



Hybrid III 10-Year-Old Child

HIII-10C (Model 420-0000)



The Hybrid III 10-Year-Old (HIII-10C) was developed through the Society of Automotive Engineers Hybrid III Dummy Family Task Group in response to the NHTSA final rule to upgrade FMVSS 208 and the TREAD Act of November 2000. The HIII-10C is designed to evaluate the potential for injury from deploying air bag systems and booster seat designs. Denton ATD, Inc. has an active role in the HIII-10C design and development. Based on UMTRI child anthropometric data, the 10-Year-Old was chosen because it is the transitional size at which belt fit and seat design may be adequate and a booster/safety seat may no longer be necessary.

The HIII-10C incorporates more pelvic slouch than any of the other dummies in the Hybrid III family. The lower torso is a Hybrid III based design with the added feature of an adjustable lumbar. Slouch is a critical design feature because children not in booster seats tend to slouch to keep the backs of their knees from interfering with the front of the seat. In doing so, the pelvis angle is approximately 108° with respect to the thighs. Slots in the pelvic flesh allow placement of the legs at 90° to 118° relative to the pelvic bone. The head is a standard HIII-5F head assembly. The upper and lower torso, arms and legs were scaled from the HIII-5F. The neck is also a scaled HIII-5F design with a unique lower neck bracket load cell adjustable to 0°, 8°, 16°, and 23°. The shoulder clavicle and clavicle link is a one-piece load cell design. The upper torso features a sternum slider for a rotary potentiometer with accelerometer mounting positions on the sternum as well as the spine box. The IR-TRACC technology is available as optional equipment to measure sternum deflection.

Tilt Sensors :	QTY:
Head	2
Sternum	2
Pelvis	1

Accelerometers :	
Head	Ax, Ay, Az
Sternum-Upper	Ax
Sternum-Lower	Ax
Spine Box-Lower	Ax
Spine Box-Upper	Ax
T4	Ax, Ay, Az
Pelvis	Ax, Ay, Az

Denton Load Cells Available:	Model	QTY.
6-Channel Upper Neck	1716A	1
6-Channel Lower Neck with Adjustable Neck Bracket	5124J	1
2-Channel Shoulder , Pair	5123J	1
6-Channel Lumbar Spine	6251	1
2-Channel ASIS, Pair	3060	1
1-Channel Femur OR	2090	2
6-Channel Femur	2432	2
1-Channel Mid-Shaft Tibia OR	2090	2
6-Channel Mid-Shaft Tibia	2432	2

WEIGHTS:	Pounds (lbs)	Kilograms
Head	8.23	3.73
Neck	1.77	0.80
Upper Torso	17.94	8.14
Lower Torso	19.21	8.71
Upper Arm (right or left)	1.78	0.81
Lower Arm (right or left)	1.35	0.61
Hand (right or left)	0.38	0.17
Upper Leg (right or left)	5.90	2.68
Lower Leg (right or left)	4.92	2.23
Feet (right or left)	0.90	0.41
Total Dummy	77.61	35.20

DIMENSIONS:	Inches	Centimeters
Head Circumference	21.20	53.85
Head Breadth	5.60	14.22
Head Depth	7.20	18.29
Backline to Knee Pivot	16.70	42.42
Knee Pivot Height	15.0	38.10
Hip Pivot From Backline	5.44	13.82
Hip Pivot Height	3.31	8.41
Sitting Height	28.20	71.63

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