

Porsche Teens Aerodynamics

MANGA, AN INFLUENTIAL STYLE OF COMICS FROM JAPAN, INSPIRES THE THIRD INSTALLMENT OF PORSCHE TEENS. COMIC HEROES CAN DO ANYTHING—EVEN FIND THEIR WAY INTO PORSCHE'S WEISSACH DEVELOPMENT CENTER!

AS PART OF THEIR RESEARCH FOR A PAPER ON AIR RESISTANCE, BEN AND YUMI VISIT THEIR UNCLE TIM AT THE WIND TUNNEL.

HA! LOOK AT MY AERODYNAMIC FACE, YUMI!

THIS IS SO AWESOME!

Ooooooh

WOWWWWWW!

CUT IT OUT, BEN!

WHY?

I CAN'T CONCENTRATE ON OUR PAPER IF YOU'RE GOOFING OFF ALL THE TIME.

EVERYTHING OK, YOU TWO?

TAP

TIM STARCK WORKS IN THE PORSCHE DEVELOPMENT DEPARTMENT.

HOW DO YOU LIKE OUR WIND TUNNEL? HAVE YOU BEEN LEARNING ABOUT AERODYNAMICS?

HI UNCLE TIM!

IT'S GREAT HERE!

BUT THERE'S STILL A LOT I DON'T UNDERSTAND.

CAN YOU EXPLAIN IT TO US?

SURE!

IT'S KIND OF COMPLICATED, SO I'VE PREPARED A LITTLE PRESENTATION.

Airflow Off

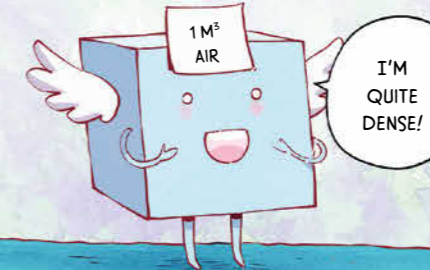
CLICK

WHEEEEE

BY MELANIE SCHOBER



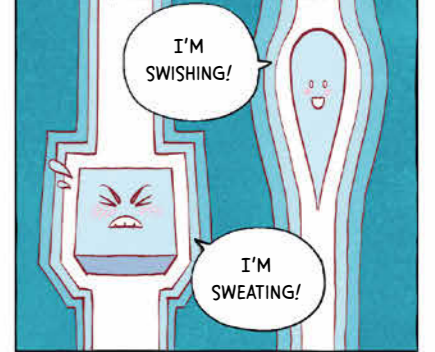
AERODYNAMICS LOOKS AT HOW SOLID BODIES ARE AFFECTED BY THE FLOW OF AIR. A BODY THAT MOVES RAPIDLY THROUGH AIR NEEDS SUFFICIENT FORCE ON ACCOUNT OF THE AIR DENSITY.



I'M QUITE DENSE!

AERODYNAMICS: AER (GREEK FOR "AIR") + DYNAMIS (GREEK FOR "POWER")

DIFFERENT BODIES HAVE DIFFERENT LEVELS OF DRAG. A DROP GLIDES EASILY THROUGH THE AIR.



I'M SWISHING!

I'M SWEATING!

THAT'S WHY THE PORSCHE 911 TURBO S HAS SUCH A FLAT, STREAMED SILHOUETTE AND HARDLY ANY EDGES.

THIS CAR ALSO HAS ADAPTIVE AERODYNAMICS. ITS FRONT SPOILER AND REAR WING ARE EXTENDABLE AND CAN REDIRECT THE AIR IN TARGETED WAYS.

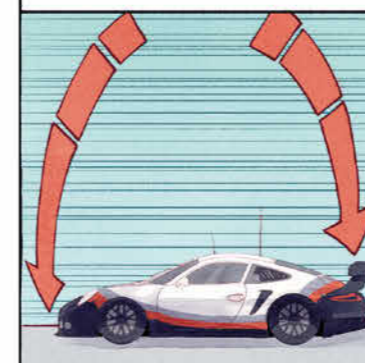


REAR WING

FRONT SPOILER

THE FRONT SPOILER AND REAR WING CONTROL THE FLOW OF AIR. THE 911 TURBO S CAN DRIVE WITH MINIMAL DRAG, OR ITS EXTENDED SPOILER AND WING CAN USE THE AERODYNAMIC FORCE TO PUSH THE CAR ONTO THE ROAD. THAT'S CALLED DOWNFORCE. THE AERODYNAMIC FORCE CAN ALSO SUPPORT BRAKING. WE CALL THAT AIR BRAKING. THE SPOILER AND WING ARE AUTOMATICALLY POSITIONED TO GENERATE GREATER DRAG AND DOWNFORCE.

A RACE CAR LIKE THE 911 RSR--WITH A FRONT SPOILER, REAR WING, AND AERODYNAMIC UNDERBODY--CAN GENERATE UP TO 1.1 TONS OF AERODYNAMIC FORCE.



THAT HELPS IT MOVE REALLY QUICKLY THROUGH ALL THE CURVES AND CROSS THE FINISH LINE FIRST.

AHHH, THAT'S STARTING TO MAKE SENSE! THANKS FOR EXPLAINING IT, UNCLE TIM!



MY PLEASURE.

I THOUGHT SPOILERS WERE JUST THERE TO, LIKE, MAKE CARS LOOK COOLER...



SCRATCH SCRATCH

OH MAN, THERE'S AN AWFUL LOT OF AIR IN YOUR BRAIN, BEN!

HA HA HA THE END

Porsche 911 Turbo S Coupé

Fuel consumption city: 15.5 l/100 km
highway: 8.6 l/100 km - combined: 11.1 l/100 km
CO₂ emissions combined: 254 g/km