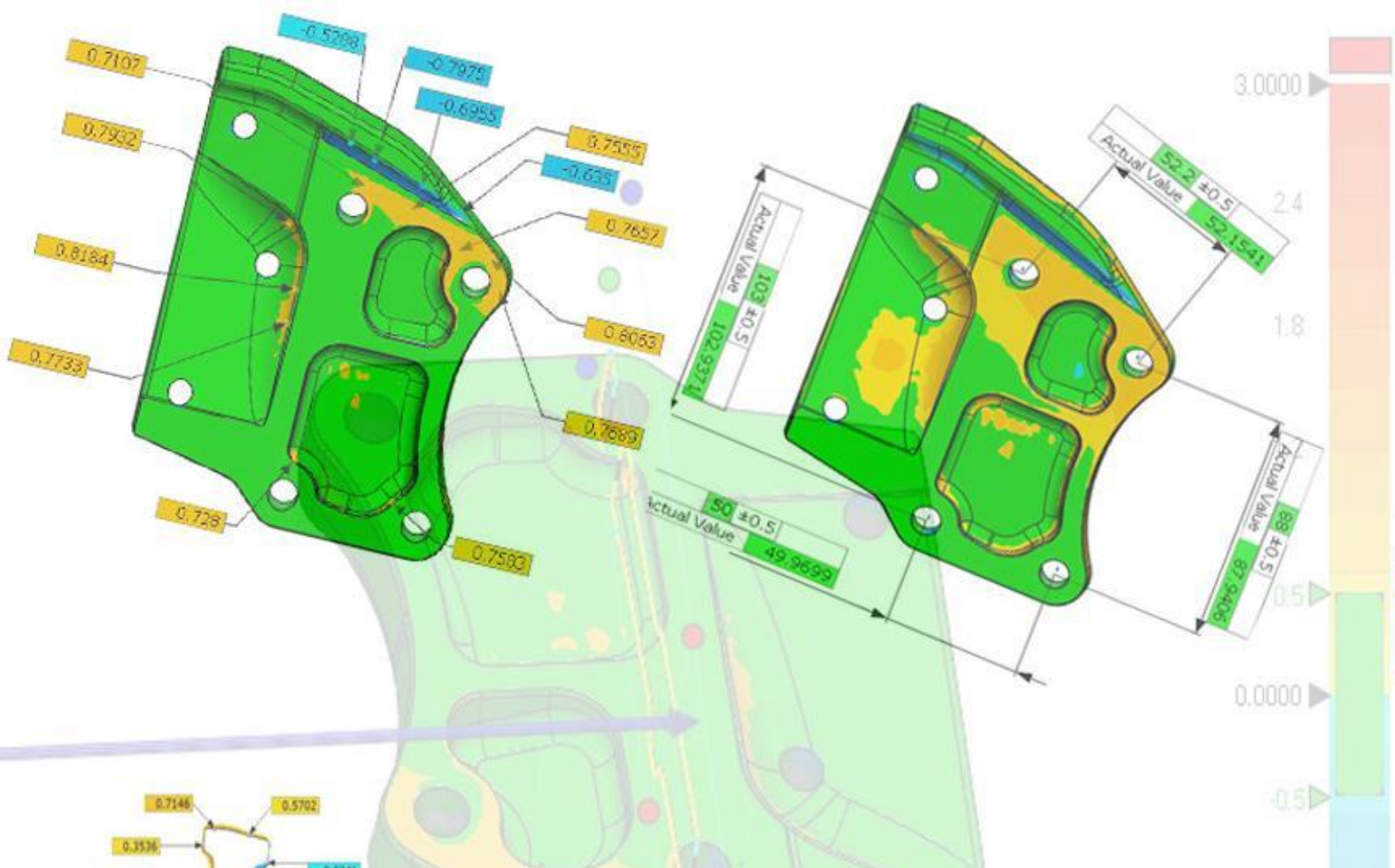
Deviation



PART INSPECTION RESULTS

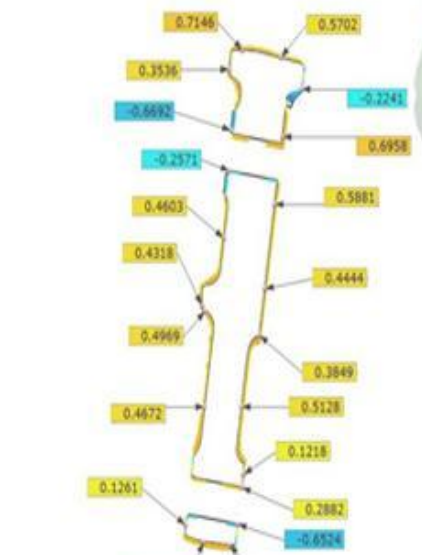
CAD TO PART COMPARE

- Graphical 3D Comparison of reference and Test Model
- Deviation color maps
- Fully Customizable Color Spectrum
- Go/No Go Analysis
- Deviation and Text Annotation



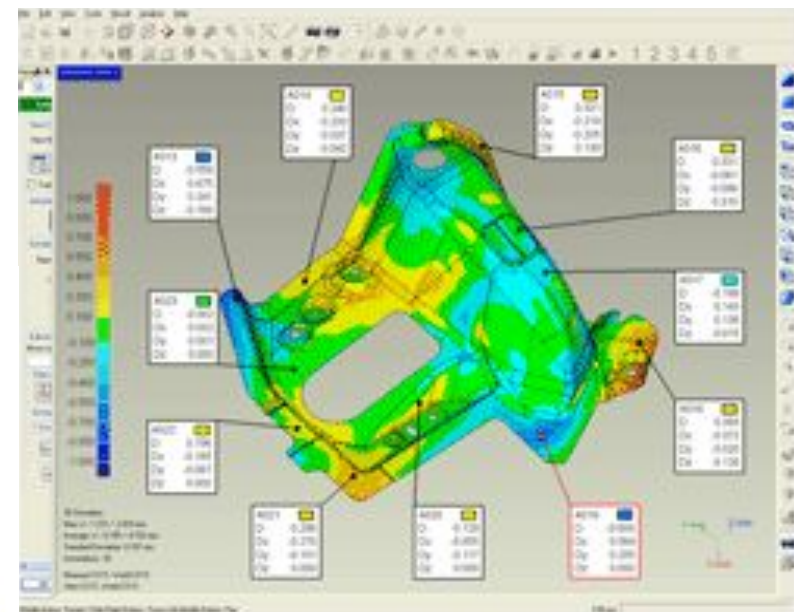
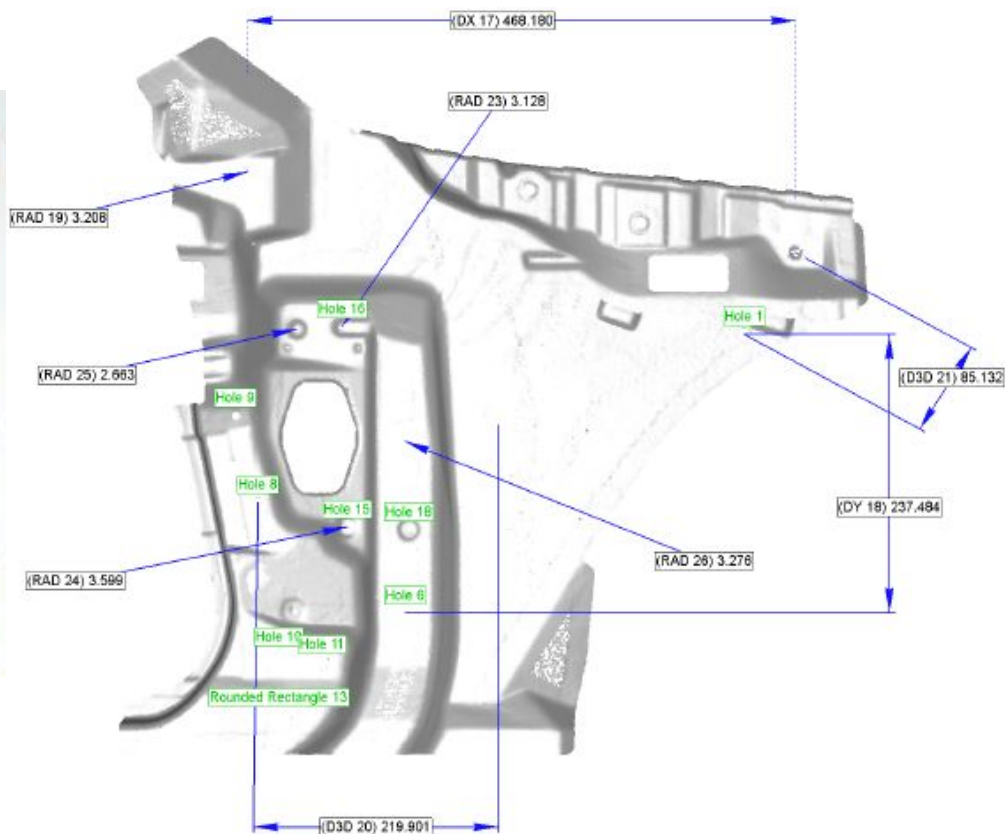
3D Inspection GD&T

Parts are inspected based on GD&T for insure the parts form technical drawings which have the desired form, function and interchangeability



Name	Min	Max	Avg	RMS	Std. Dev.	Var.	1Avg	Avg
2D Compare: 1	-1.9200	1.8755	0.4294	0.6175	0.4137	0.1709	0.9315	-0.4518
Name	Result Name	Tolerance	Gap Dist.	Reference Pos.			Measured Pos.	
2D Compare: 1	Result Data - 1	±0.5	0.3702	Z	T	X	Y	
2D Compare: 2	Result Data - 1	±0.5	0.7146	-265	440.7743	-264.9728	441.4833	
2D Compare: 3	Result Data - 1	±0.5	0.3536	-270.0255	435	-270.3774	435.2439	
2D Compare: 4	Result Data - 1	±0.5	0.4958	-245.4215	415	-245.7336	414.8952	
2D Compare: 5	Result Data - 1	±0.5	0.6932	-269.352	416.5606	-268.7111	417.1528	
2D Compare: 6	Result Data - 1	±0.5	-0.2571	-270	404.5227	-269.9937	404.5557	
2D Compare: 7	Result Data - 1	±0.5	0.5881	-252.4181	395	-251.8566	394.9123	
2D Compare: 8	Result Data - 1	±0.5	0.4444	-256.2088	370	-255.7694	369.9337	
2D Compare: 9	Result Data - 1	±0.5	0.3849	-258.2003	356.1047	-257.4246	356.0618	
2D Compare: 10	Result Data - 1	±0.5	0.4318	-280.685	365	-281.1136	364.9475	
2D Compare: 11	Result Data - 1	±0.5	0.4969	-275.4082	363.3823	-279.3853	362.9105	
2D Compare: 12	Result Data - 1	±0.5	0.1218	-264.5044	315	-264.384	314.0818	
2D Compare: 13	Result Data - 1	±0.5	0.2882	-265.0894	311.741	-265.1213	310.8549	
2D Compare: 14	Result Data - 1	±0.5	0.7215	-294.0519	-277	-270.0452	293.087	

PART INSPECTION CAD TO PART COMPARE



SIXD ENGINEERING SOLUTIONS PRIVATE LIMITED



Member Since: 2019/09/30

DUNS REGISTRATION

Corporate Information

Business Address:	H-94, Ground Floor, Sec 63, Noida, Uttar Pradesh, 201301, India
Tel:	+91 (120) 4542274
Current Website:	sixdindia.com
Main Website:	www.sixdindia.com
Email Address:	info@sixdindia.com
Employee Size (Range):	45

D&B Information

DUNS Number:	864378139
Credit Report Availability:	On Demand

Registration Information

Line of Business:	Engineering Consultancy Services, 3D Laser Scanning Services, 3D Modelling Services, Detail Engineering, Reverse Engineering, Dimensional Control, & Digital Profile Mapping.
Business Type:	Private Limited Company
Date of Registration:	2006
Registration Number:	Company Registration Number U75220DL2006PTC156271, Permanent Account Number AAKCS3890D, Goods and Service Tax Number 09AAKCS3890D2Z1

Key Employees

Director:	Mr. Pawan Panchpal
Director:	Mr. Bhagwan Panchpal
Chief Executive Officer:	Mr. Akash Rana
Technical Director:	Mr. Balwant Singh Rana

CERTIFICATION OF INSTRUMENT FOR ACCURACY & PRECISION

OUR 3D MAPPING SYSTEMS
DEVICES ARE CALIBRATED &
CERTIFIED BY OEM STANDARD



SixD ENGINEERING SOLUTIONS PVT LTD

HSE CERTIFICATION

- AN OHSAS 18001: 2007 CERTIFIED ORGANIZATION
 - Our LTI Man hours are 96000+ Hours
 - We as a company and its employees have a strict adherence to Safety under the SAFTEY FIRST program.
-



Certificate of Registration

This certificate has been awarded to

SixD Engineering Solutions Private Limited

H-101, II Floor, Sector-63, Noida, Uttar Pradesh, 201301, India

in recognition of the organization's Health and Safety Management System which complies with

OHSAS 18001:2007

The scope of activities covered by this certificate is defined below

Providing Engineering Consultancy, Inspection, 3D Laser Scanning Services and Reverse Engineering

Certificate Number:

75962/A/0001/UK/En

Issue No:

1

Date of Issue: (Original)

29 October 2016

Expiry Date:

28 October 2019

Date of Issue:

29 October 2016

Issued by:

On behalf of the Schemes Manager



Certificate of Registration

This certificate has been awarded to

Six D Engineering Solutions Pvt. Ltd.

Plot No. H-101, 2nd Floor, Sector-63, Noida, Uttar Pradesh, 201301, India

in recognition of the organization's Quality Management System which complies with

ISO 9001:2015

The scope of activities covered by this certificate is defined below

Providing Sales and Services of Engineering Equipments (i.e. 3D Scanner and Laser Scanner)

Certificate Number:	Date of Issue: (Original)	Date of Issue:
70954/A/0001/NB/En	10 August 2015	27 August 2018
Issue No:	Expiry Date:	
3	09 August 2021	

Issued by:

On behalf of the Schemes Manager



SixD ENGINEERING SOLUTIONS PVT LTD ISO CERTIFIED COMPANY

- **AN ISO 9001:2015 CERTIFIED ORGANIZATION**
- Under ISO Audit Program we ensure
 - Our systems are calibrated and tested inhouse under periodic annual maintenance according to VDI/VDE 2634 GERMAN STANDARDS.
 - Our Job procedures are well documented and job description explained clearly to our employees
 - Check list are well maintained for all the activities

OUR CUSTOMERS WE ARE ASSISTING...



