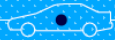




# Eaton Aerospace – Fluid Conveyance: 3D CAD Modeling, Validation and Engineering Data Management

Brandon L. Perkins  
Engineering Specialist  
Eaton Corporation

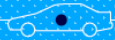


# Eaton Aerospace Fluid Conveyance Division



## *Who are we?*

- Formerly Aeroquip Fluid Conveyance
- Facilities worldwide (Jackson, MI; Toccoa, GA; Lakeside, UK; Gilching, Germany; Serres Castet, France)
- Engineering design, manufacturing and test facilities



# Eaton Aerospace Fluid Conveyance Division



*Some of our products:*



PRODUCT DEVELOPMENT CONFERENCE



# Eaton Aerospace Fluid Conveyance Division



**Exceed our customers' needs and expectations!**



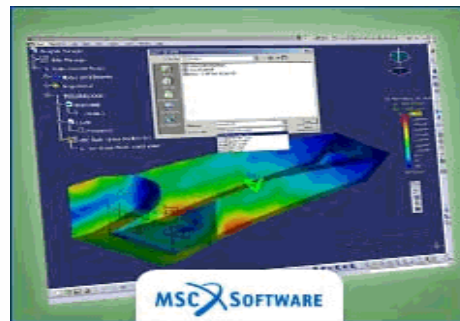
# Deployed systems



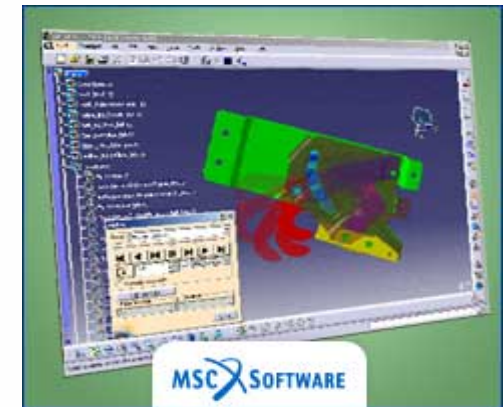
CATIA V5



SMARTTEAM



SimDesigner Linear Structural for CATIA V5



SimDesigner Motion for CATIA V5



# Engineering Data Management



**EATON | Aeroquip**  
COUPLING/SWIVEL PROJECT REQUEST FORM #83-87 K

CUSTOMER: \_\_\_\_\_ PROJECT/TASK NO. \_\_\_\_\_

CUSTOMER P/N: \_\_\_\_\_  P.O. IN HOUSE  CUST. ING.  RFO RTY

APPLICATIONS ENGINEER: \_\_\_\_\_ ACTION REQUIRED \_\_\_\_\_ NEED DATE \_\_\_\_\_

APPLICATION: \_\_\_\_\_ ASSEMBLY DRAWING \_\_\_\_\_

PROGRAM: \_\_\_\_\_  Hose  Bnl  Assy \_\_\_\_\_

SALES POTENTIAL (QTY): \_\_\_\_\_  PART NO. (S) \_\_\_\_\_

PART NUMBERS: \_\_\_\_\_  PROPOSAL DWG \_\_\_\_\_

COUPLING ASSY: \_\_\_\_\_  DETAIL DRAWING \_\_\_\_\_

HOSE HALF: \_\_\_\_\_  OTHER (Etc) \_\_\_\_\_

SWIVEL HEAD HALF: \_\_\_\_\_ CONFIGURATION CONTROL  YES  NO

SWIVEL ASSEMBLY: \_\_\_\_\_

DIST.  LEAD DRAFTSMAN  ENGINEER  FAA/PMA COORDINATOR

MARKETING ADMIN  APPLICATION ENGINEER  TARGET TECH CONTENT MGR

DESIGN REQUIREMENTS & CHARACTERISTICS

COUPLINGS: STYLE \_\_\_\_\_ FRAME SIZE \_\_\_\_\_ FAA/PMA YES  NO

DEFENSE ARTICLE YES  NO  EQUAL NEEDED YES  NO  SIMILARITY REPORT NO. \_\_\_\_\_

	BND HALF	HOSE HALF	CAP	PLUG	SWIVEL
Material					
Fly End Size					
System Medium					
Packing Matl					
Temp. Range					
Color					
Pressure					
Cleaning					
Weight					
Fabrication ACES					
Polarity					
Mounting Flange					
Values					

REMARKS/SKETCHES:

NO. OF COPIES \_\_\_\_\_

ENGINEER NO COMMENT: \_\_\_\_\_ RUNNER

MINOR REPEATER

OTHER

ORIGINATOR \_\_\_\_\_ DATE \_\_\_\_\_ ENGINEER NO: \_\_\_\_\_

PROD. MGR. APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

REF: ACES 975-20 ACT PPR01REC.dwg

Profile Card | Links | Notes

### Eaton Project

ID: **AQA123456**

Program: Joint Strike Fighter

Description: \_\_\_\_\_

Status: \_\_\_\_\_

Priority: R - Routine

Customer: \_\_\_\_\_

Cust Part#: \_\_\_\_\_

Risk Assmt: \_\_\_\_\_

Dist No: \_\_\_\_\_

Req Dept: \_\_\_\_\_

Assn Dept: \_\_\_\_\_

Account: \_\_\_\_\_

Remarks: \_\_\_\_\_

Add OK Apply Cancel Help

General/East Ave/Argyle\_Toccoa/Details/Composition/

## PRODUCT DEVELOPMENT CONFERENCE



# Single point of data entry

Profile Card | Links | Notes | Revision | Viewer

### CATIA Drawing

**File Information**

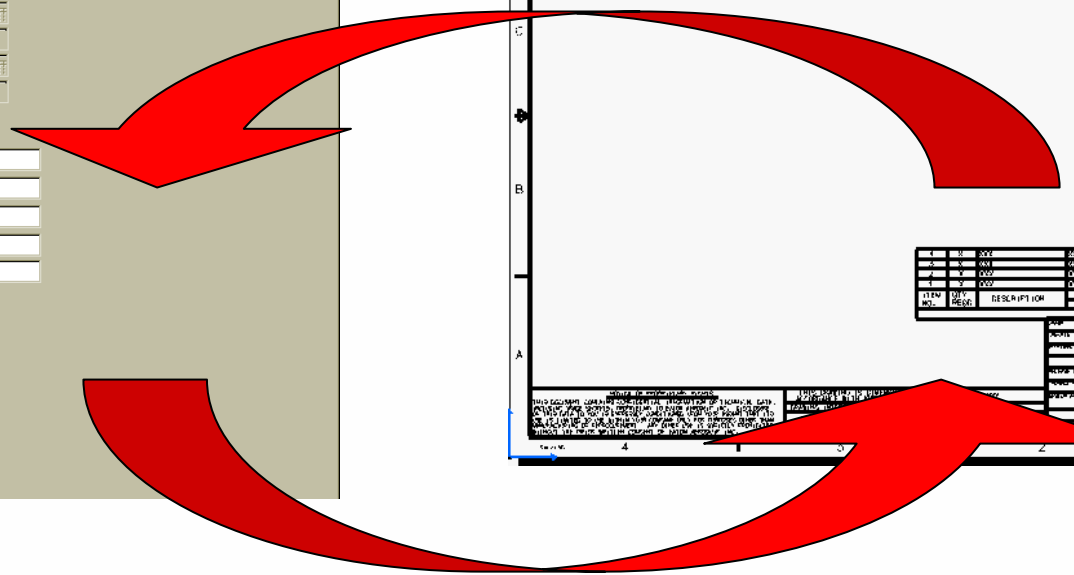
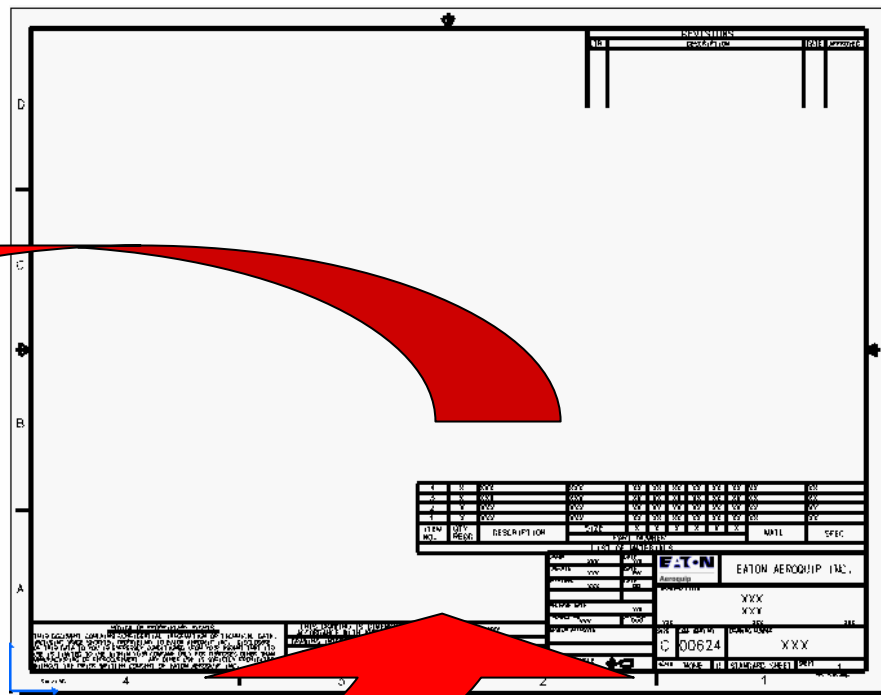
File Type: CATIA Drawing  
 File Name: B4 Landscape.CATDrawing  
 Directory: C:\SmarTeam\work

**User Information**

Created by: joe  
 Creation Date: 11/21/2002 07:17  
 Modified by:  
 Modification Date:

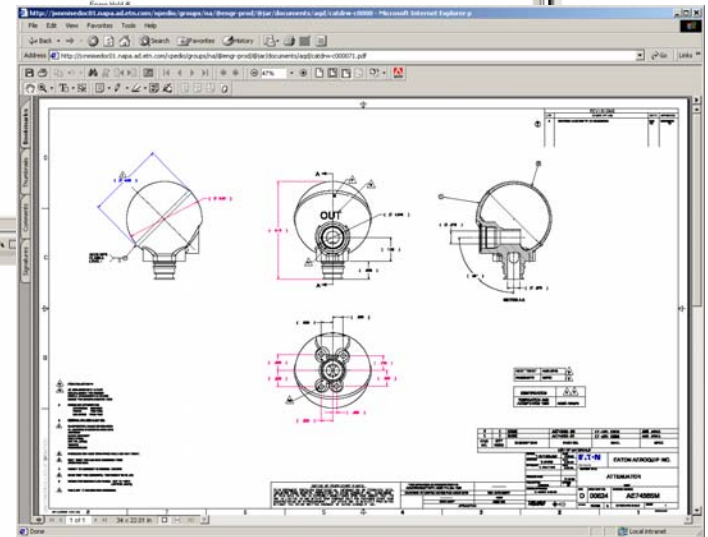
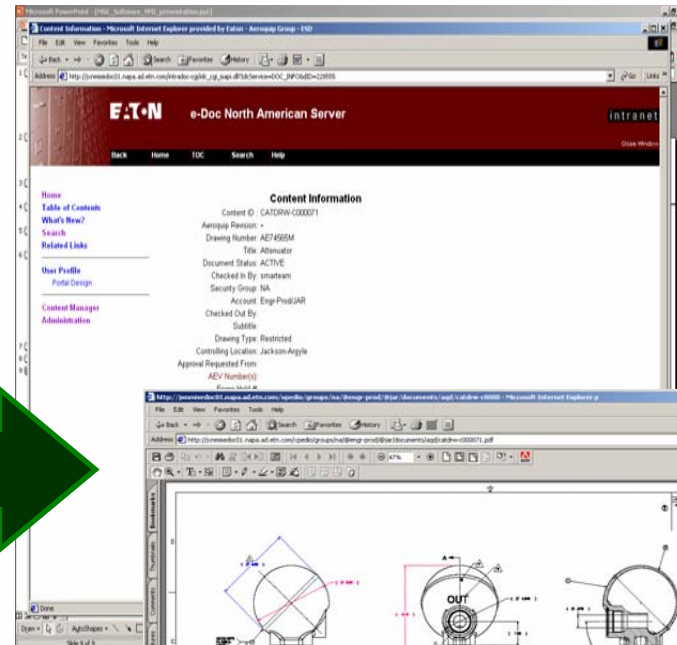
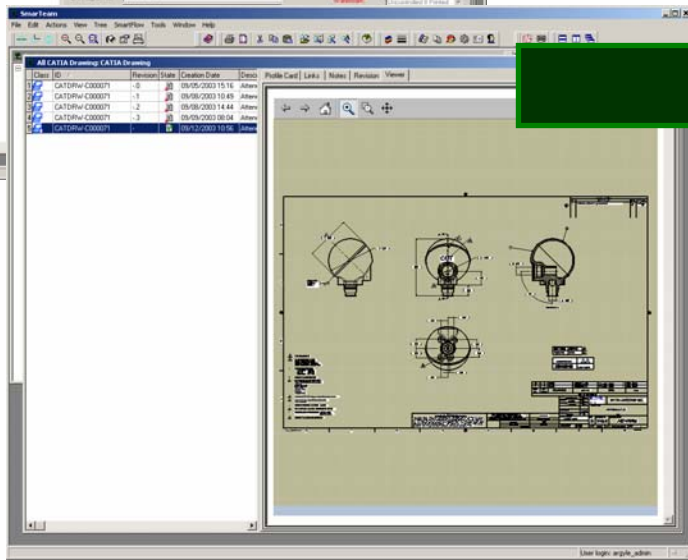
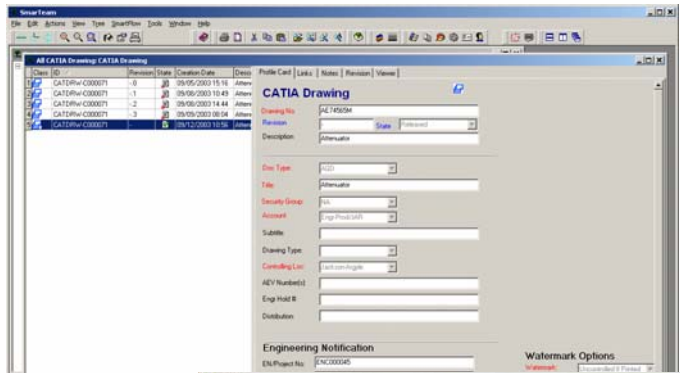
**Additional Information**

Left Coupling Style:  
 Left Design Code:  
 Right Design Code:  
 Type Style-3rd Field:  
 Type Style- 4th Field:  
 Sheet: Of





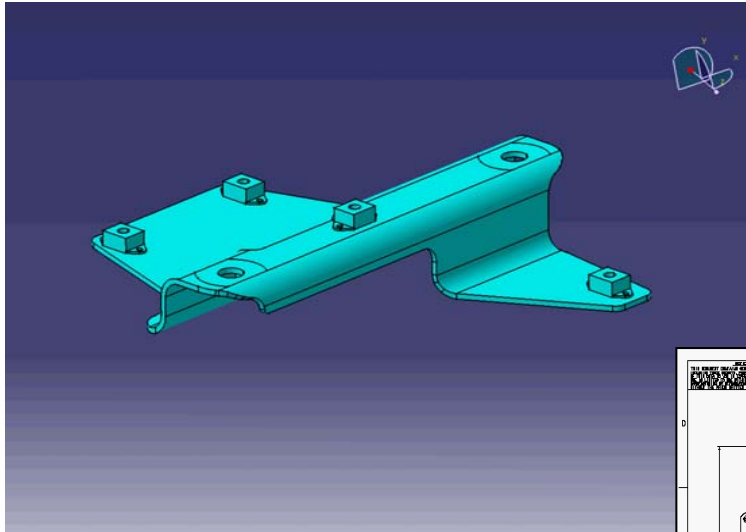
# Custom Integration



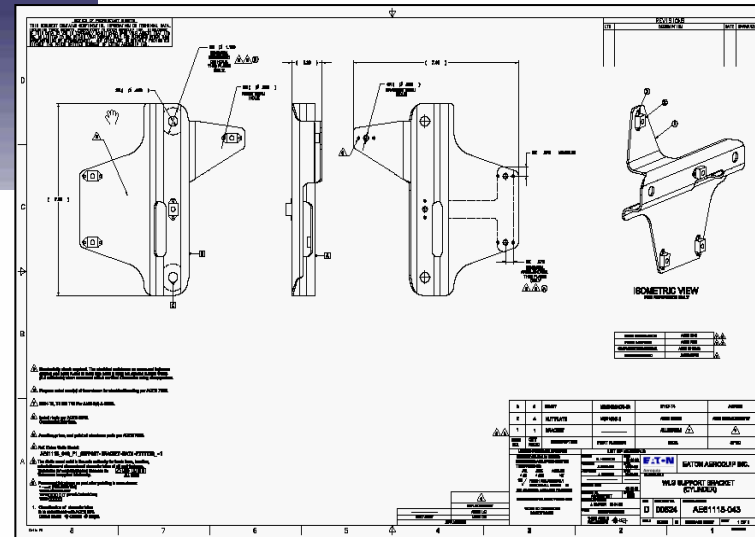
PRODUCT DEVELOPMENT CONFERENCE



# Art to Part in 2 months!

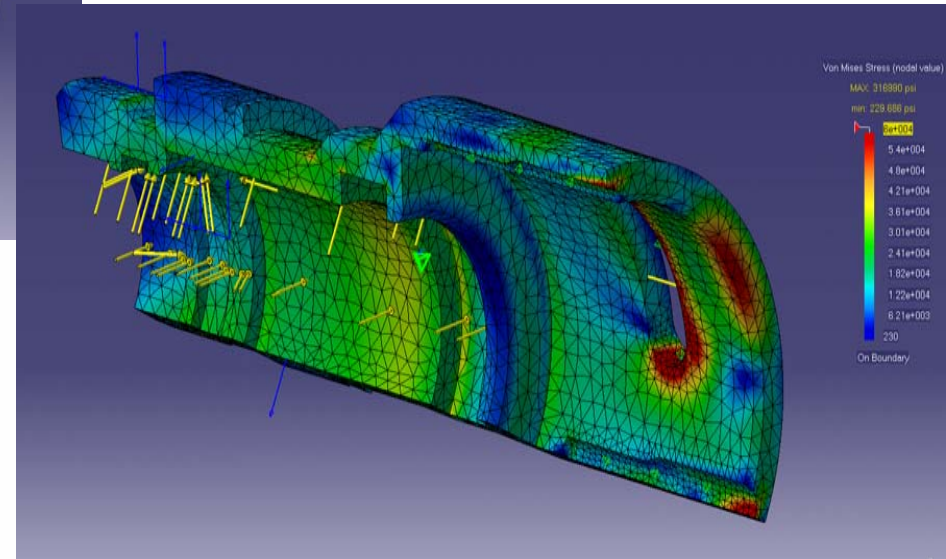
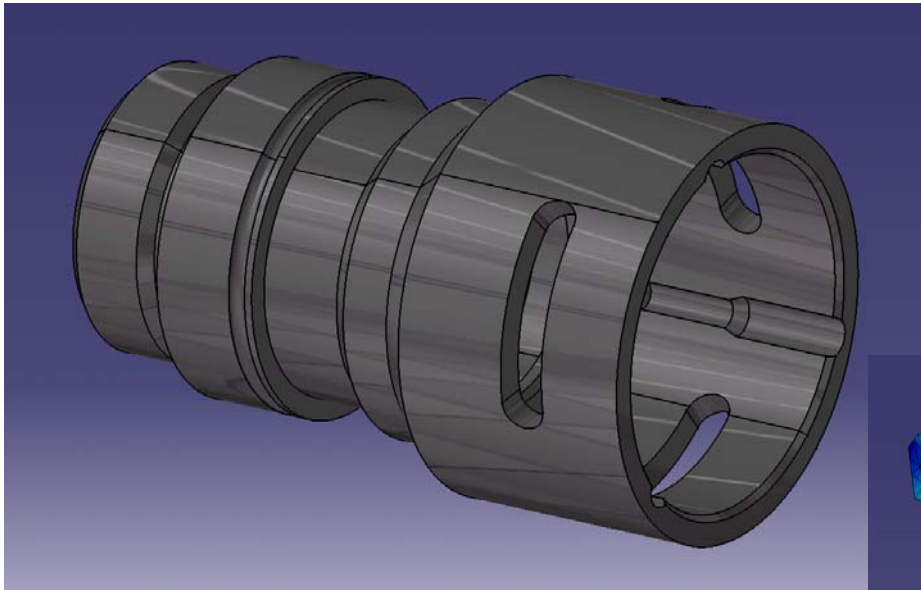


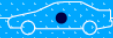
**CATIA V5 3D Solid Model  
used to generate 2D drawing**



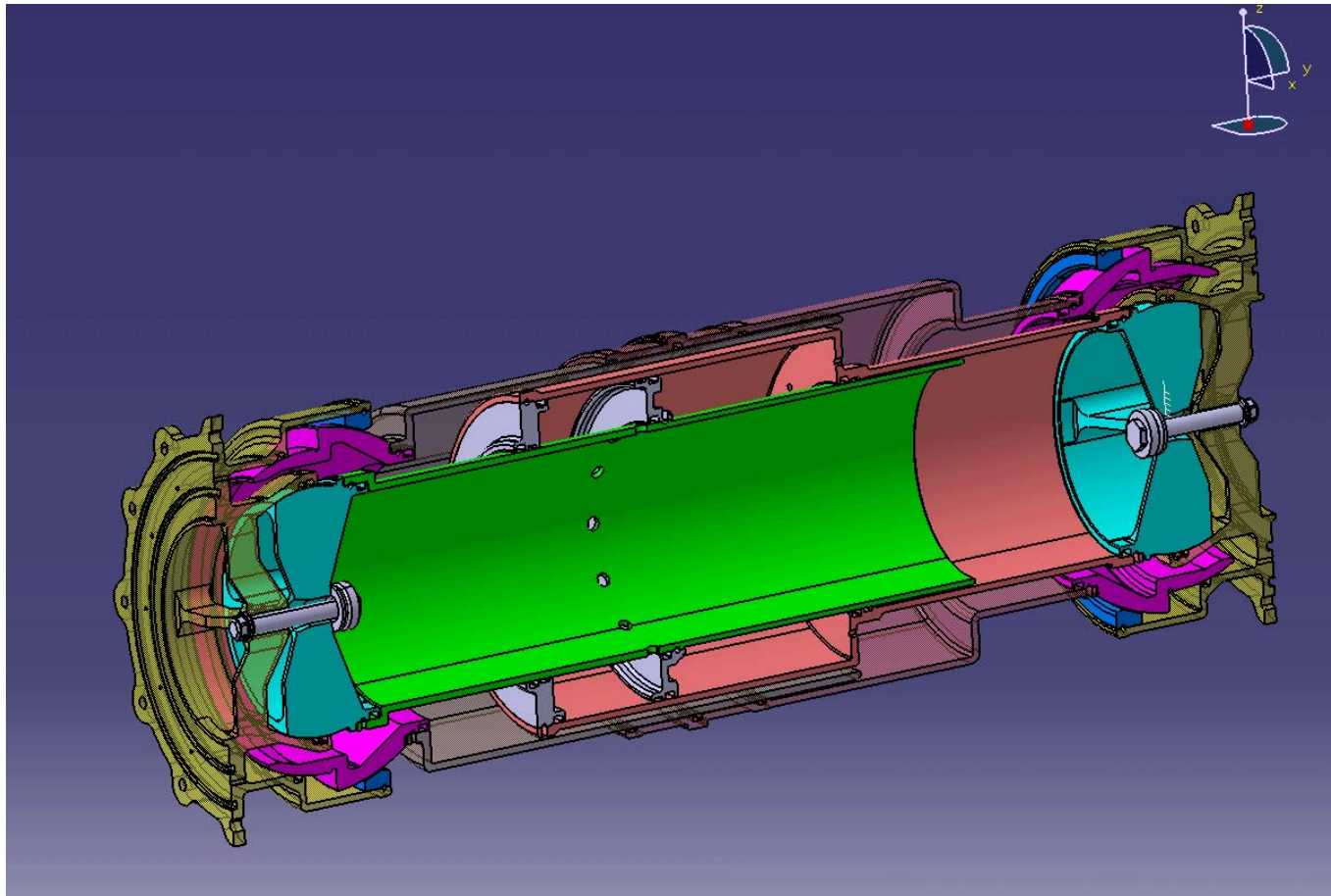


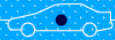
# Up Front Structural Analyses





# Up front Dynamic simulation

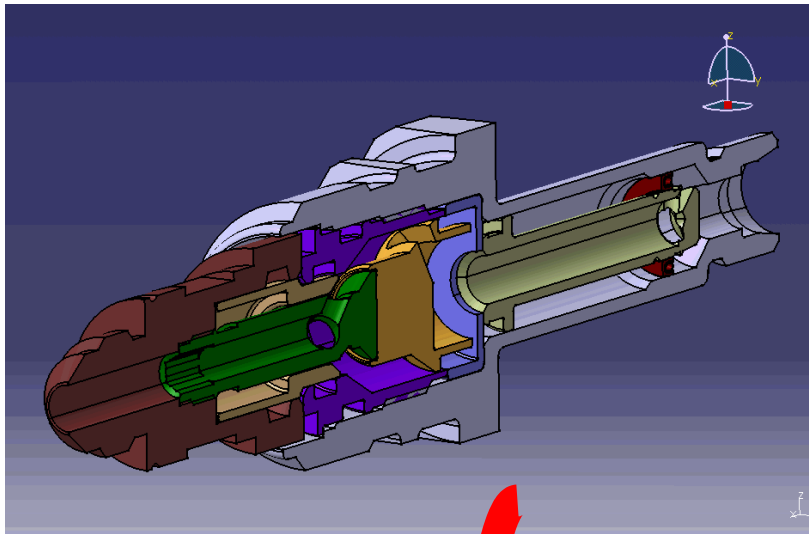




# Up Front Computational Fluid Dynamics

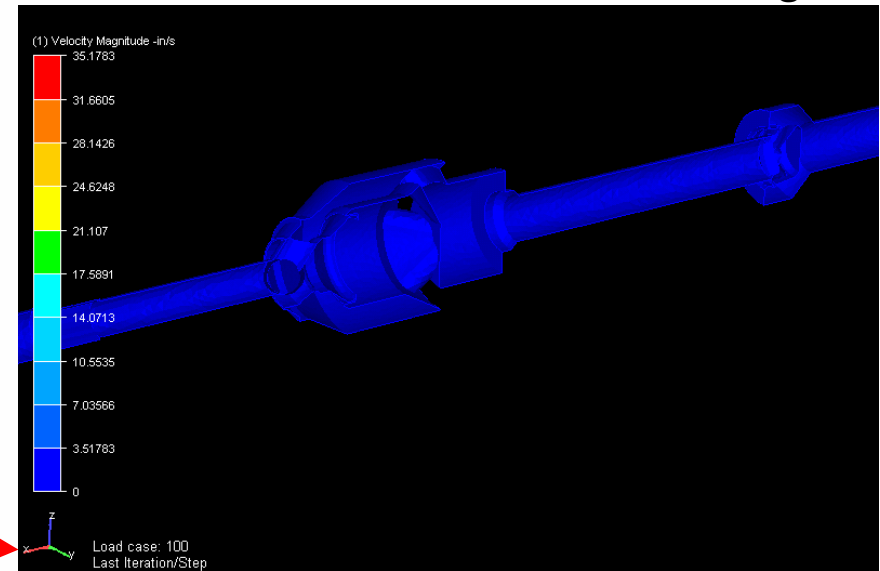


CATIA V5



Transferred V5 model of flow field into CFD code for pressure drop prediction

CFDesign®



PRODUCT DEVELOPMENT CONFERENCE



# Eaton Aerospace Fluid Conveyance Division



**“North America is up and running.  
Let’s collaborate worldwide!”**

*Lakeside, U.K.*

*Serres-Castet, France*

*Gilching, Germany*

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