



**HELMETS**

**Advanced Impact Defense**

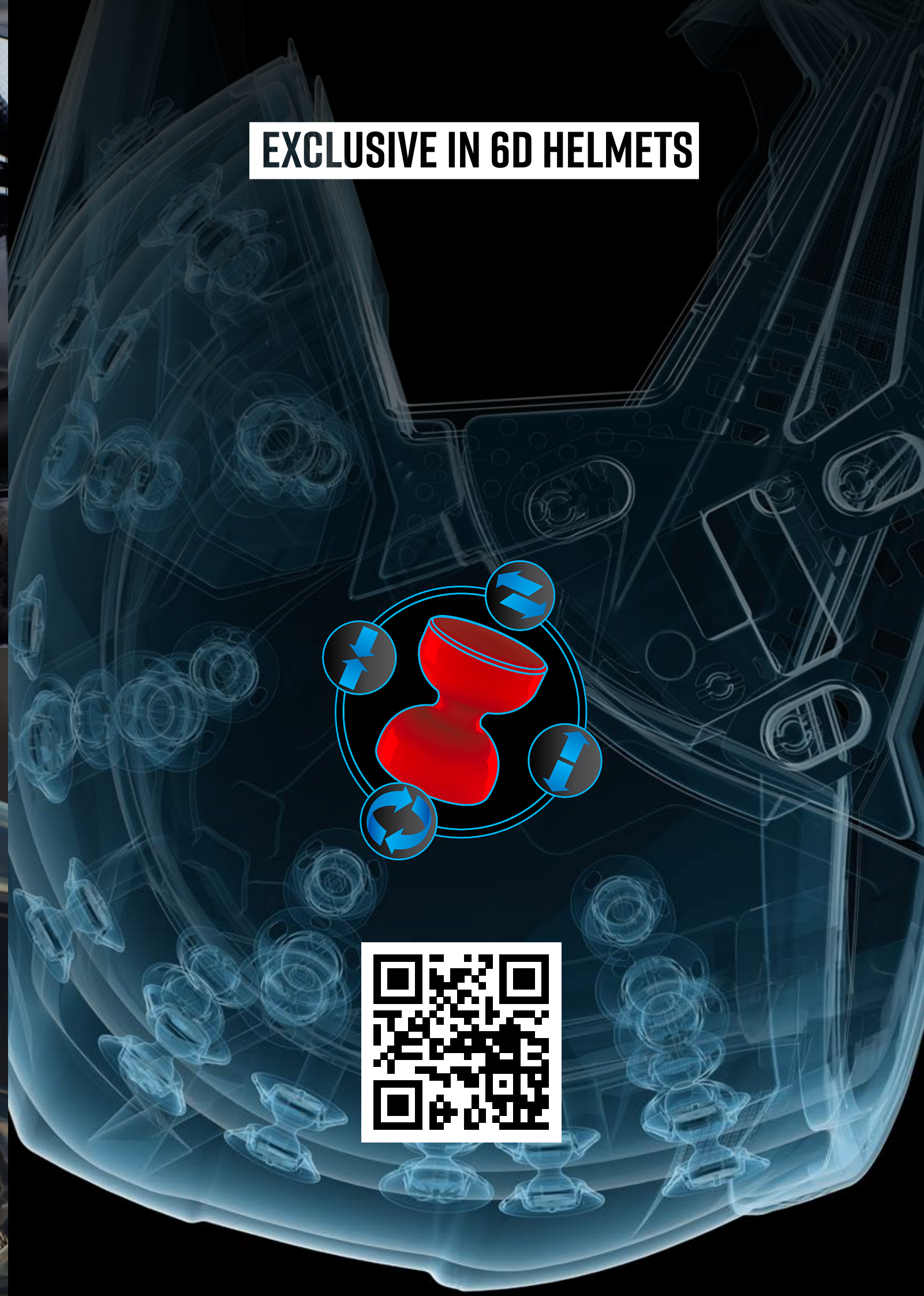


**2021  
PREBOOK**





EXCLUSIVE IN 6D HELMETS







# SUPERIOR PERFORMANCE

## OMNI-DIRECTIONAL SUSPENSION

6D's revolutionary Omni-Directional Suspension Technology (ODS) has single-handedly inspired the helmet industry to get serious about improving helmet safety. Today, a few manufactures have responded with improved offerings, while others have ignored the opportunity to improve their helmets all together.

6D's ODS technology was awarded the Grand Prize in the NFL's Head Health Challenge III because of its ability to reduce energy transfer to the brain by means of its suspended dual-liner system.

## EDUCATION IS KEY

Explore the benefits of ODS and how it compares to traditional helmet designs as well as the emerging technologies from other manufacturers. 6D's patented ODS system is not constrained by the shape of the human head (*unlike every other system that is mated to the inner surface of the helmet liner including MIPS, Flex, Turbo 360, LDL, Meds, Fluid, Rheon, Conehead, etc.*), and it is the only technology providing significant reductions in angular acceleration while simultaneously reducing low-threshold energy transfer to the brain.

## WORLD WIDE PATENTS

United States US 8,955,169 B2

United States US 9,820,525

Europe E2 672 853 B1

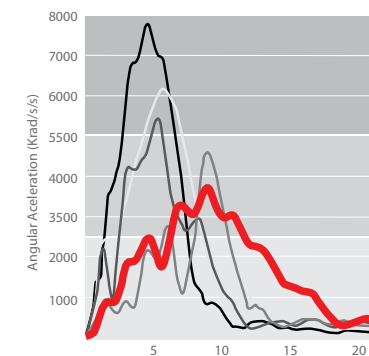
China ZL 201280017579.1





LUCIANO BENAVIDES / Red Bull KTM

# SUPERIOR PROTECTION



## ANGULAR ACCELERATION

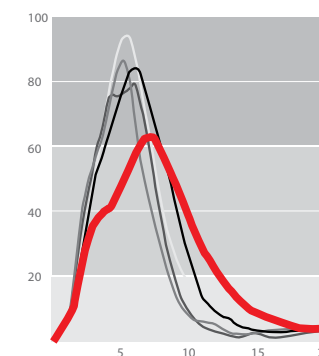
Angular acceleration (*rotational force from oblique-angle impacts*) is the primary cause of concussion.

Traditional helmets are directly 'coupled' to the head preventing any ability to mitigate angular acceleration.

ODS 'uncouples' the helmet from the head. The suspended dual-liner shears omni-directionally when subjected to oblique impacts reducing the transfer of angular acceleration forces to the head and brain.

Angular 7.5m/s Front / Incline Anvil

●●● Other Technology Helmets ● MIPS ● 6D ATR-2/ODS



## LOW-THRESHOLD ENERGY

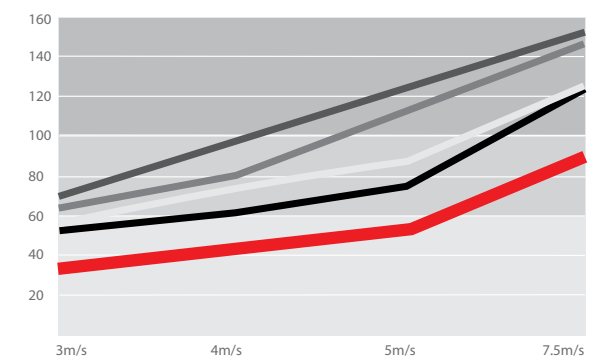
The majority of accidents qualify as low-threshold energy impacts; below certification pass/fail velocities, but severe enough to sustain a concussion.

Even minor concussions have serious long-term effects. Repetitive low-velocity impacts are cumulative causing buildup of tau proteins and deterioration of the brain.

To meet high-velocity certification requirements, traditional helmets and helmets incorporating add-in shear plane technologies such as MIPS are still too stiff to effectively absorb energy from impacts at lower velocities.

ODS starts working the instant any force is applied to the shell, dramatically reducing this low-threshold energy.

Linear 4m/s Side / Incline Anvil



## BROAD RANGE PROTECTION

ODS consistently outperforms competitive designs across the entire range of potential impact velocities. 6D engineers the shell, ODS liners and damper systems to provide the best possible impact mitigation performance across all impact velocities for both angular and linear accelerations.

Linear Front / Incline Anvil

## TIME-TO-PEAK (TTP)

TTP is how long it takes the energy of an impact to reach maximum G-force. Deceleration time is the single most beneficial component in reducing the severity of any impact - the more time, the less energy transferred. ODS simply provides more time.

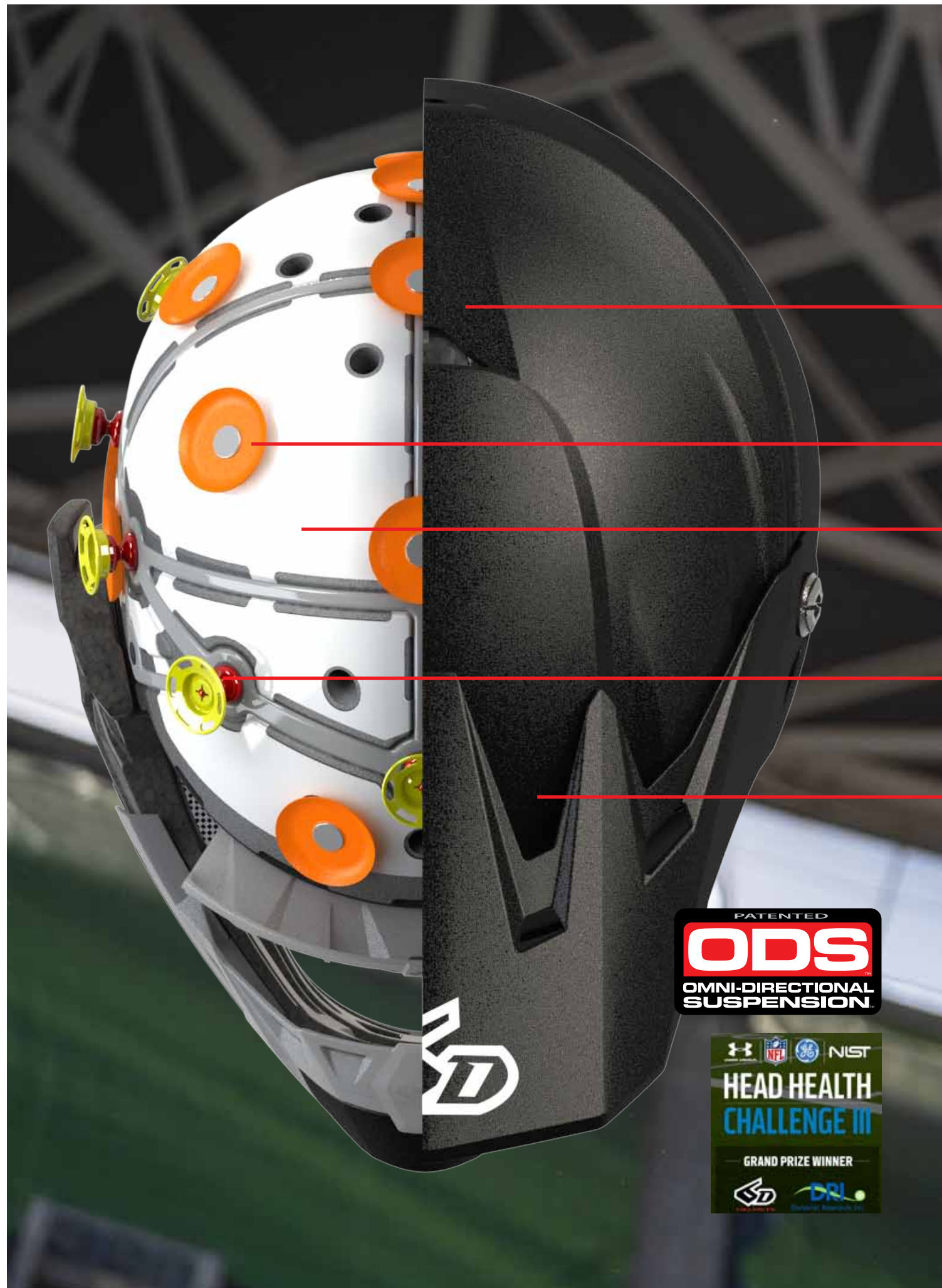
ANGULAR  
ACCELERATION



LOW-THRESHOLD  
ENERGY







#### THE ATR-2 / NEXT LEVEL BRAIN PROTECTION.

- ODS reduces energy transfer to the brain by means of its suspended inner liner
- ODS uncouples the inner liner from the outer liner and shell assembly
- ODS reduces both angular and linear accelerations, at all impact velocities and all impact angles
- ODS significantly improves low-threshold impact mitigation
- ODS is rebuildable in select models

#### MULTI-IMPACT OUTER EPP (Expanded Polypropylene) LINER

6D strategically positioned the multi-impact EPP outer liner against the helmet shell's inner surface. An exceptional energy absorption material, the EPP was specifically engineered with islands of EPP 'Damping Towers' to assist in progressive loading of the ODS system during impacts. The multi-impact capability of the EPP is one of the key elements that allows the rebuilding\* of the ATR-2 after a moderate to severe impact. *\*Provided the helmet's shell is not compromised from the impact event.*

#### LOW-FRICTION DISKS

Multiple smooth disks top the damping towers to reduce friction under loading thereby assisting in angular acceleration mitigation.

#### REPLACEABLE INNER EPS (Expanded Polystyrene) LINER

The inner EPS liner is the first layer of defense and a very important component of the new advanced ODS design. It is effectively a helmet within a helmet. It has its own in-molded PVC (Polyvinyl Chloride) shell that serves many functions. It nests into the ODS carrier, provides strength and integrity to the EPS, and serves as a slippery surface to aid in reducing angular acceleration forces. The EPS is of a softer density than the EPP and is secured into the helmet with 4 locking pins that mate to the ODS carrier. It is also captured by the Chin Bar EPP which provides additional security.

#### ELASTOMERIC ISOLATION DAMPERS

An array of Isolation Dampers connect the ODS carrier to the outer EPP liner and work in unison to isolate impact energy from the brain. The elastic properties of the dampers, combined with their unique shape provide a progressive spring rate that assists in managing low-threshold energy. The hour glass shape and elastic property also work to manage the 3-dimensional displacement of the inner liner.

#### OPTIMIZED SHELL DESIGN

The 6D concept of 'Optimized Shell Design' does not define one element, but a system where multiple materials work together, in concert, to provide greater protection and energy management. The shell must have the structural integrity to prevent penetration, but it should not be overly stiff or rigid either. An overly stiff and rigid shell can seriously compromise the helmet's energy management potential.

# SUPERIOR TECHNOLOGY





# ATR-1



# ATR-2



## FEATURES

- PATENTED ODS (Omni-Directional Suspension) Technology
- SHELL – A proprietary woven blend of advanced aerospace carbon fiber, composite fibreglass, and Kevlar
- NEW VISOR – Improved durability and visibility.
- NEW PC HALO – Improves the durability of inner EPS liner and overall performance
- AIRFLOW MANAGEMENT – 8 intake ports, 13 transfer ports, and 4 aggressive exhaust ports
- REAR DELTA-VENT – Aids heat transfer by scavenging air.
- COMFORT LINER – Genuine CoolMax™ anti-bacterial fabric
- EMERGENCY RELEASE CHEEK PADS
- SHEAR-AWAY VISOR SCREWS
- ROOST GUARD – Provides additional face protection
- CLAVICAL CUT-AWAY – Provides increased clavicle clearance without sacrificing strength
- STERNUM PAD – Provides added protection of the chin, jaw and sternum.
- EXCEEDS ECE, DOT, AU and AC standards.
- WEIGHT: +/- 1,590 grams.



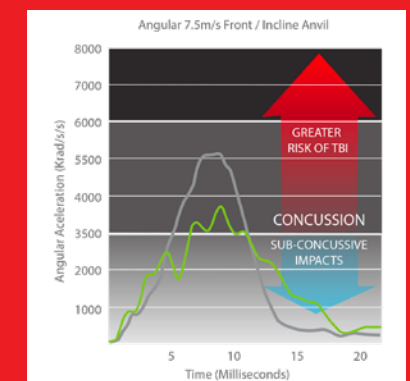
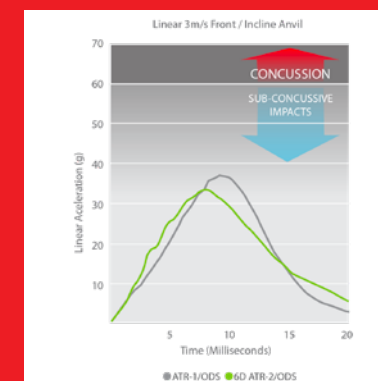
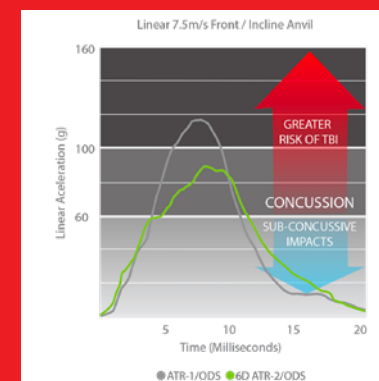
## FEATURES

- Rebuildable Advanced ODS System:
- Replaceable inner EPS liner
- Multi-Impact outer EPP liner
- Progressive EPP Damping Towers
- Low-Friction disks
- Isolation dampers
- Increased ODS (Omni-Directional Suspension) displacement travel (+30%)
- Improved linear and angular acceleration mitigation
- Optimized lightweight tri-composite shell
- 3 Shell Sizes
- Cervical protection zone at the lower rear shell area
- Brow rib increases shell integrity above the eyeport
- Clavicle cut-away
- 9 intake ports and 6 exhaust ports work in unison with the Air Gap Ventilation System
- Helmet General Features:
- Removable, washable comfort liner features Genuine Dri-Lex® anti-bacterial fabric
- Emergency Quick-Release cheek pads
- PU-Over moulded EPP lined chin bar includes 6D's exclusive Sternum Pad
- Goggle band integrated shell recess at the eyeport area improves goggle fit and seal
- Shear-Away visor screws
- Nose Guard provides improved roost protection
- Titanium D-Rings
- Lighter overall weight +/- 1480 grams/ 3.26 lbs. (Size MD)
- Exceeds DOT, ECE, AC and ASTM Standards



## ATR-1 vs ATR-2

The new ATR-2 with advanced ODS provides substantial improvements in performance over the current ATR-1 across the entire range of energy demands; low, mid, and high velocity accelerations for both linear and angular accelerations.





ATR-1

**PREBOOK**

MOTO

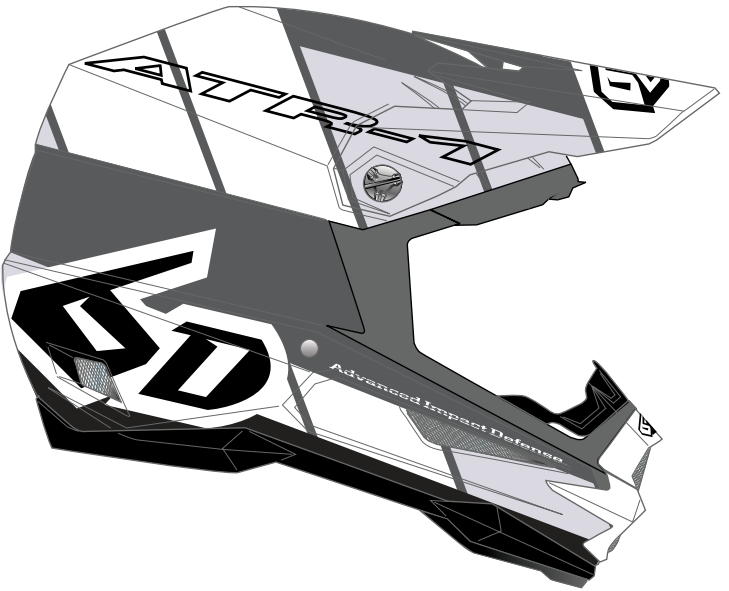
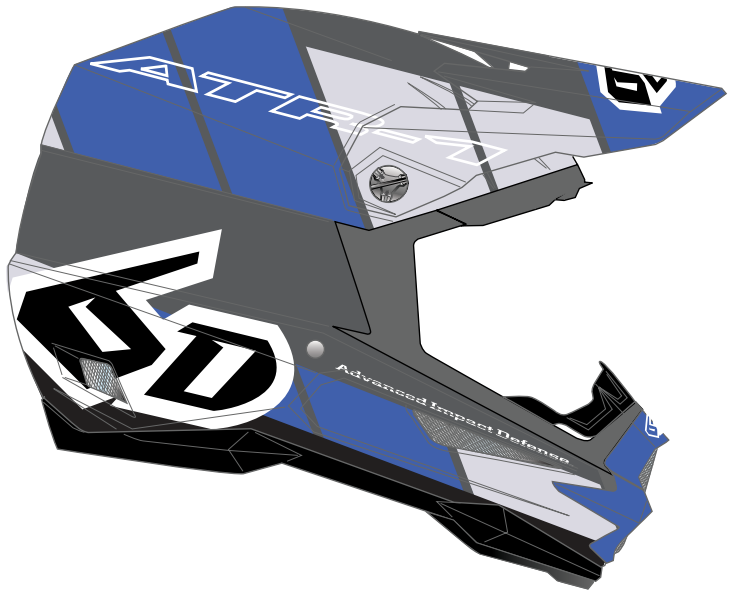




ATR-1

SHEAR

2021 PREBOOK

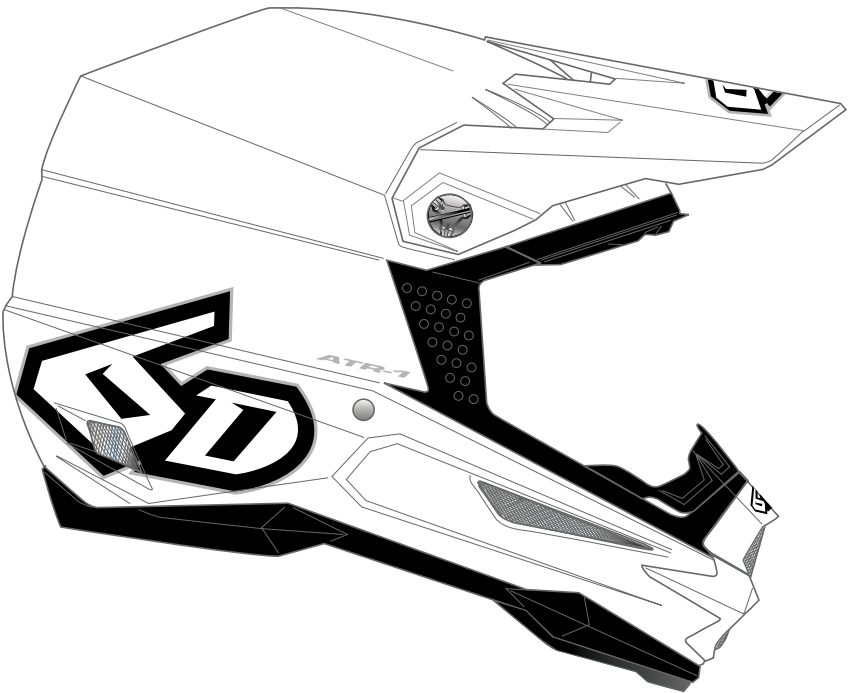


ATR-1 HELMET SHEAR	XS	S	M	L	XL	XXL	VISOR
WHT GRY BLK	1122555	1122556	1122557	1122558	1122559	1122560	1122620
BLU GRY BLK	1122561	1122562	1122563	1122564	1122565	1122566	1122621
NEON ORG GRY BLK	1122567	1122568	1122569	1122570	1122571	1122572	1122622

ATR-1

SOLID

2021 PREBOOK



ATR-1 HELMET SOLID	XS	S	M	L	XL	XXL	VISOR
SOLID MATTE BLACK	1122543	1122544	1122545	1122546	1122547	1122548	1122618
SOLID GLOSS WHITE	1122549	1122550	1122551	1122552	1122553	1122554	1122619



ATR-2

PREBOOK



MOTO



ATR-2

MERGE

2021 PREBOOK



ATR-2 HELMET MERGE	XS	S	M	L	XL	VISOR
WHT GRY BLK	1122522	1122523	1122524	1122525	1122526	1122608
RED GRY BLK		1122527	1122528	1122529	1122530	1122609
NEON ORG GRY BLK		1122531	1122532	1122533	1122534	1122610
NEON YEL GRY BLK		1122535	1122536	1122537	1122538	1122611

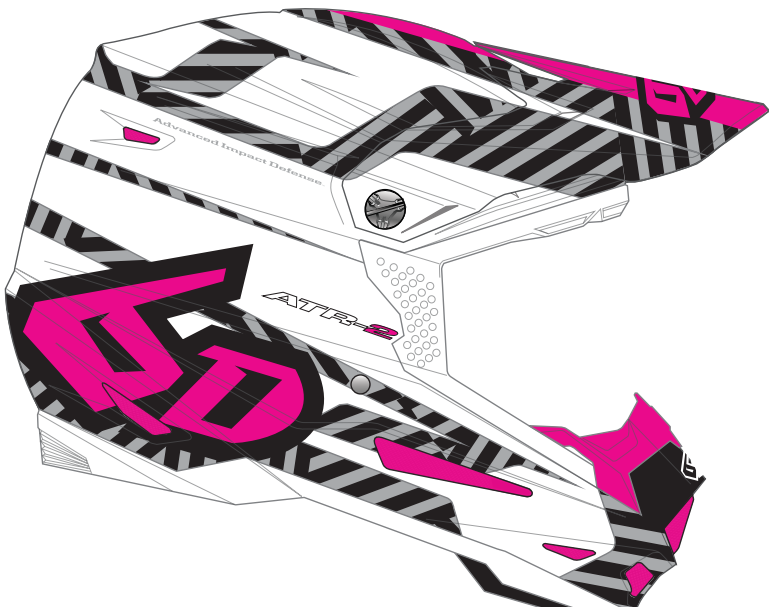
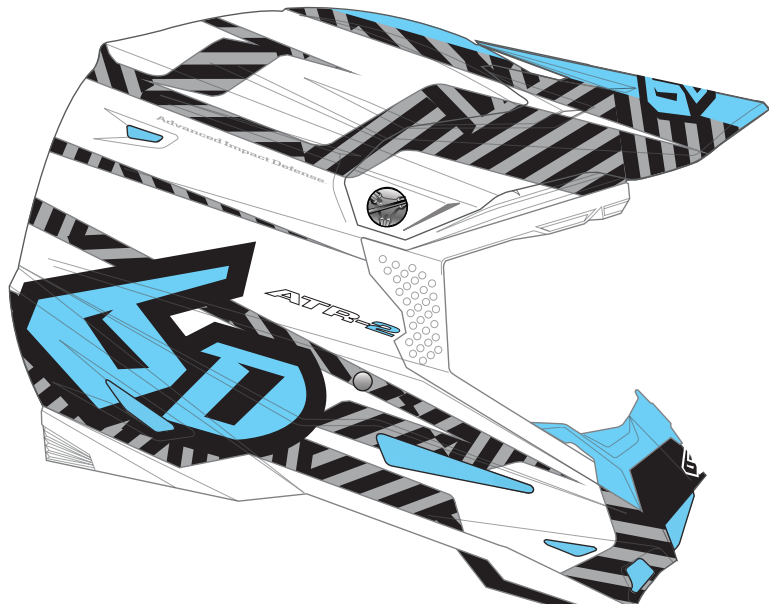




ATR-2

HAVOC

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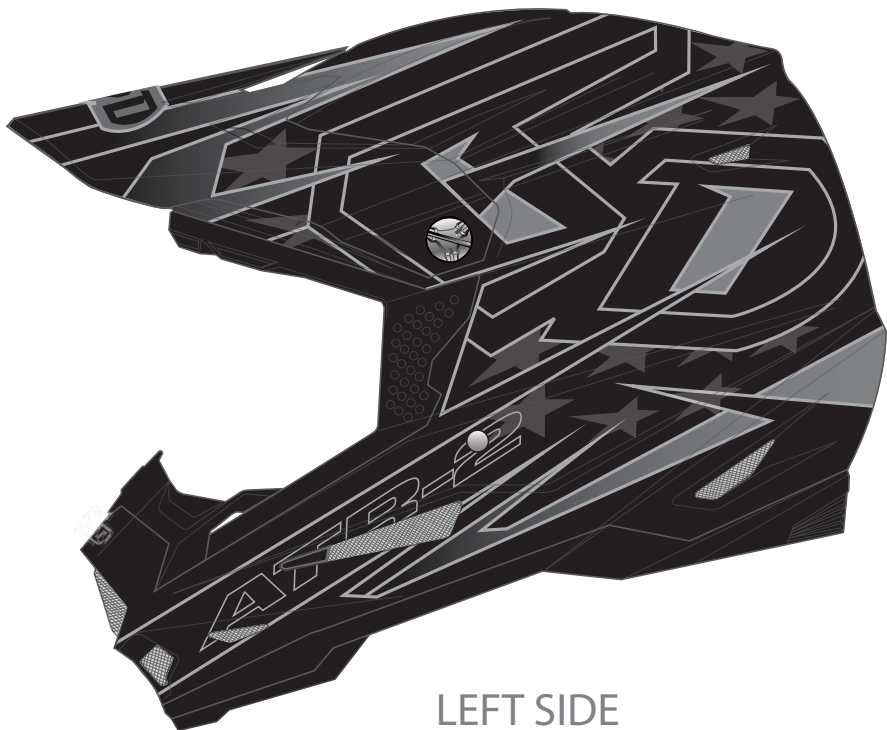
ATR-2 HELMET HAVOC	XS	S	M	L	XL	XXL	VISOR
ELECTRIC BLUE	1122484	1122485	1122486	1122487	1122488	1122489	1122601
NEON PINK	1122494	1122495	1122496				1122602
NEON ORANGE	1122501	1122502	1122503	1122504	1122505	1122506	1122603







RIGHT SIDE



LEFT SIDE

ATR-2 HELMET SUPER PATRIOT	S	M	L	XL	VISOR
SUPER PATRIOT BLACK	1122539	1122540	1122541	1122542	1122612





ATR-2

QUADRANT

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ATR-2 HELMET QUADRANT	XS	S	M	L	XL	VISOR
CHARCOAL GRY BLK	1122507	1122508	1122509	1122510	1122511	1122604
BLU GRY BLK		1122512	1122513	1122514	1122515	1122605
NEON ORG GRY BLK		1122516	1122517	1122518	1122519	1122606
NEON YEL GRY BLK			1122520	1122521		1122607

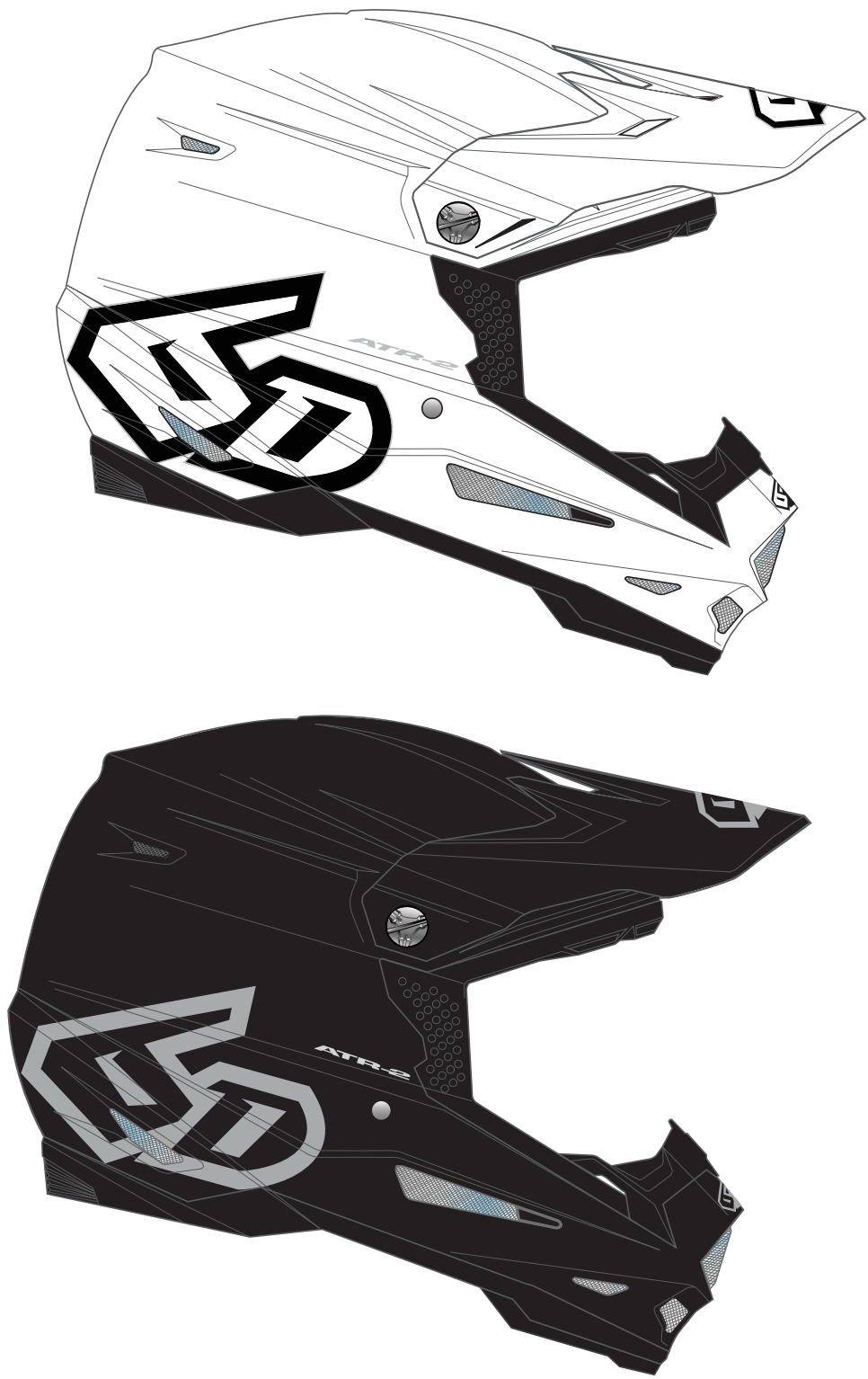




ATR-2

SOLID

2021 PREBOOK



ATR-2 HELMET SOLID	XS	S	M	L	XL	XXL	VISOR
SOLID MATTE BLACK	1122464	1122465	1122466	1122467	1122468	1122469	1122599
SOLID GLOSS WHITE	1122474	1122475	1122476	1122477	1122478	1122479	1122600

ATR-2Y

2021  
PREBOOK

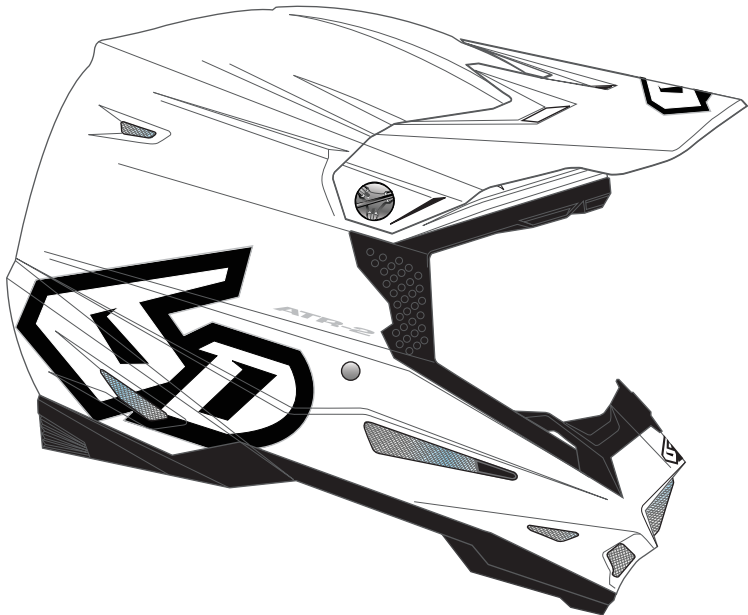
YOUTH



ATR-2Y

SOLID

2021 PREBOOK



ATR-2Y

HAVOC

2021 PREBOOK



ATR-2Y YOUTH HELMET SOLID	YS	YM	YL	YXL	VISOR
SOLID GLOSS WHITE	1122470	1122471	1122472	1122473	1122614
SOLID MATTE BLACK	1122460	1122461	1122462	1122463	1122613

ATR-2Y HELMET HAVOC	YS	YM	YL	YXL	VISOR
ELECTRIC BLUE	1122480	1122481	1122482	1122483	1122615
NEON PINK	1122490	1122491	1122492	1122493	1122616
NEON ORANGE	1122497	1122498	1122499	1122500	1122617



# ATS-1R STREET

NOW AVAILABLE  
IN AUSTRALIA





ATS-1R

2021  
PREBOOK

STREET







ATS-1R HELMET SOLID	XS	S	M	L	XL	XXL
SOLID GLOSS BLACK	1122573	1122574	1122575	1122576	1122577	1122578
SOLID GLOSS WHITE	1122579	1122580	1122581	1122582	1122583	1122584
SOLID MATTE BLACK	1122585	1122586	1122587	1122588	1122589	1122590
SOLID GLOSS CEMENT GREY		1122591	1122592	1122593	1122594	
SOLID GLOSS SILVER		1122595	1122596	1122597	1122598	







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