



POLE TEST COMPARISON

of the

WORLDSID IRTRACC

WORLDSID Rib-EYE &

ES2-re



GRSP Informal Working Group on Pole Side Impact Bonn, Germany
November 16-18, 2010



Objective

To characterize the chest response of WorldSID in matched FMVSS 214 pole testing by comparing IRTRACC and multipoint sensing measurements.



Methodology

- FMVSS 214 pole test: 32km/h, 15 degree
- WorldSID seating procedure Version 2
- Driver seat height set to mid-height
- ES2-re head CG and H-point matched to WorldSID



Test Matrix

	WorldSid IRTRACC	WorldSid Rib-Eye	ES2-re
Honda FIT	X	X	X
Hyundai Genesis	X	X	X
Toyota Matrix	X	X	X
Mazda6	X	X	X
Pontiac VIBE	X	X	X
Chevrolet G5	X	X	
Subaru IMPREZA	X	X	



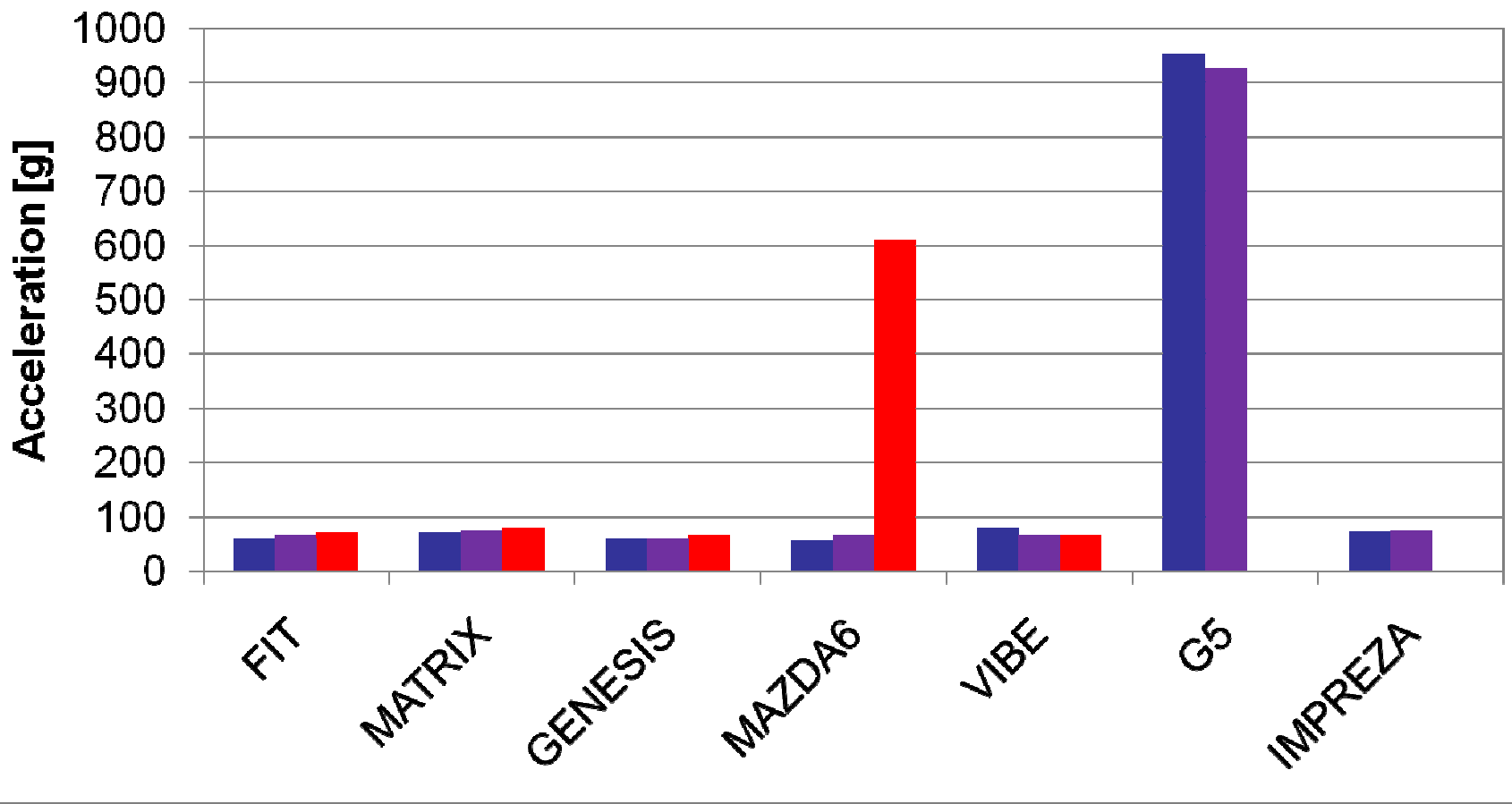


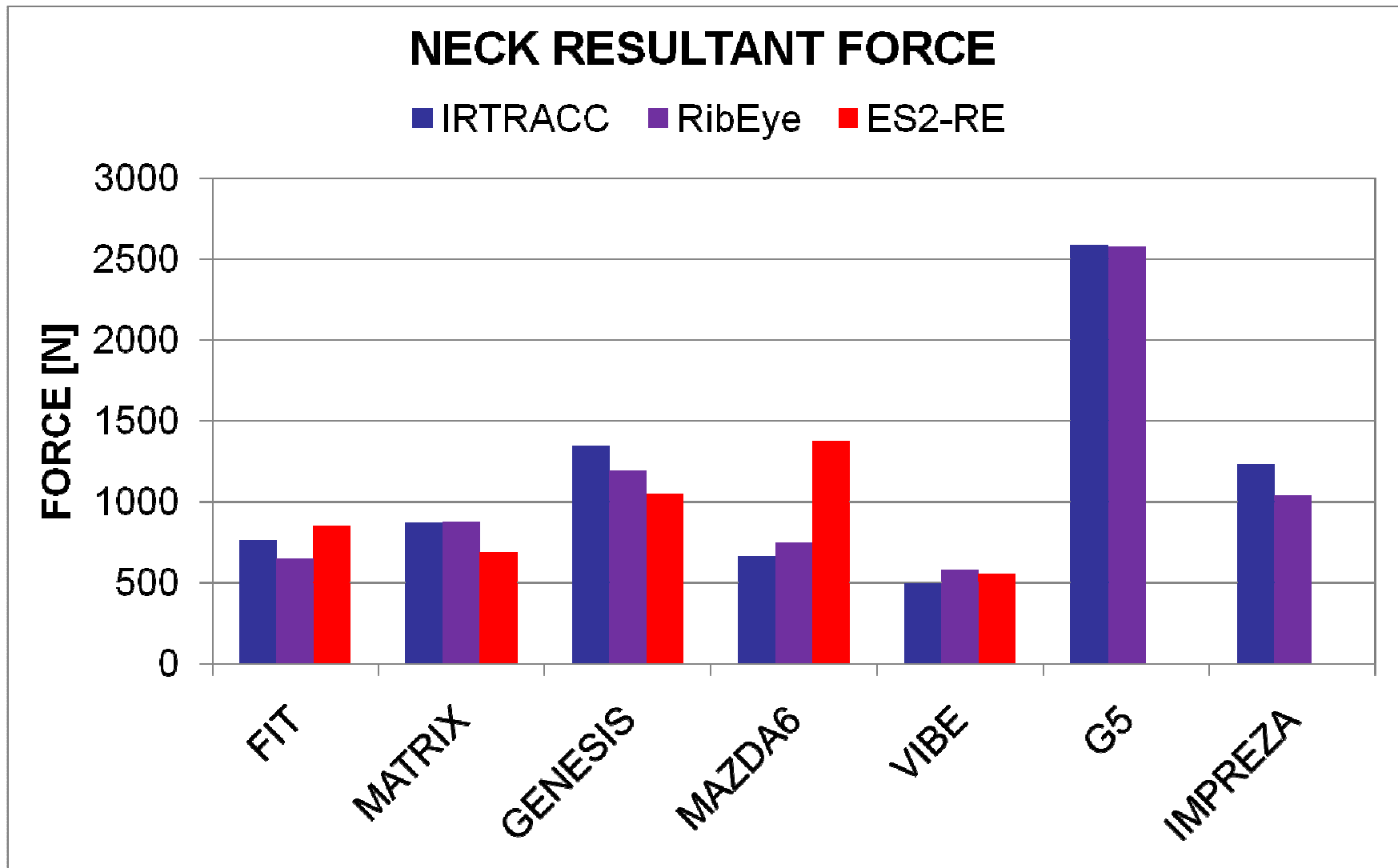


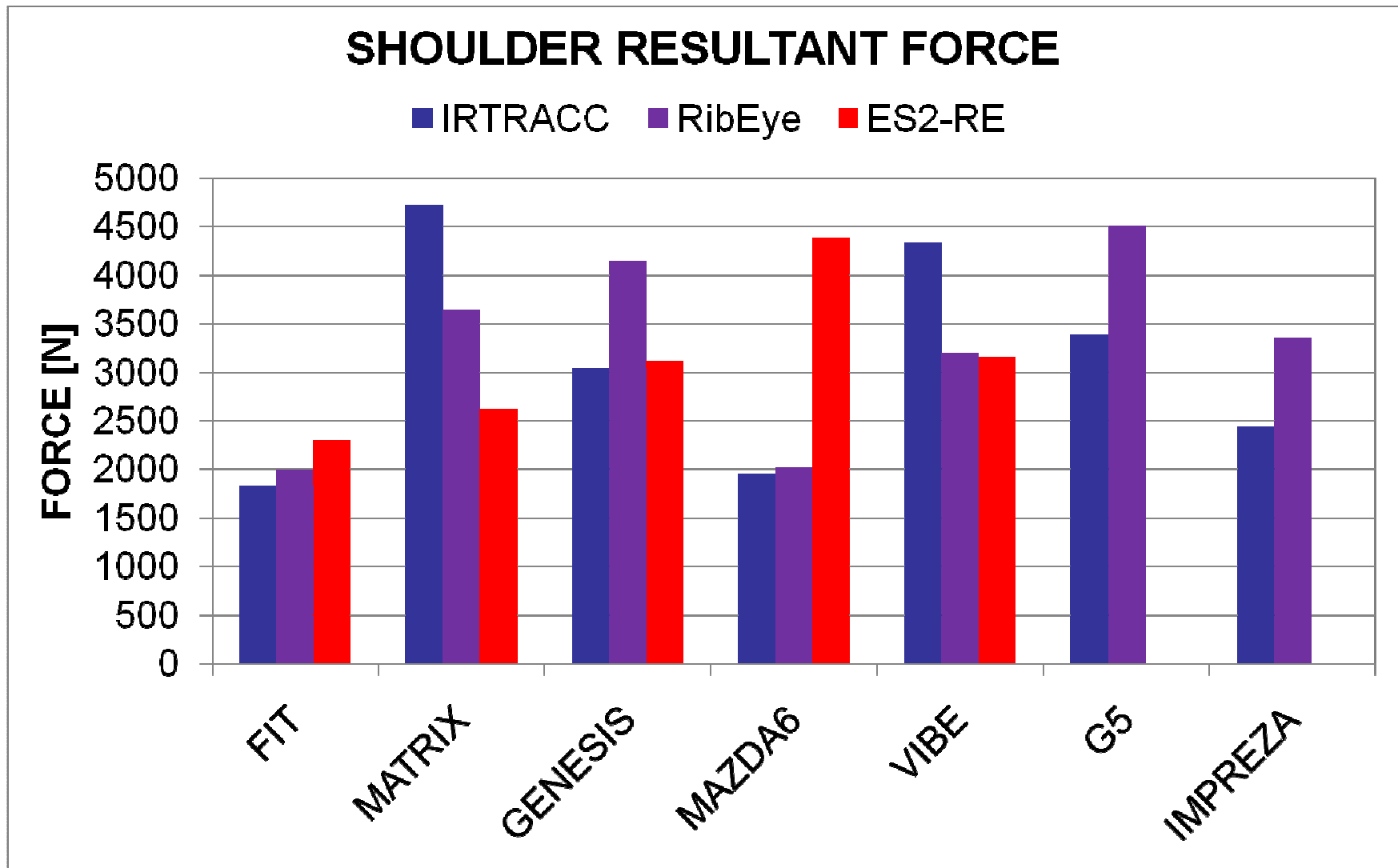


HEAD RESULTANT ACCELERATIONS

■ IRTRACC ■ RibEye ■ ES2-RE



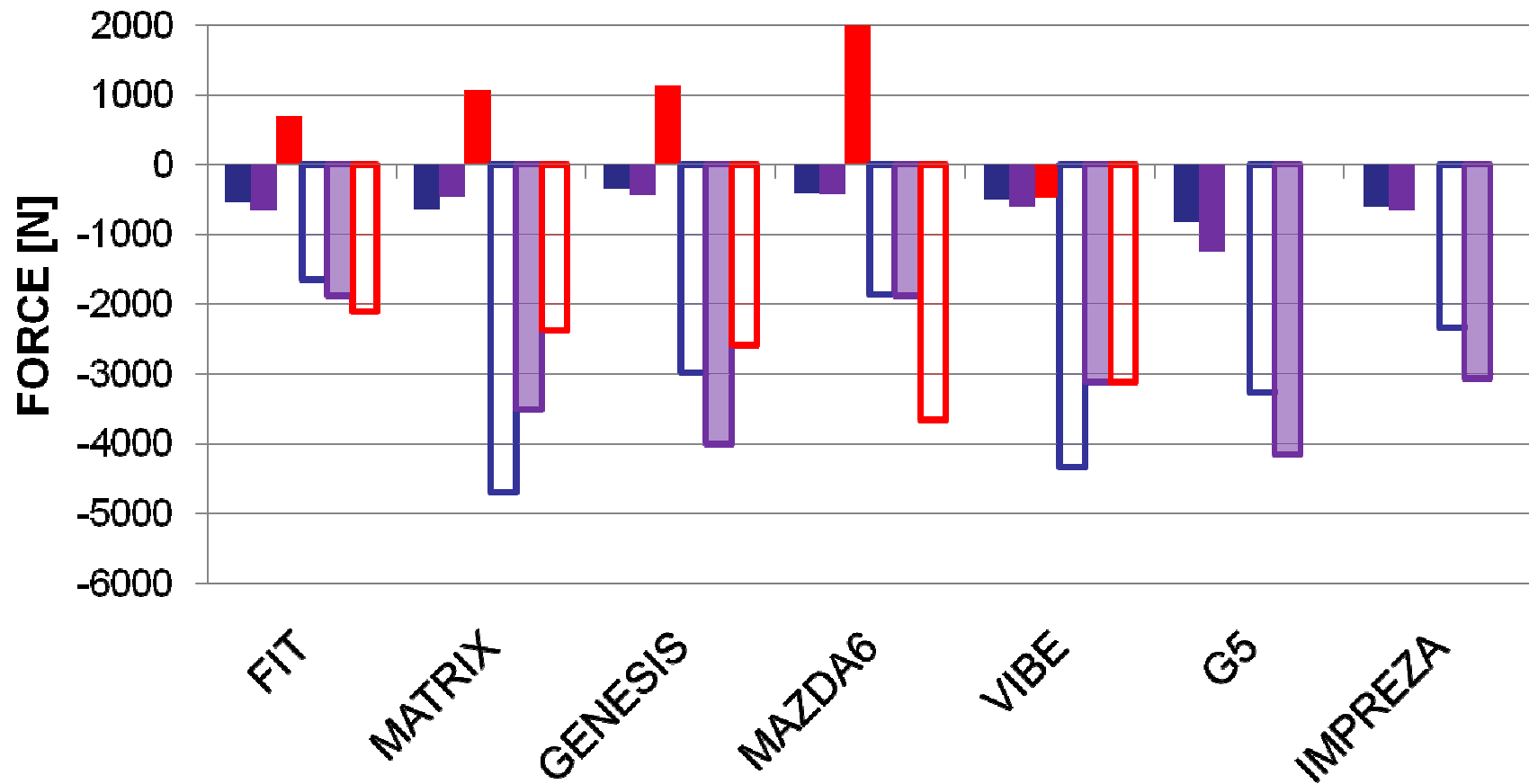






SHOULDER FORCE by COMPONENT

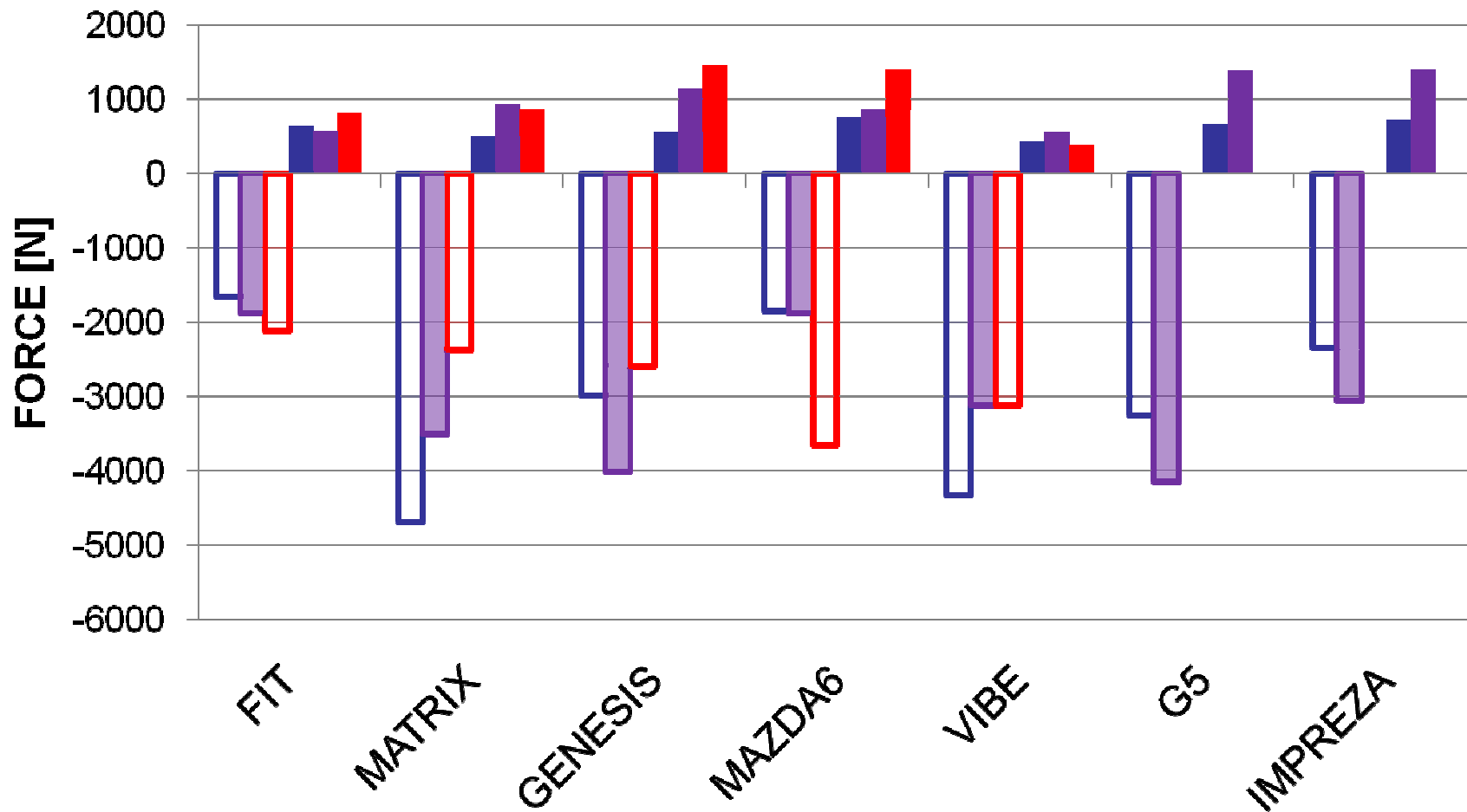
■ X ITRACC ■ X RibEye ■ X ES2-re
□ Y ITRACC □ Y RibEye □ Y ES2-re

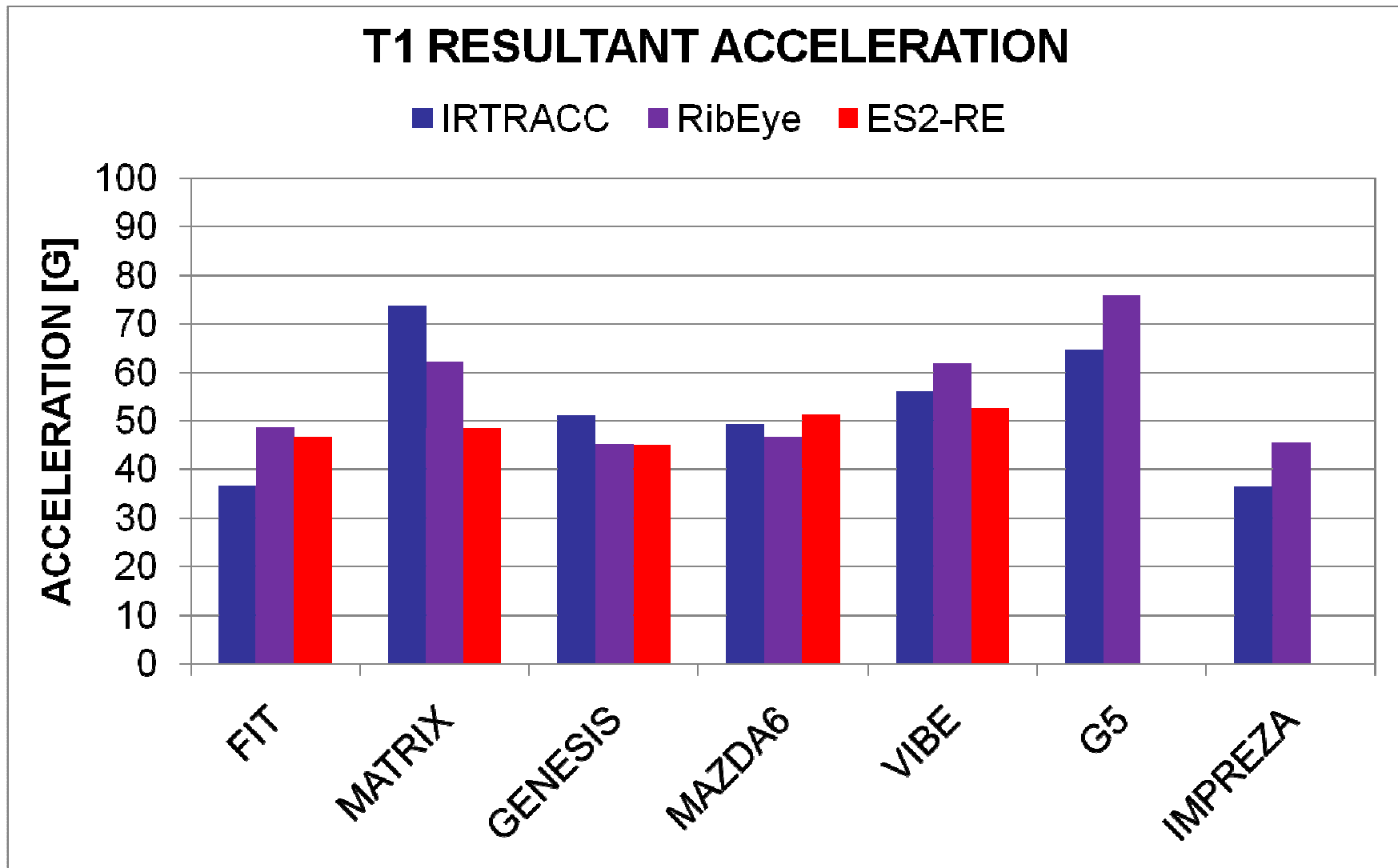


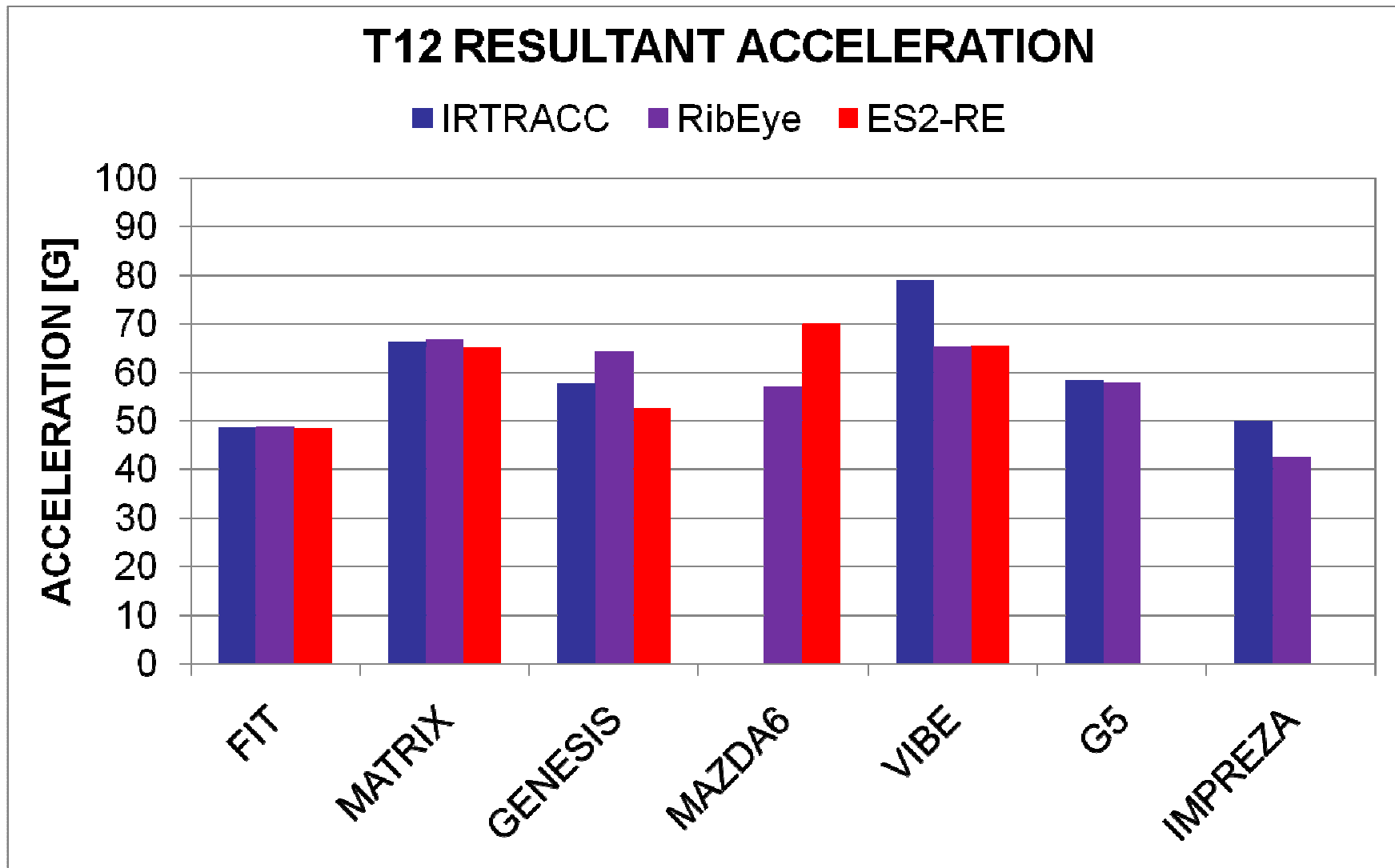


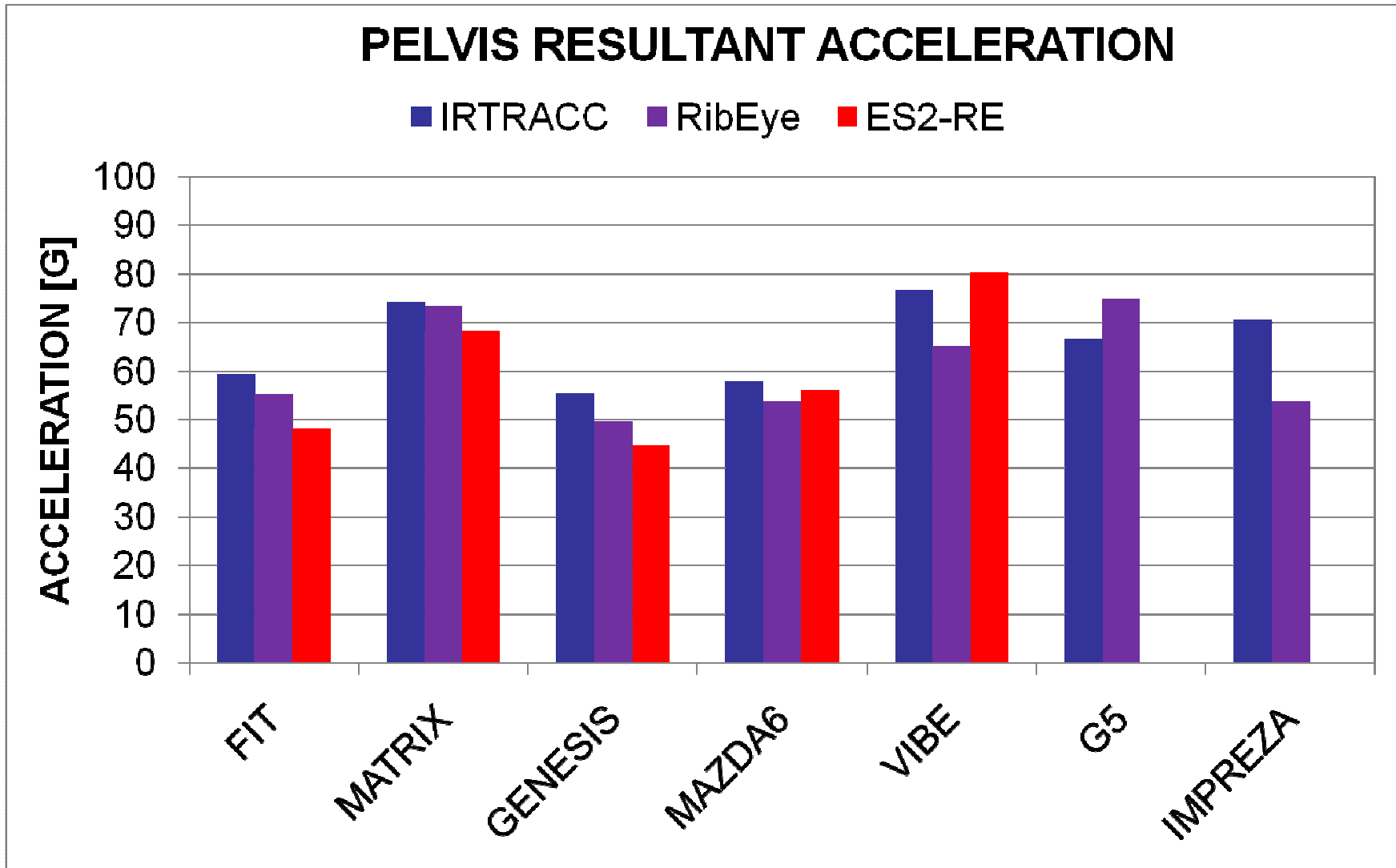
SHOULDER FORCE by COMPONENT

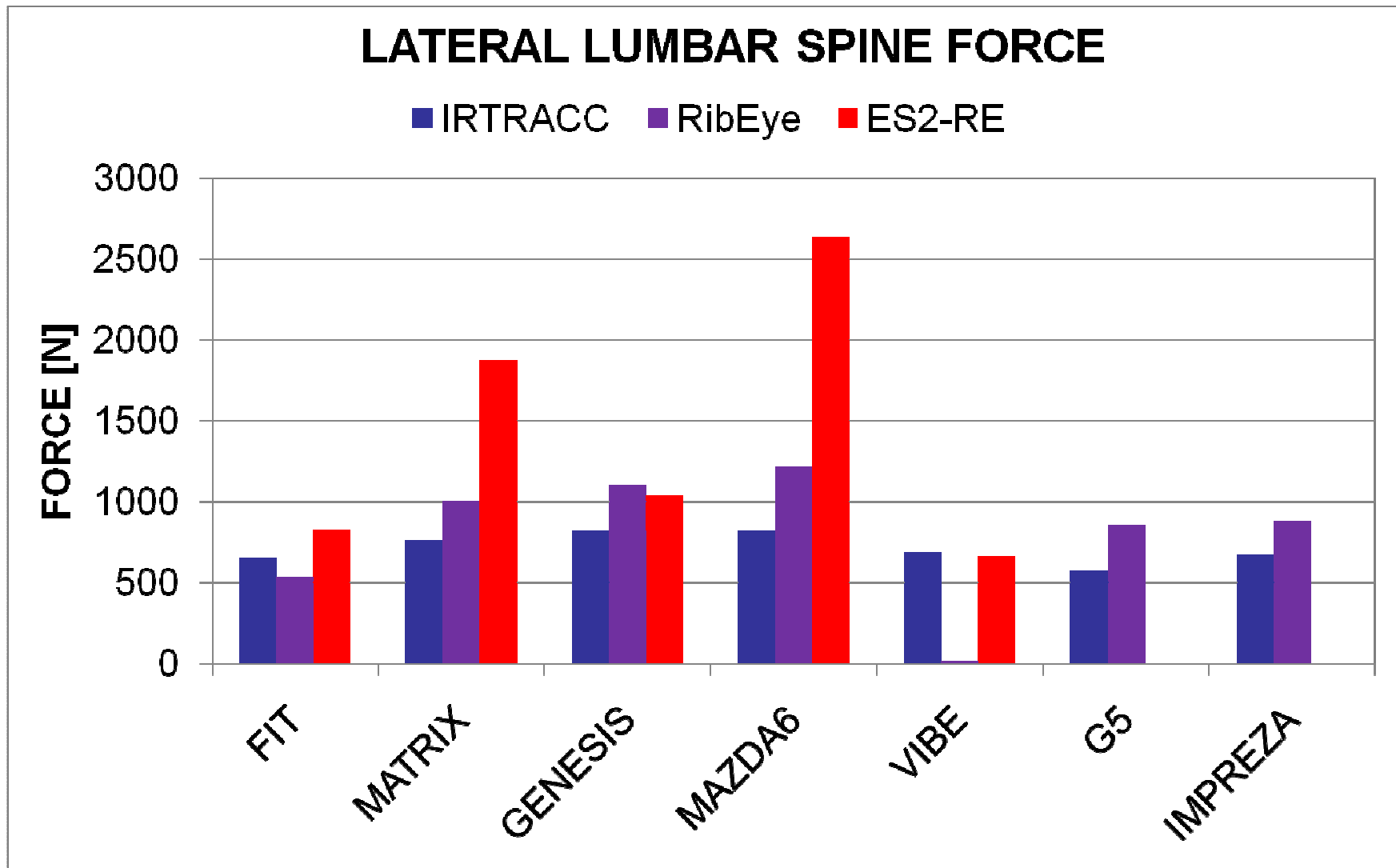
Y ITRACC Y RibEye Y ES2-re Z ITRACC Z RibEye Z ES2-re

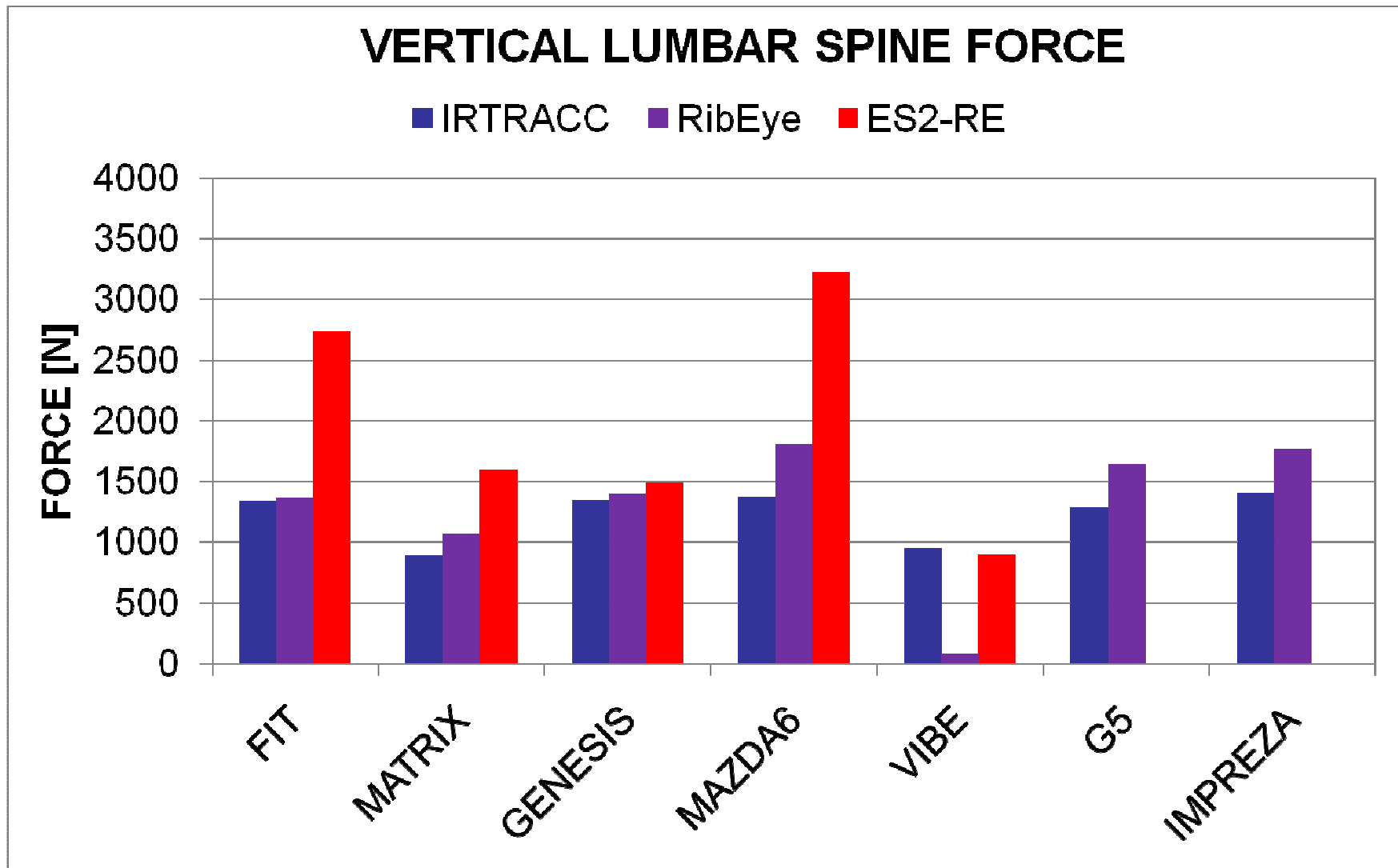






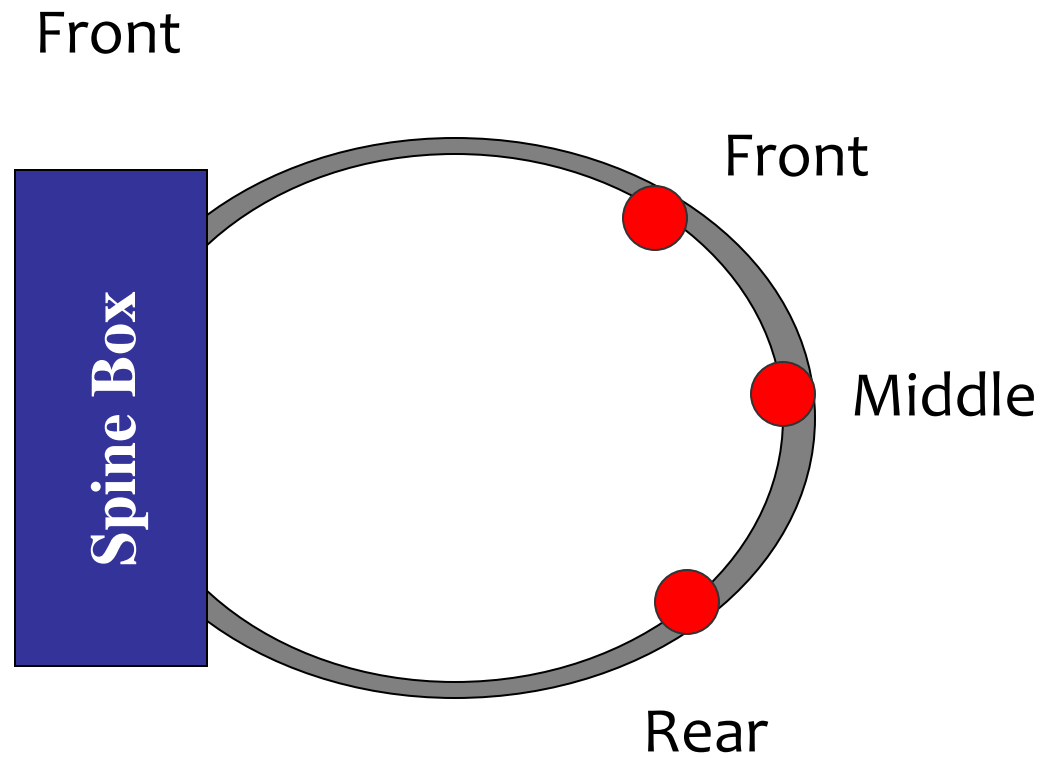






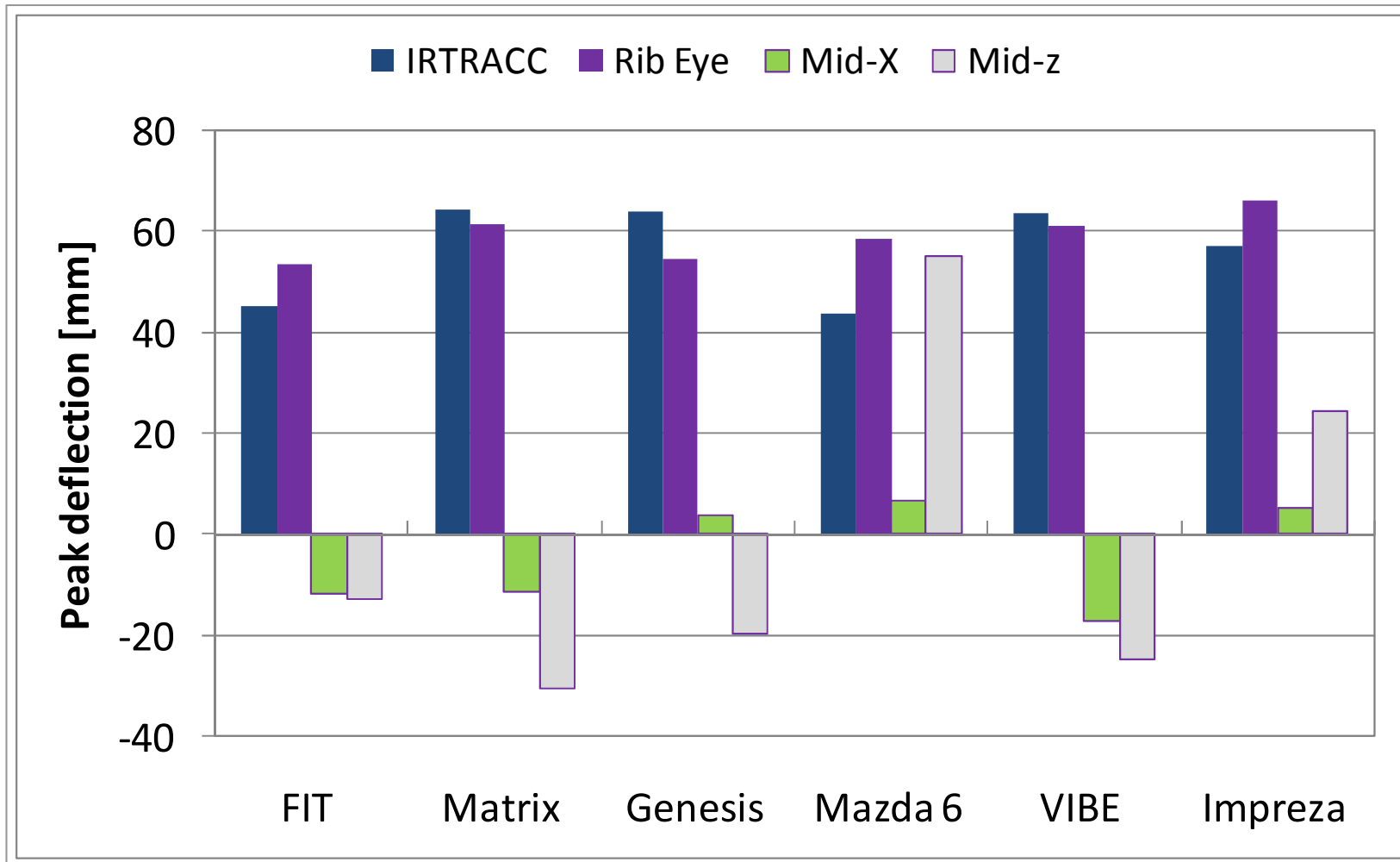


RibEye LED Configuration



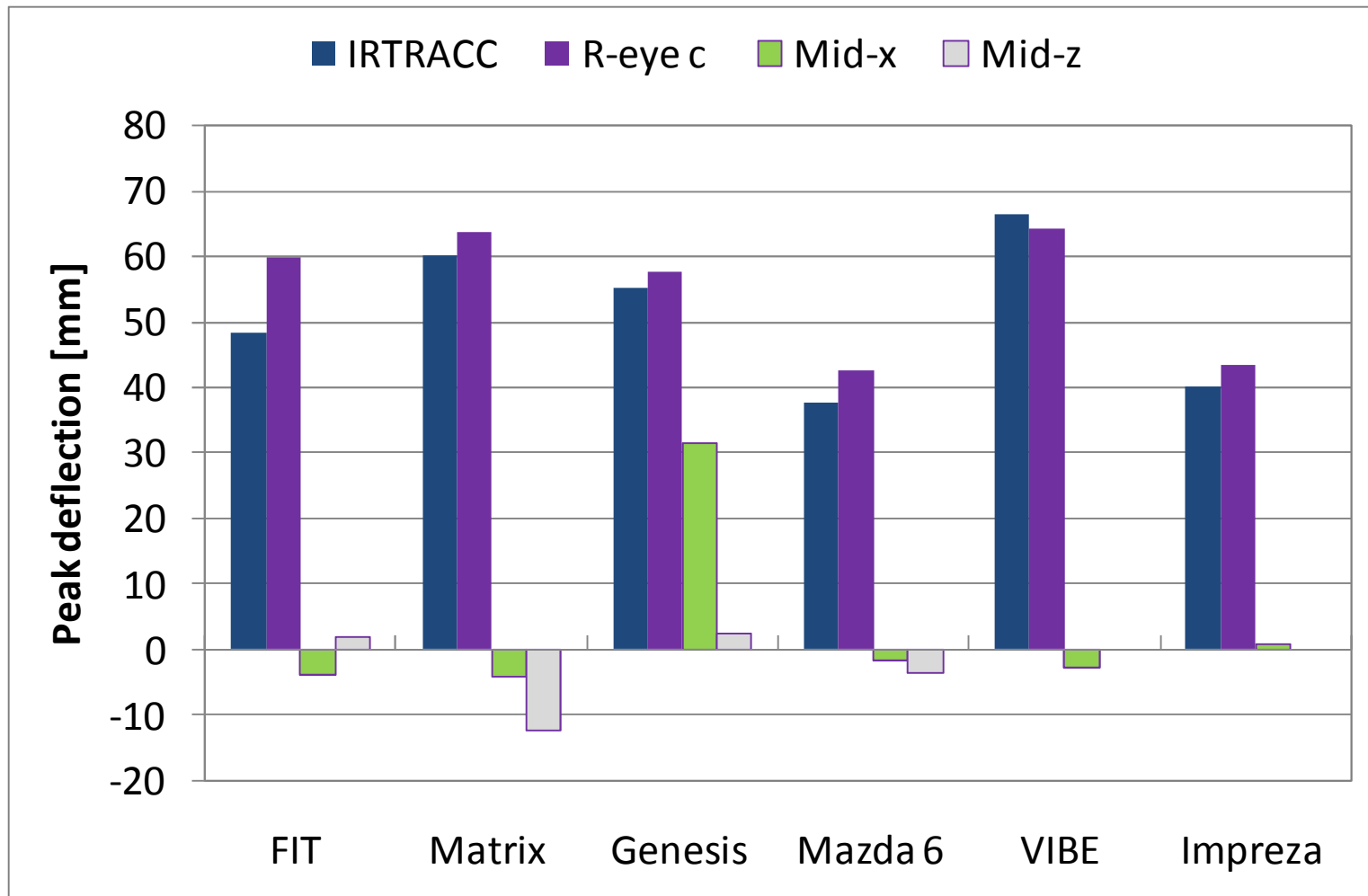


Shoulder Deflections



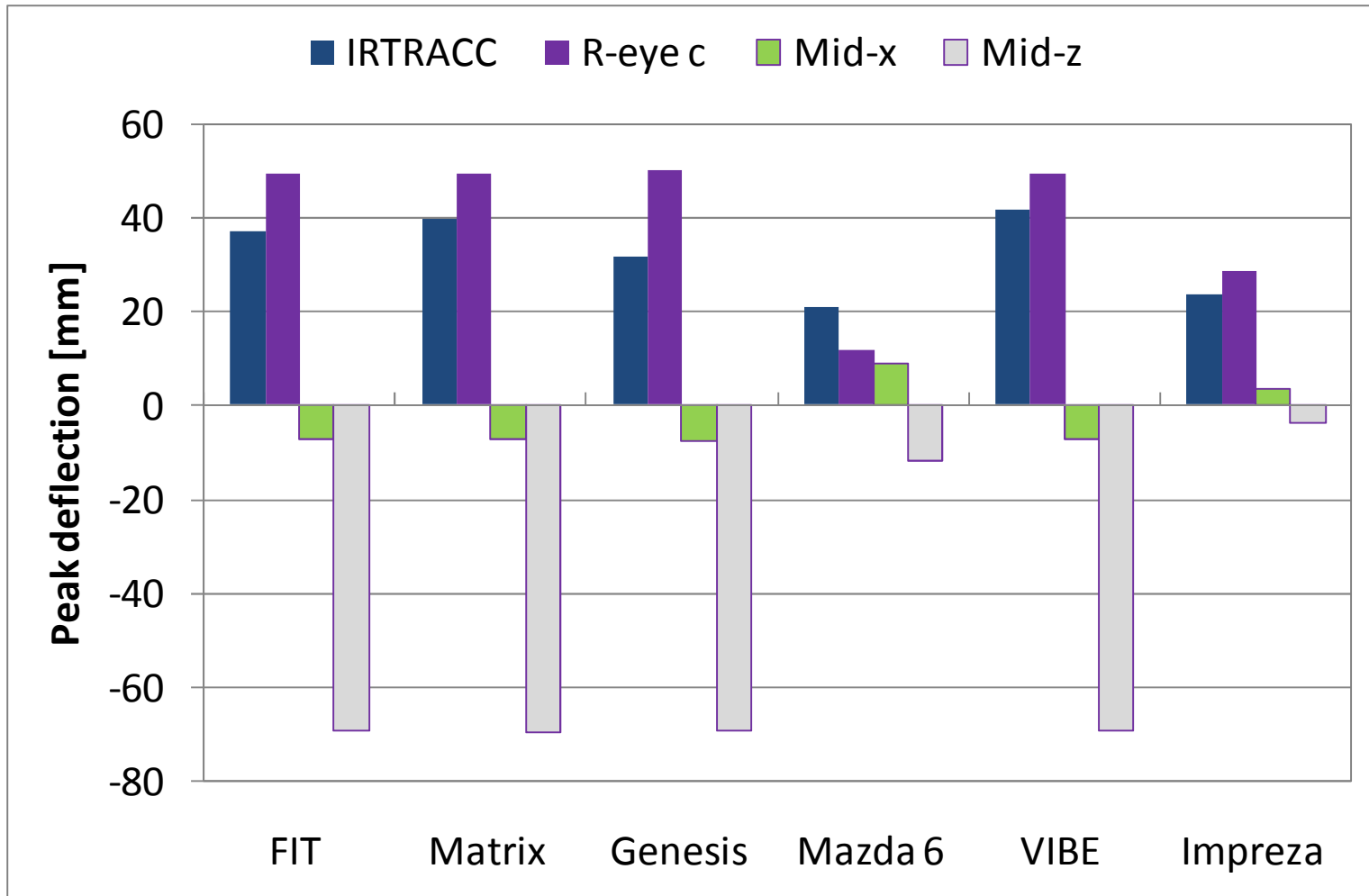


Rib 1 Deflections



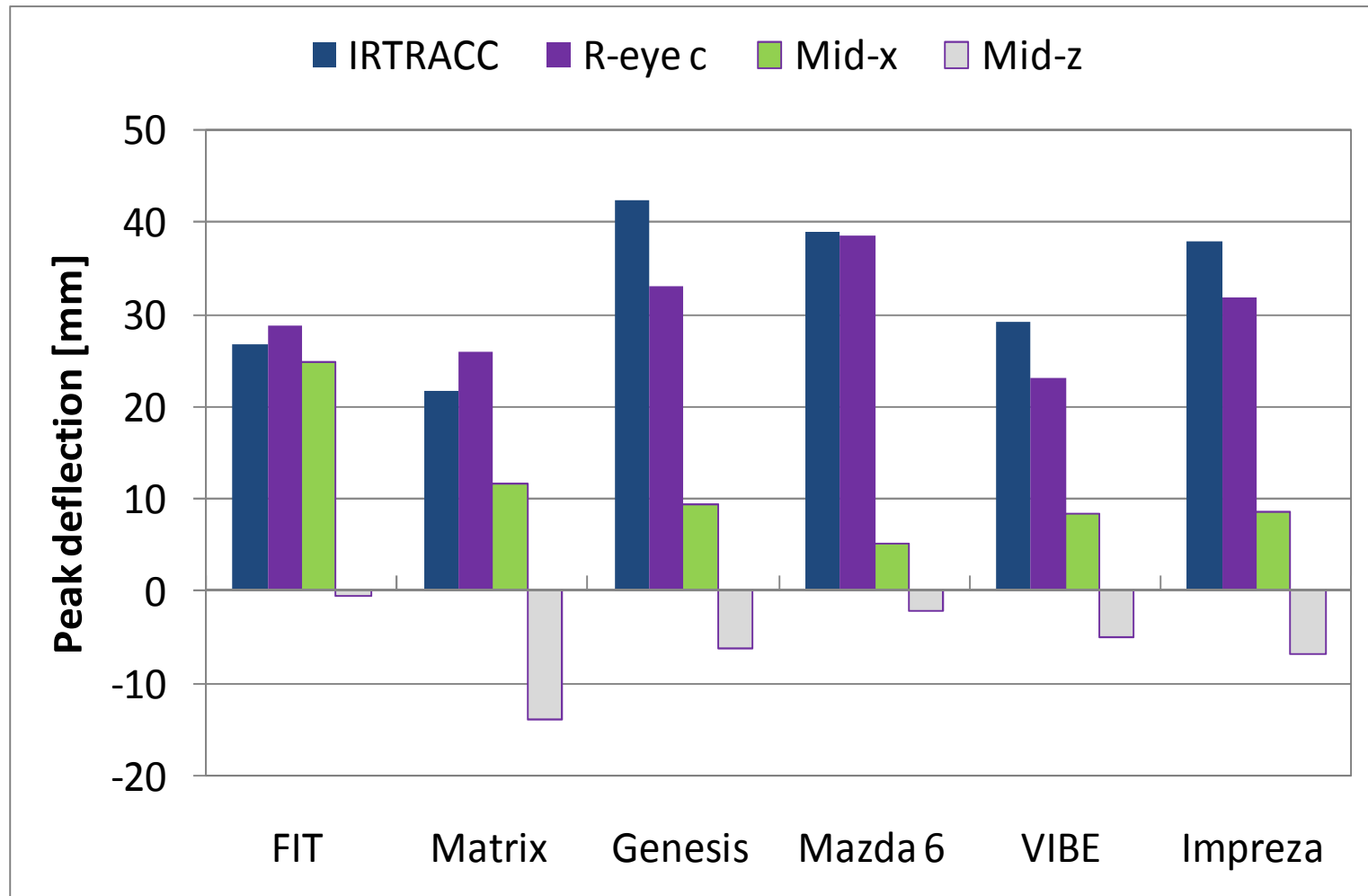


Rib 2 Deflections



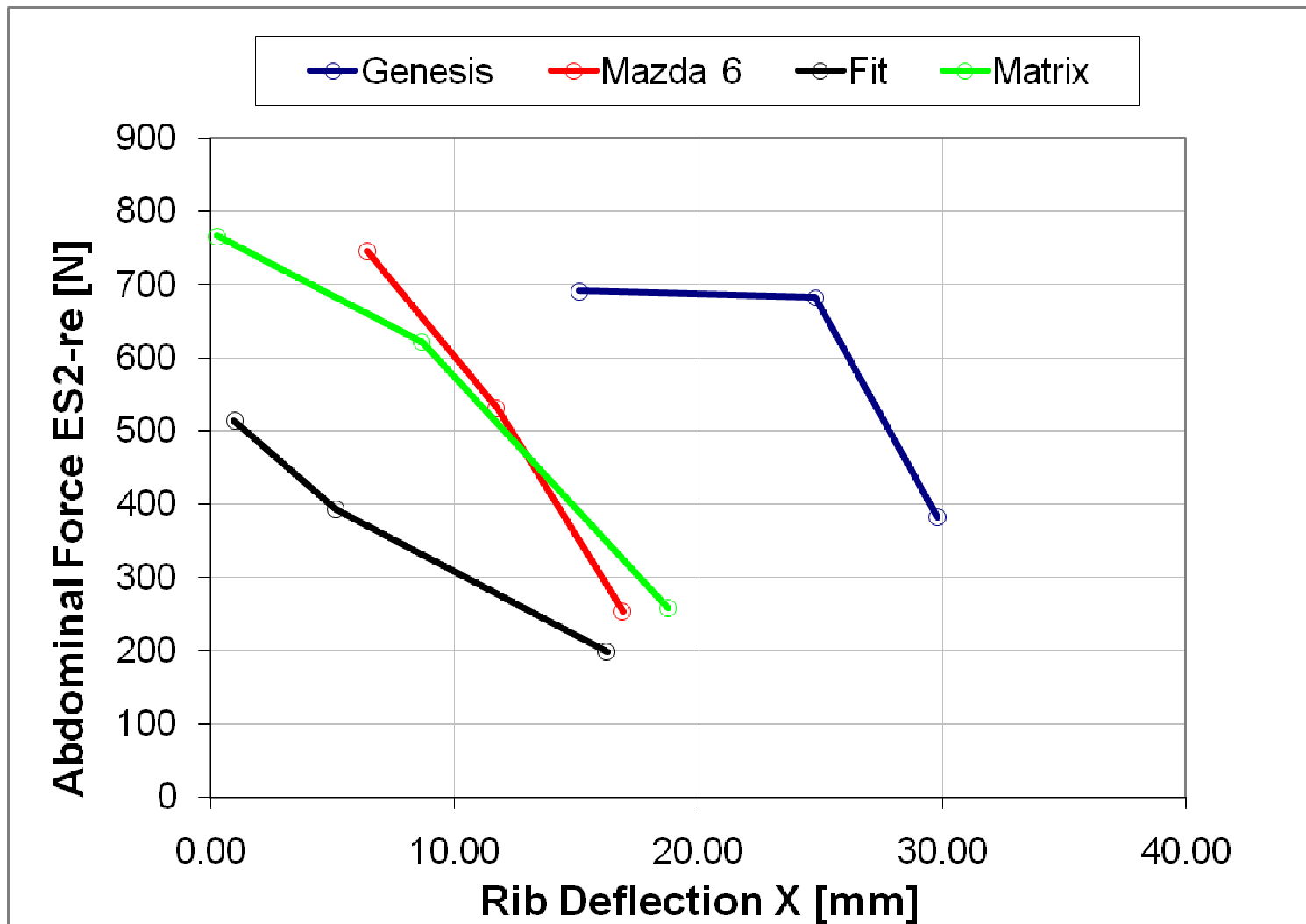


Rib 3 Deflections





Abdominal Force vs Rib 3 Deflection





Summary

- Much more analysis is needed
- Fine tuning of Rib Eye at shoulder and Rib 2
- Monitor permanent deformation