



...since 1853*



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fluid force



kondo racing
donne mugen

veloci prodive racing
laurat 550 muranolo GTS

sl racing
laurat 550 muranolo GT

luc alphant adventures
laurat 550 muranolo GTS

jmb racing
laurat 360 modena



300V

Nouvelle gamme motorSport



New **MOTUL 300V** range

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Improvements :

- Lubrication

=> **Double Ester Technology**

- Friction modifier

=> **Maximum Power output**

- 0% Shear Loss

=> **Stable oil pressure**

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300V Technical Opportunity

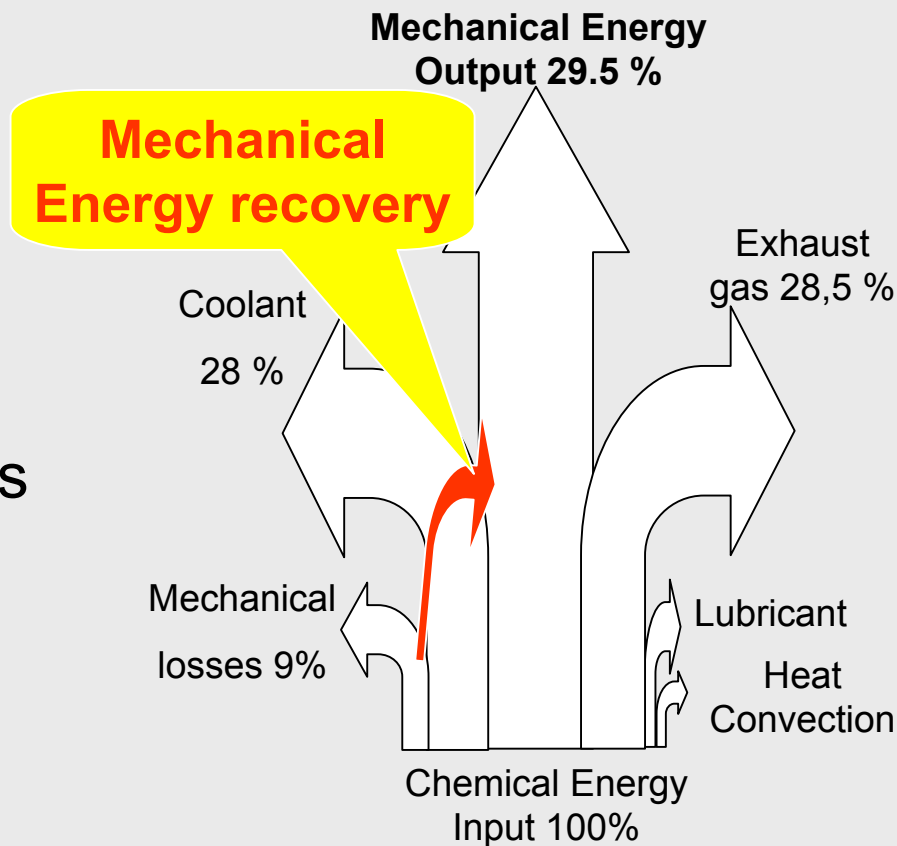
Targets :

■ Increase Power Output

- ⇒ Minimize losses :
 - ⇒ Friction
 - ⇒ Operating temperatures

■ Increase Reliability

- ⇒ Stronger Base stock
- ⇒ Minimise oil consumption
- ⇒ Increase oxidation stability



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Improvements :

- Lubrication

=> **Double Ester Technology**

- Friction modifier

=> Maximum Power output

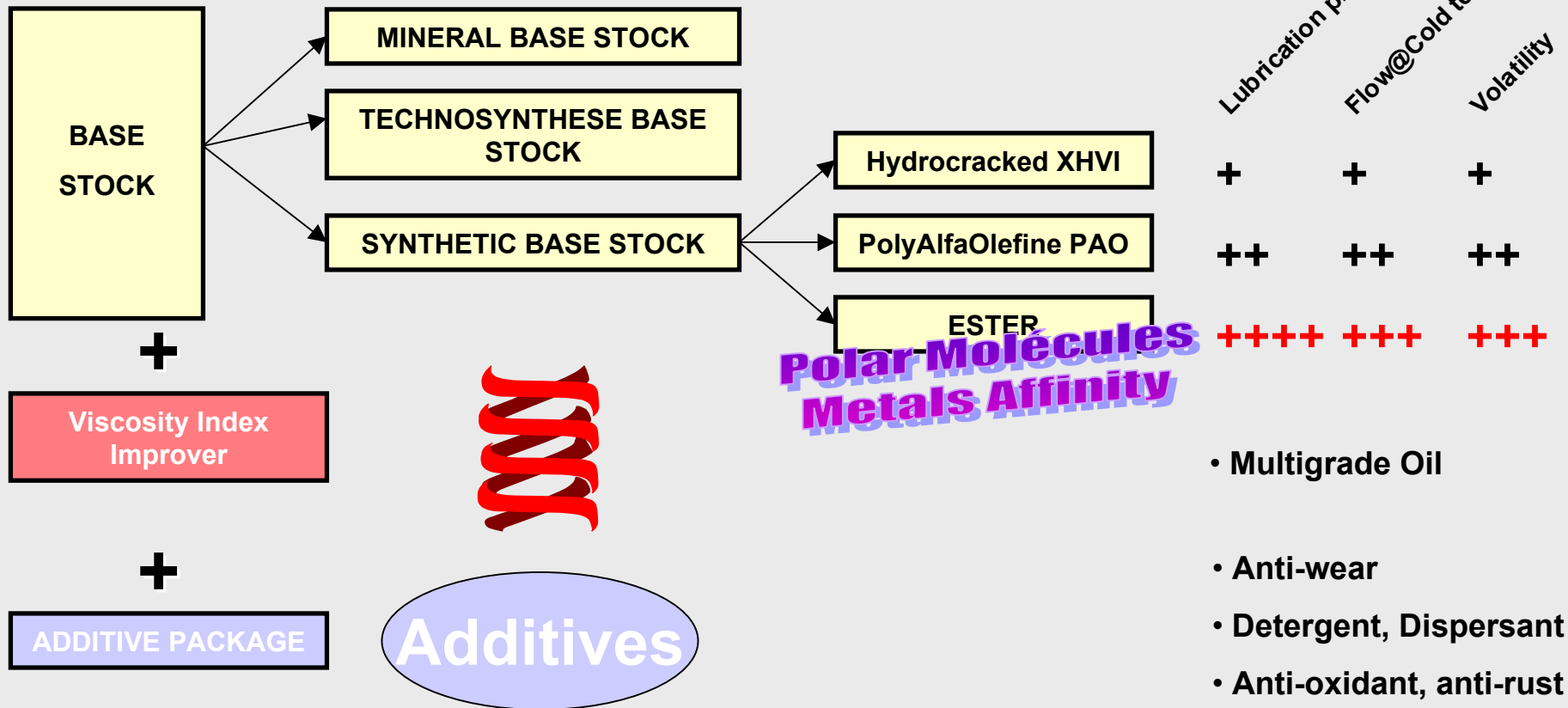
- 0% Shear Loss

=> Stable oil pressure

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Lubricant Components





New 300V Formula

BASE STOCK

Double
Ester
Technology



VISCOSITY
IMPROVER

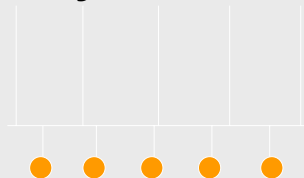


FRICTION
MODIFIER

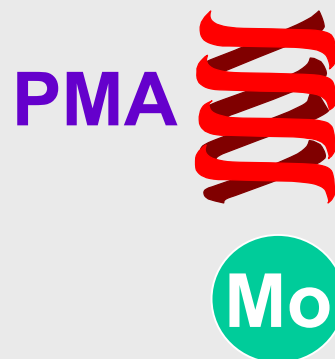
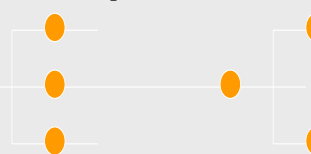


DEDICATED
ADDITIVE
PACKAGE

Polymer Ester



Complex ester



Additives

- Balanced polarity
- Maximum oil film resistance
- Lower volatility
- High Viscosity index
- Improved temperature resistance
- 0% shear Loss
= Stable oil pressure
- Increase power output
- Reinforced oxydation resistance
- Maximum antiwear
- Engine cleanliness

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Testing to confirm and prove NEW 300V Performances

■ Basis:

- ↪ **International testing:** France, Japan, Italy, Sweeden, UK
- ↪ **Official tests** defining international standard performance
- ↪ **Engine & Field testing** specially designed

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Testing to confirm and prove NEW 300V Performances

■ Lab tests :

- ↪ ASTM D3945 : **Shear stability** - oil pressure stability (SAE/ACEA)
- ↪ ASTM D4741: **HTHS** dynamic viscosity @150°C - Protection at high temperature - (SAE J300)
- ↪ NFT 60161 : **Noack volatility** - oil consumption (ACEA/API)
- ↪ HPDSC : **Oxidation resistance** (oil life time)
- ↪ TE 77 : **Cameron Plint Friction & wear test** (wear & power output)

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■ Official Engine tests

↳ **100 H wear test** - TU3MS ACEA- CEC L-38-A-94:

↳ Valve train wear test, on 1.4 gasoline serial engine

■ Engine Bench tests:

↳ **24H race endurance test**

↳ Clio Trophy V6 engine Solution F - France

↳ **Power output comparison** with competitor products Porsche 3.3L flat 6 racing engine

↳ Spezialmotorer- Sweden

↳ **Validation on serial car** : Toyota Corolla 2.0 L

↳ Automobilismo Italy

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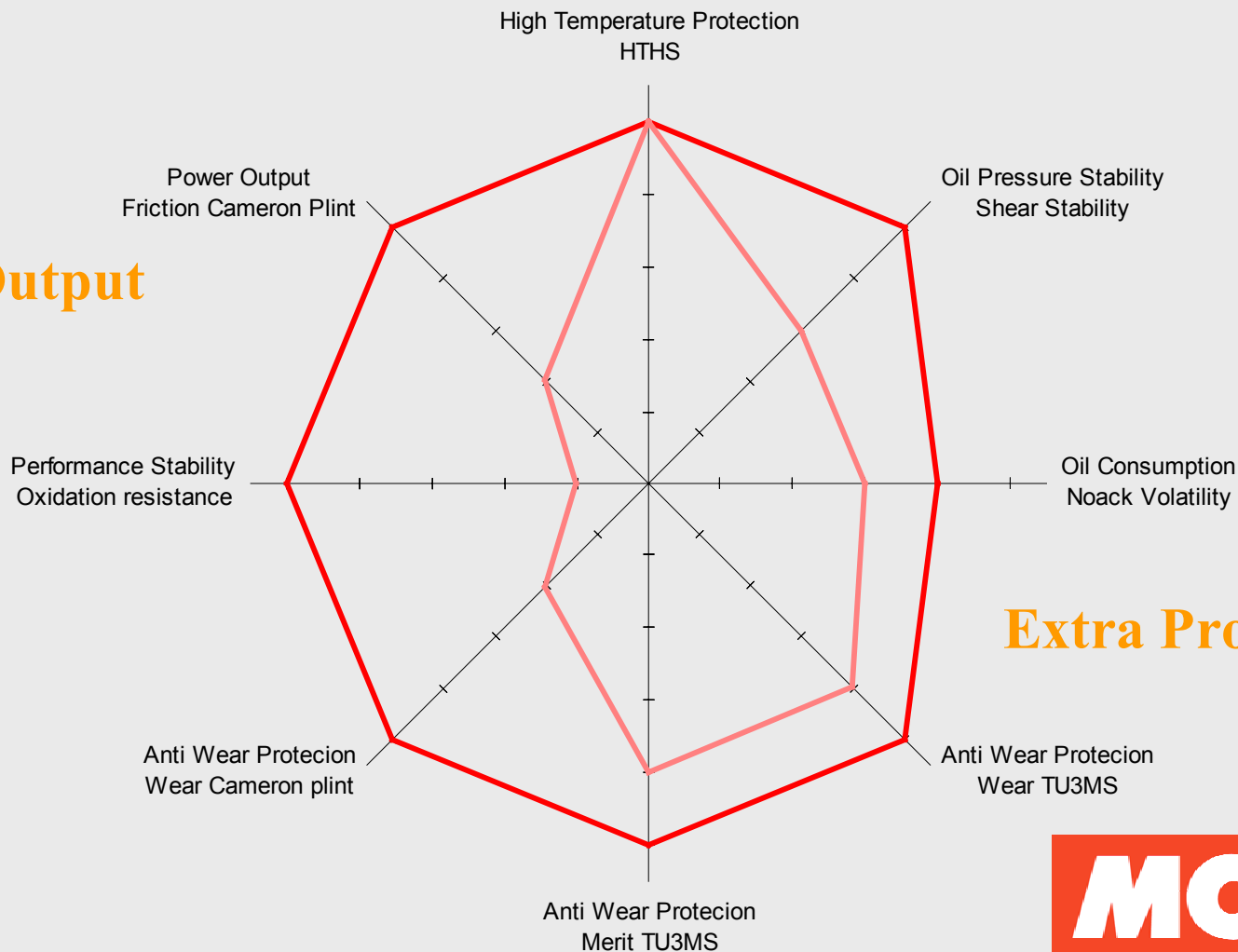
■ Field tests

- ↪ Prodrive Le Mans 24 Hours (LMGTS) - FIA GT
- ↪ Prodrive SUBARU SWRT WRC
- ↪ Toyota TRD Japanese GT championship
- ↪ Graff Racing Formula Renault
- ↪ Coloni Sport Formula 3000



300V NEW vs OLD

**Extra
Power Output**

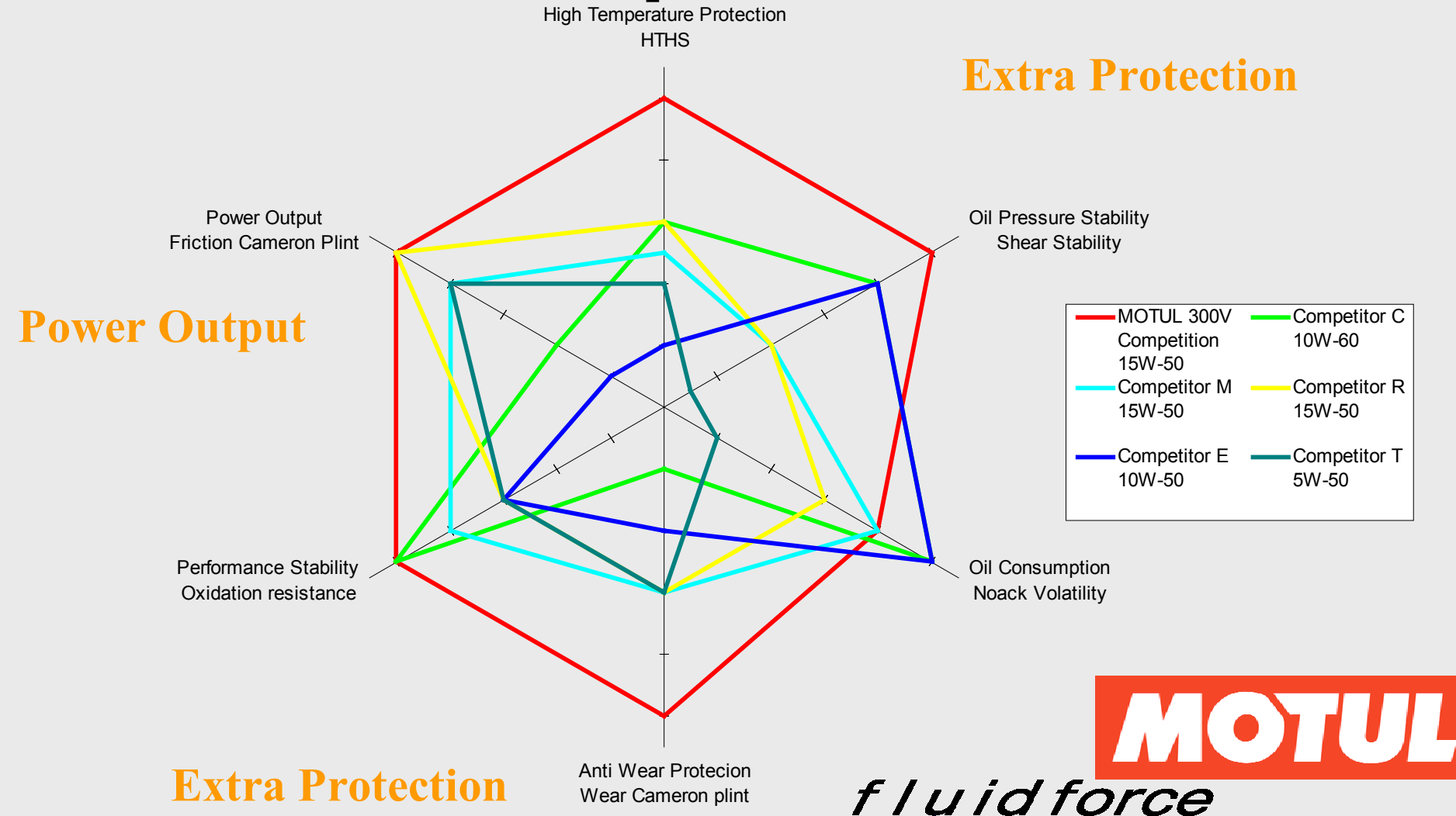


Extra Protection





300V NEW vs Competitors





Testing to confirm and prove NEW 300V Performances

⇒ **Official tests** defining international standard performance

**Above existing
standards**

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RELIABILITY- Endurance engine test (TU3MS CEC L-38-A 94)

100 hours = 8000 km or 5000 miles

IFP (French Petroleum institute) :

Ability to perform ACEA official engine tests.

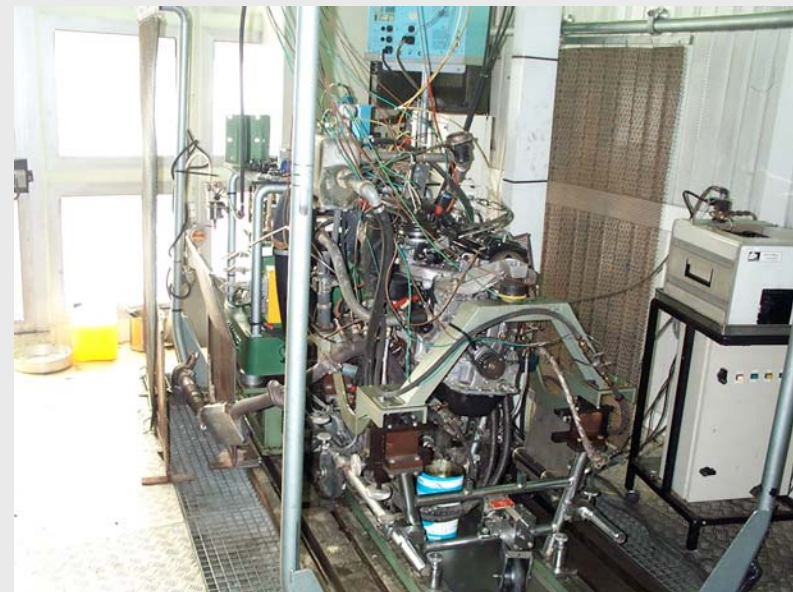
TU3MS Valve train wear test required for ACEA :

Cam noses and rocker arms wear evaluation.

Engine : 4 in line cylinder, 1.4L serial engine

Test : 100 hours long test divided in 2 phases :

- 40 hours @ 1500 rpm
- 60 hours @ 3000 rpm



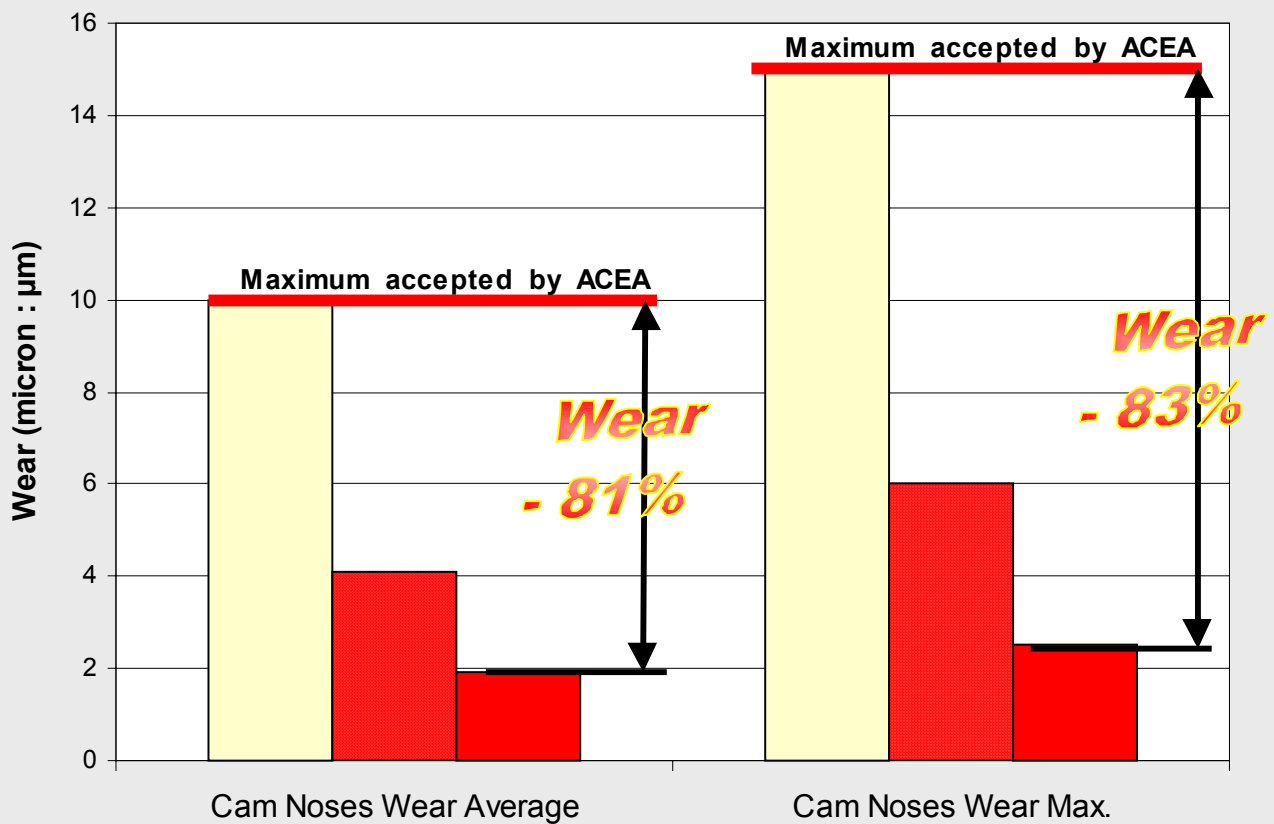
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RELIABILITY - Lubrication - Cam noses wear

VALVE TRAIN WEAR TEST TU3MS CEC L-38-A-94



Above existing standards

- ACEA A requirements
- MOTUL 300V Competition 15W-50 (old)
- MOTUL 300V Competition 15W-50

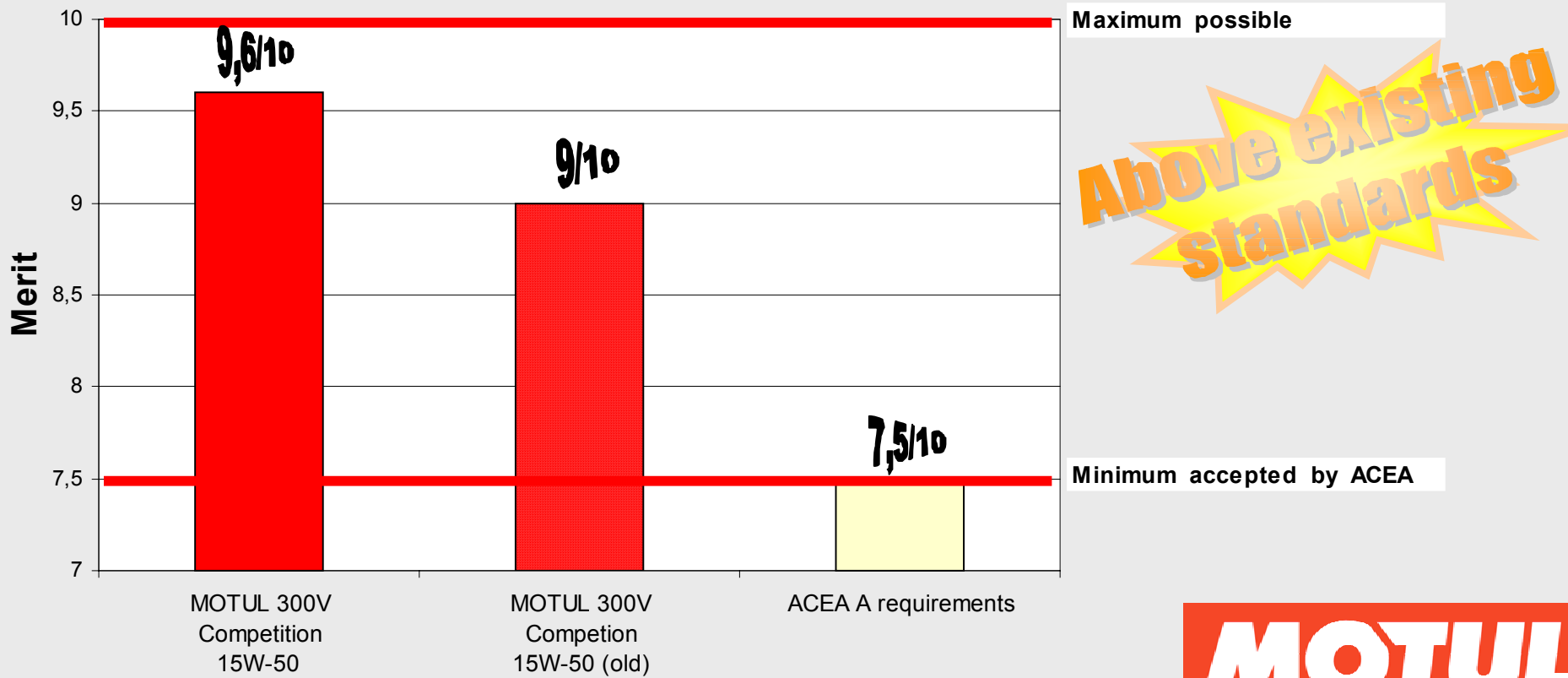


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RELIABILITY - Lubrication - Rocker arms wear

VALVE TRAIN WEAR TEST TU3MS CEC L-38-A-94



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Improvements :

- **Lubrication**

=> Double Ester Technology

- **Friction modifier**

=> **Maximum Power output**

- **0% Shear Loss**

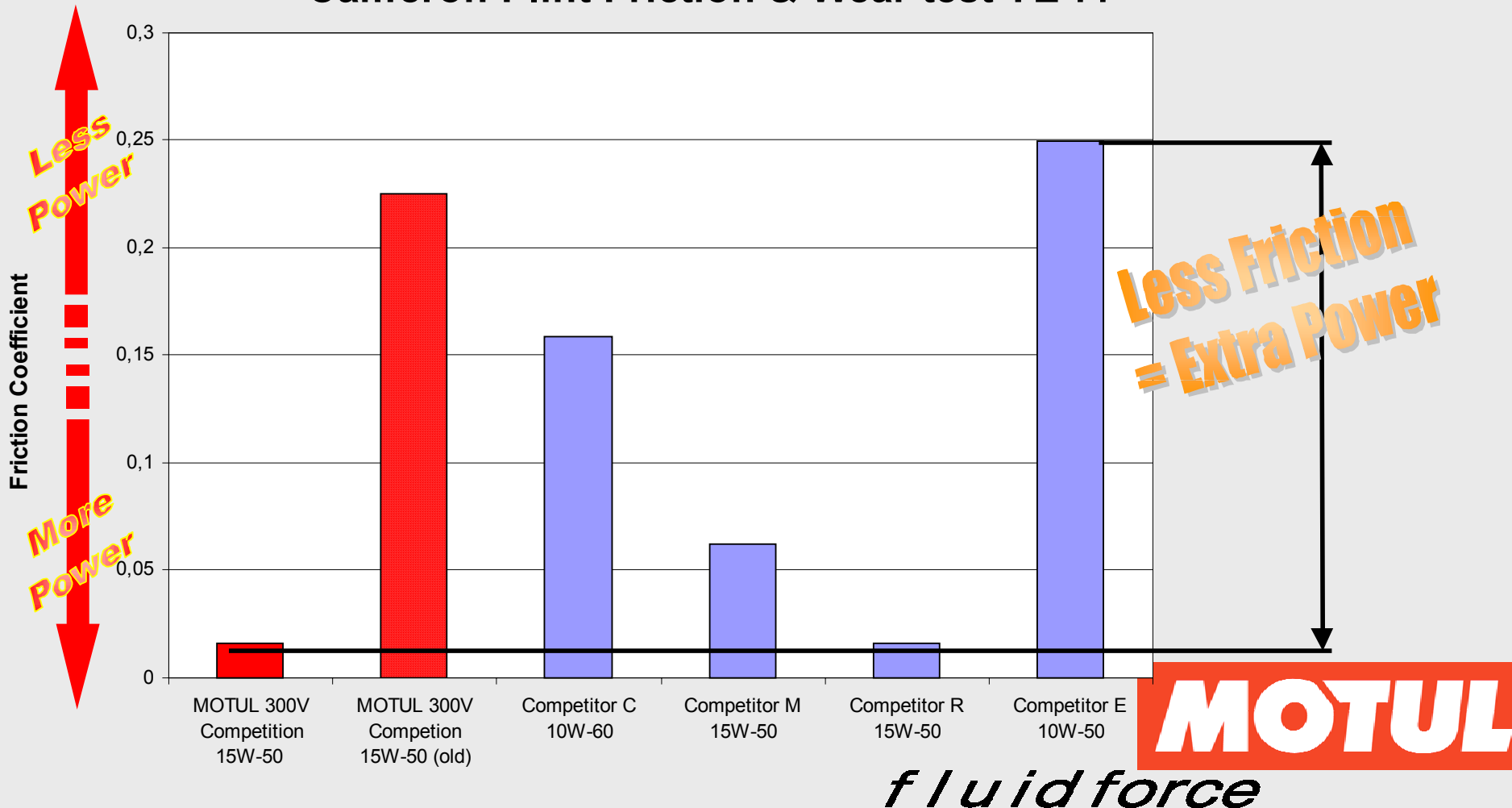
=> Stable oil pressure

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POWER OUTPUT- Friction coefficient

Cameron Plint Friction & Wear test TE 77





Improvements :

- **Lubrication**

=> Double Ester Technology

- **Friction modifier**

=> Maximum Power output

- **0% Shear Loss**

=> **Stable oil pressure**

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1960s racing
dome mugen

1970s production racing
Ferrari 550 maranello GTS

1980s racing
Ferrari 550 maranello GT

1990s production adventures
Ferrari 550 maranello GTS

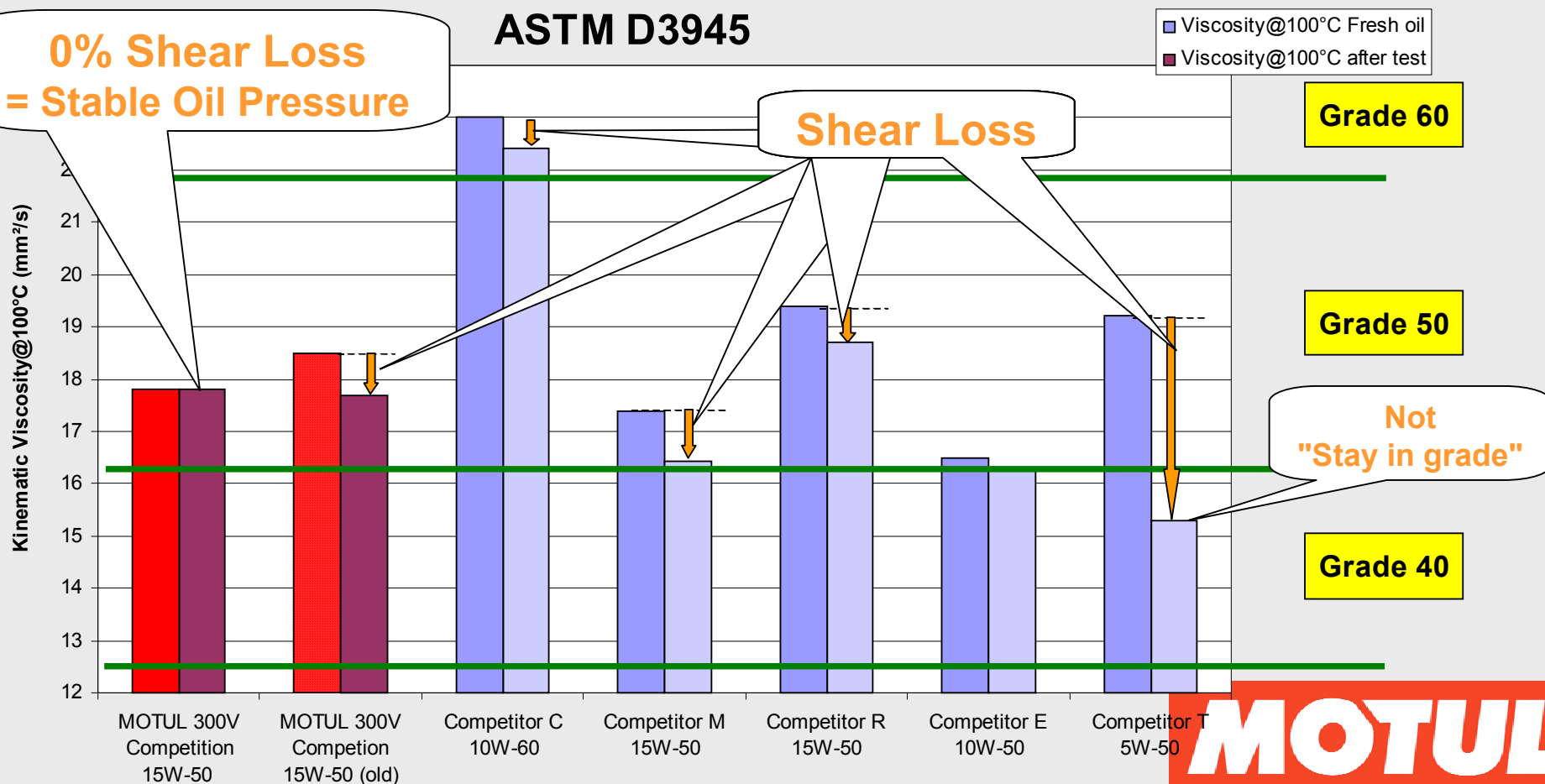
2000s racing
Ferrari 360 Modena

RELIABILITY - Lubrication

Shear Loss after Bosch injector Shear test

ASTM D3945

0% Shear Loss
= Stable Oil Pressure

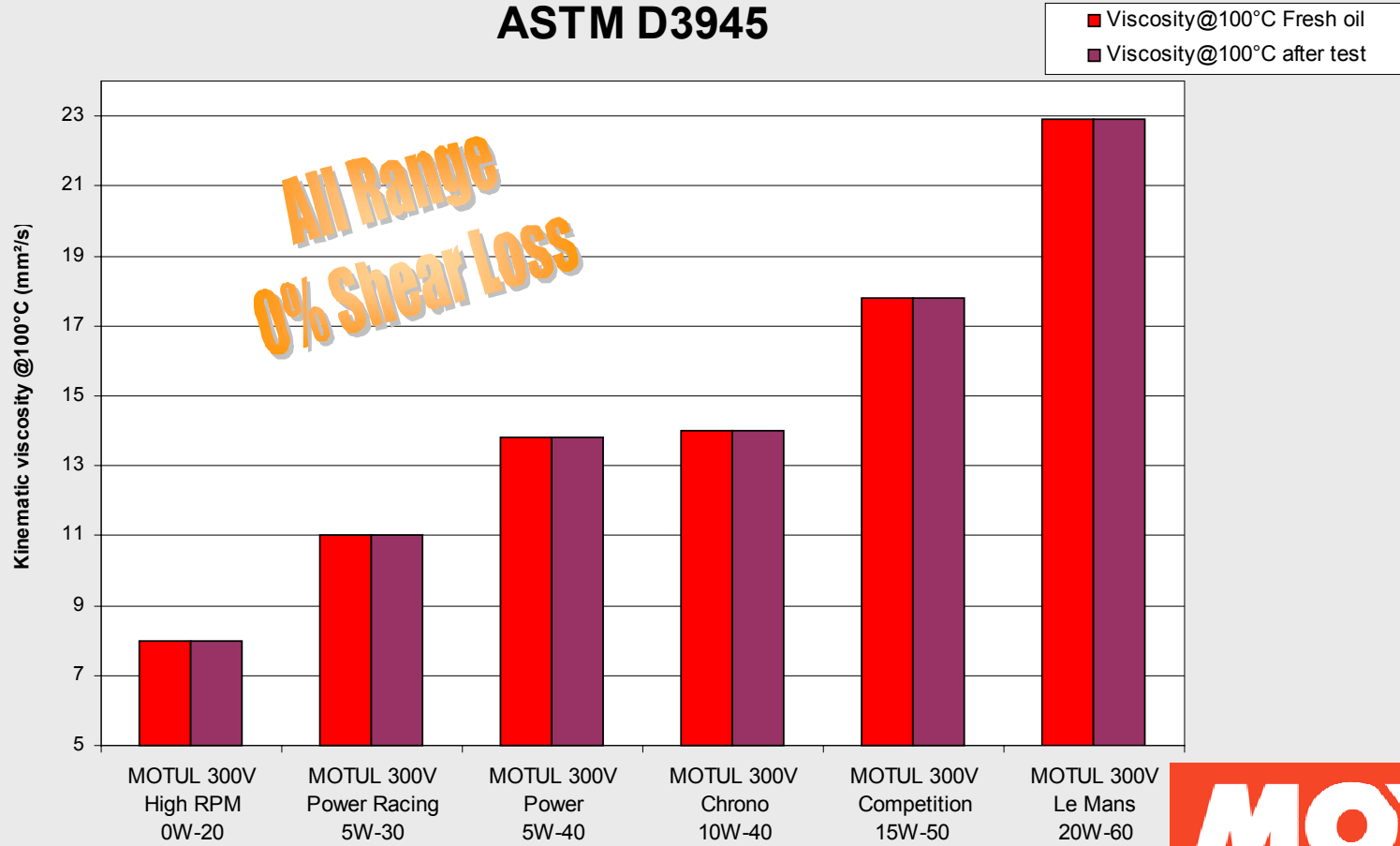


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RELIABILITY - Lubrication

Shear loss after Bosch injector Shear test ASTM D3945



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Testing to confirm and prove NEW 300V Performances

Additional tests

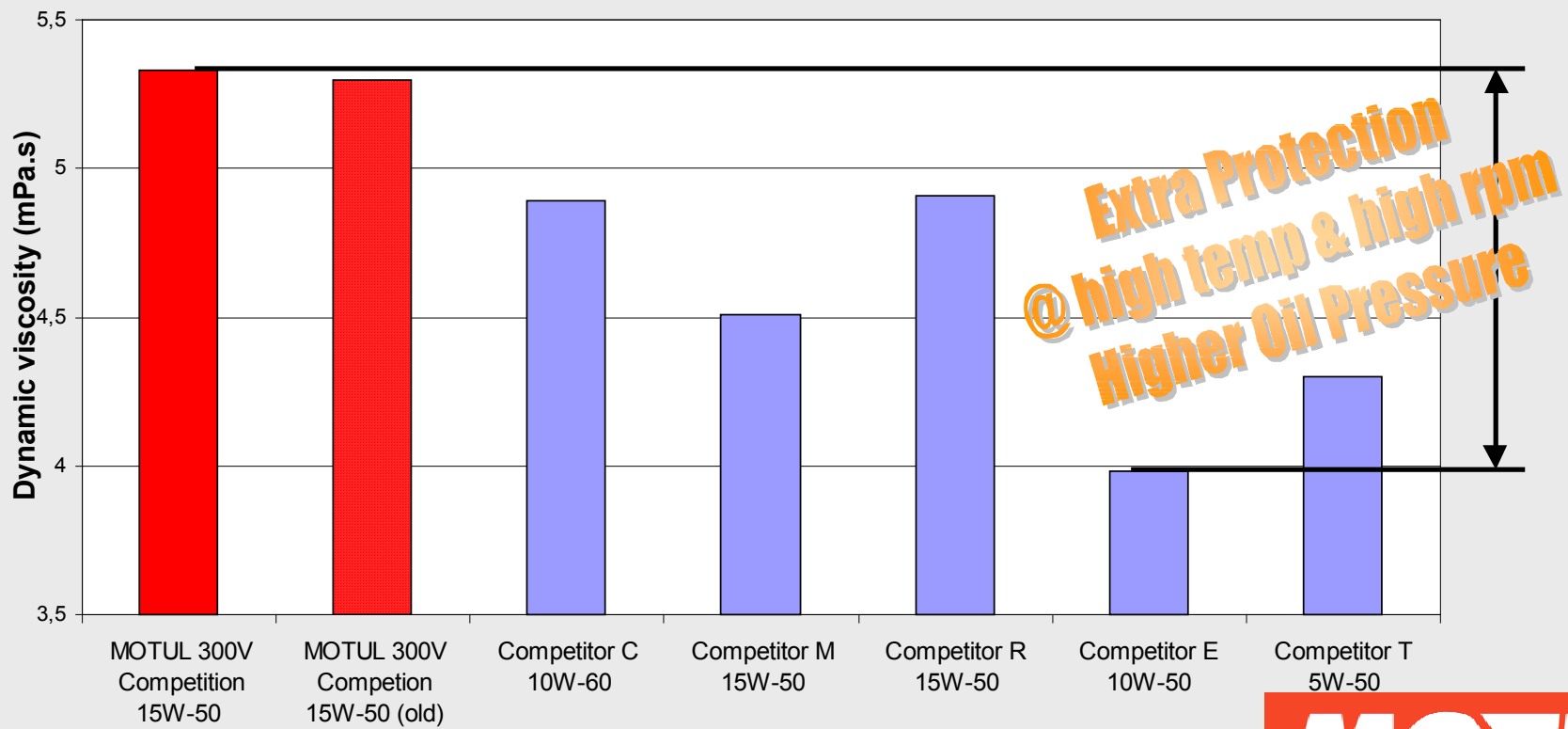
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RELIABILITY - Lubrication

High Temperature High Shear viscosity
measured @ 150°C under 10^6 s^{-1} shear rate ASTM D4741



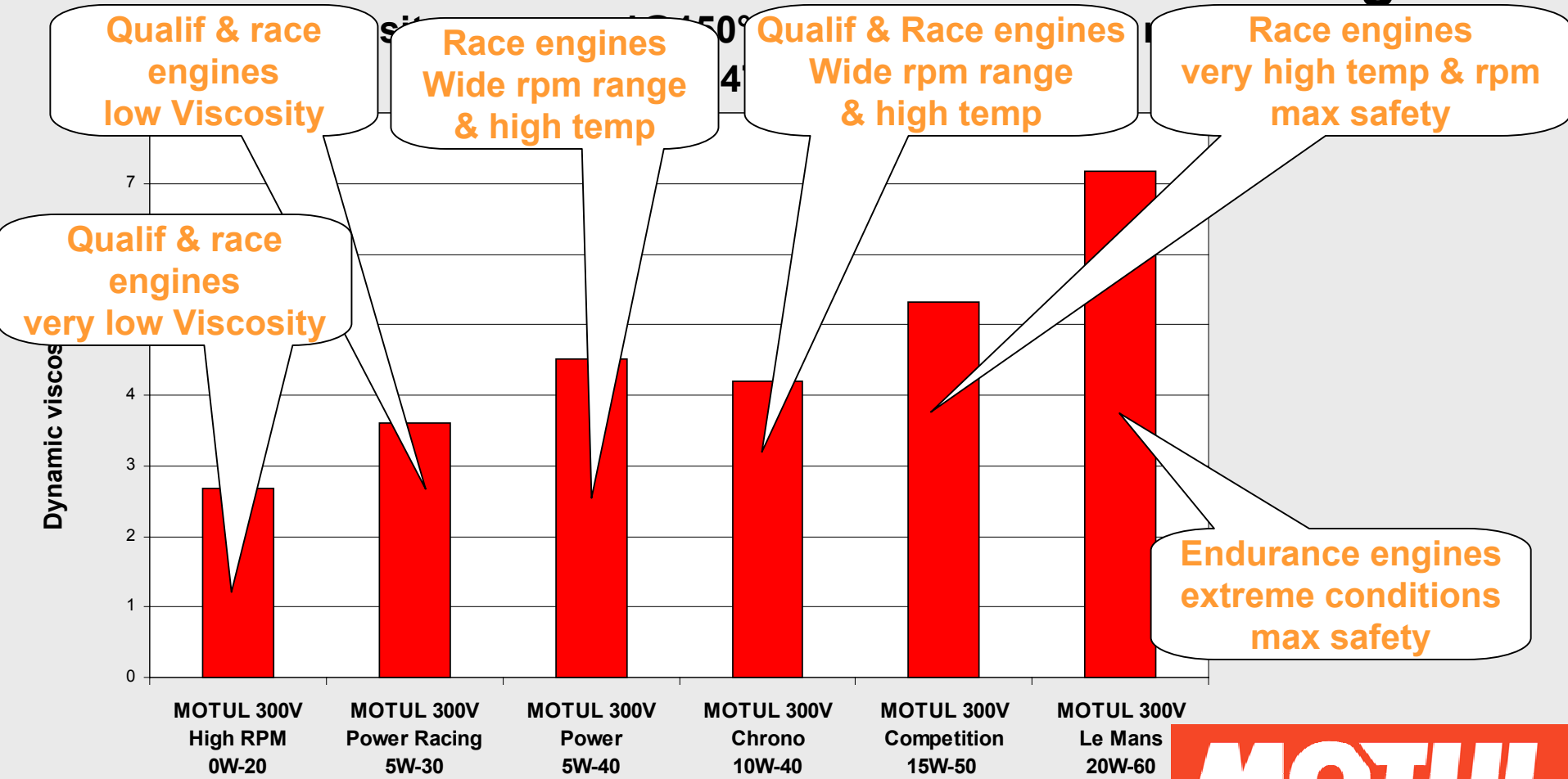
Extra Protection
@ high temp & high rpm
Higher Oil Pressure



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RELIABILITY - Lubrication - HTHS 300V New range

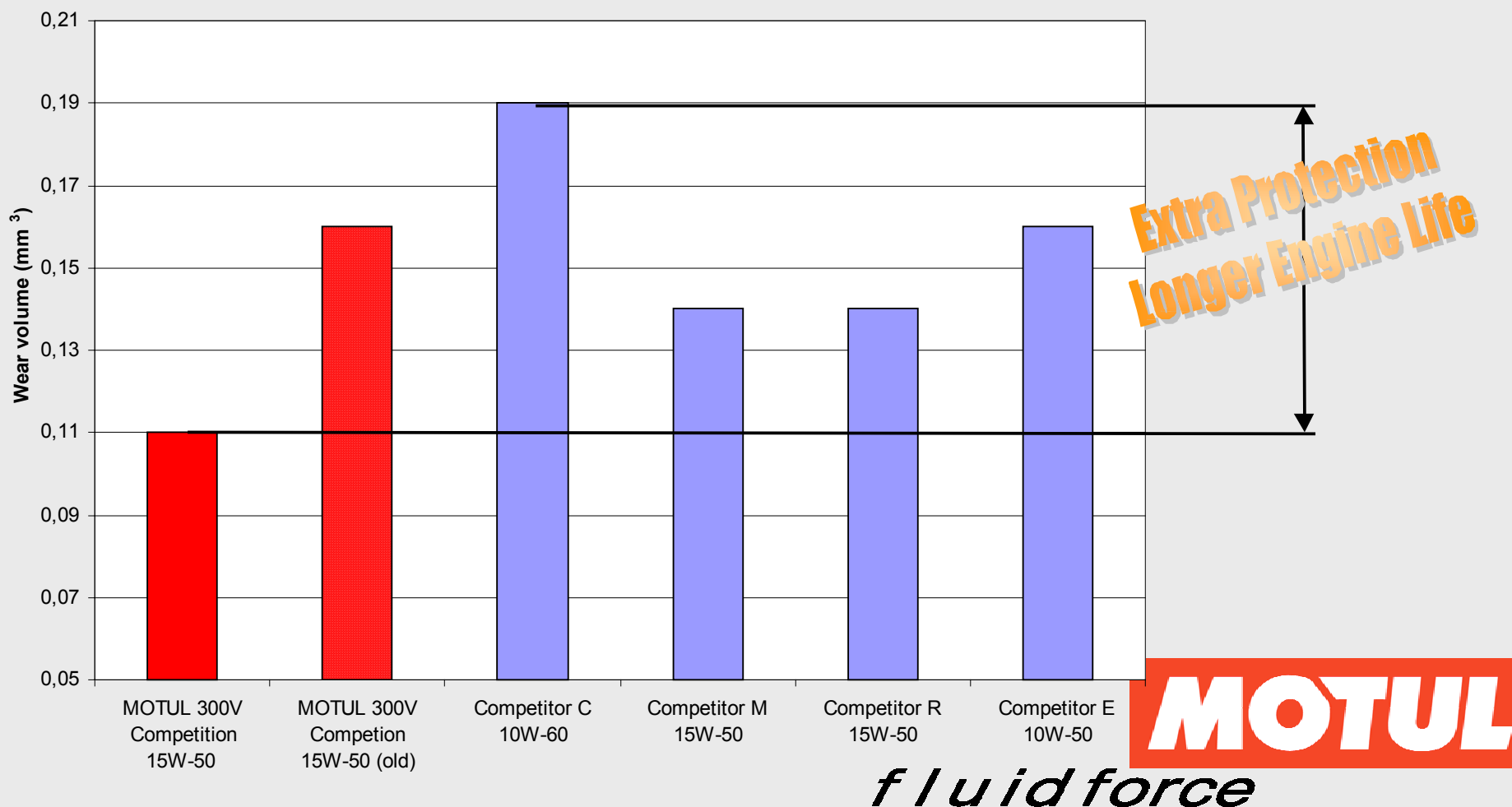


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RELIABILITY - Lubrication

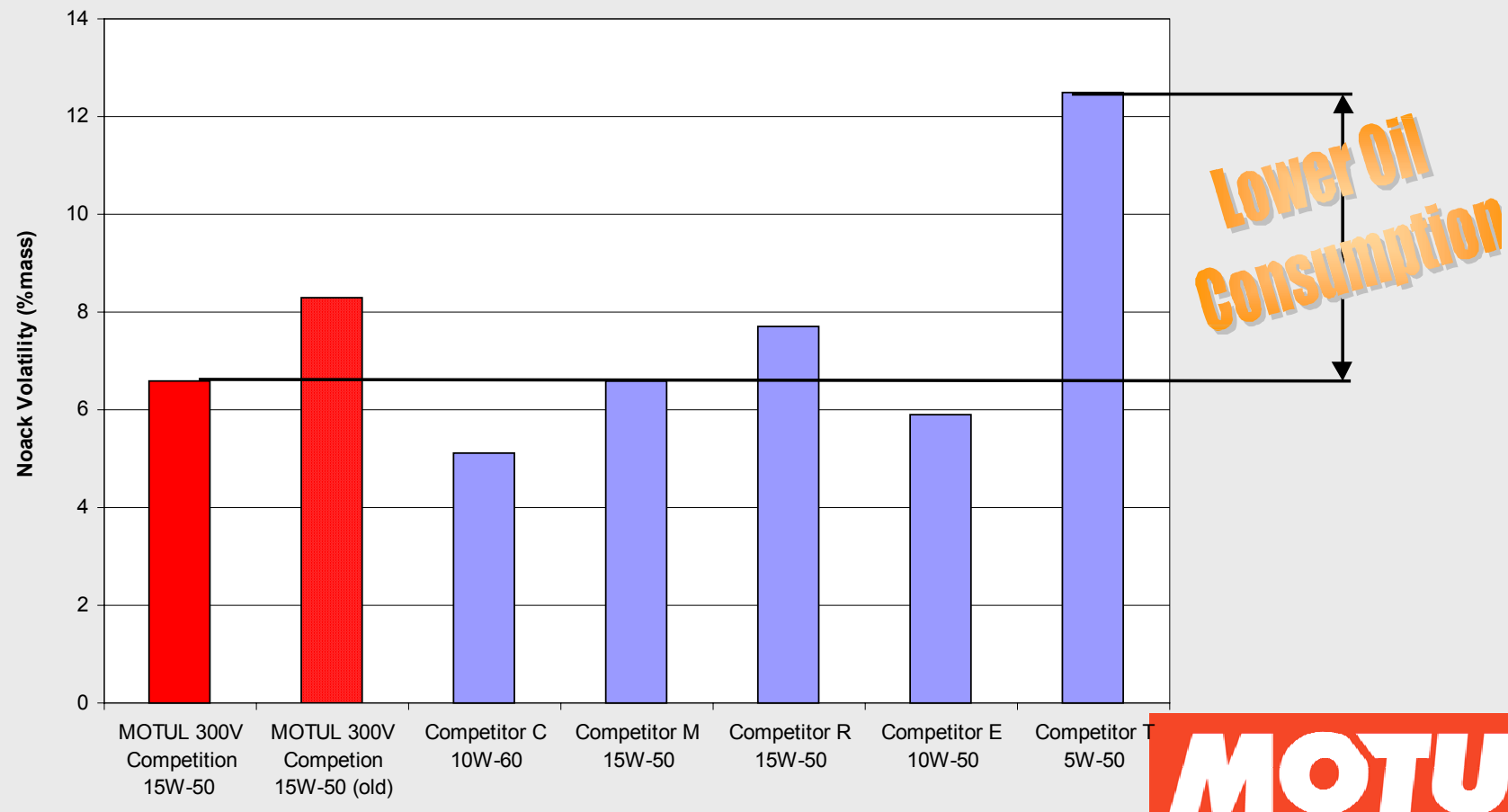
Cameron Plint Friction & Wear test TE 77





RELIABILITY- Oil consumption

Noack Volatility NF T 60161

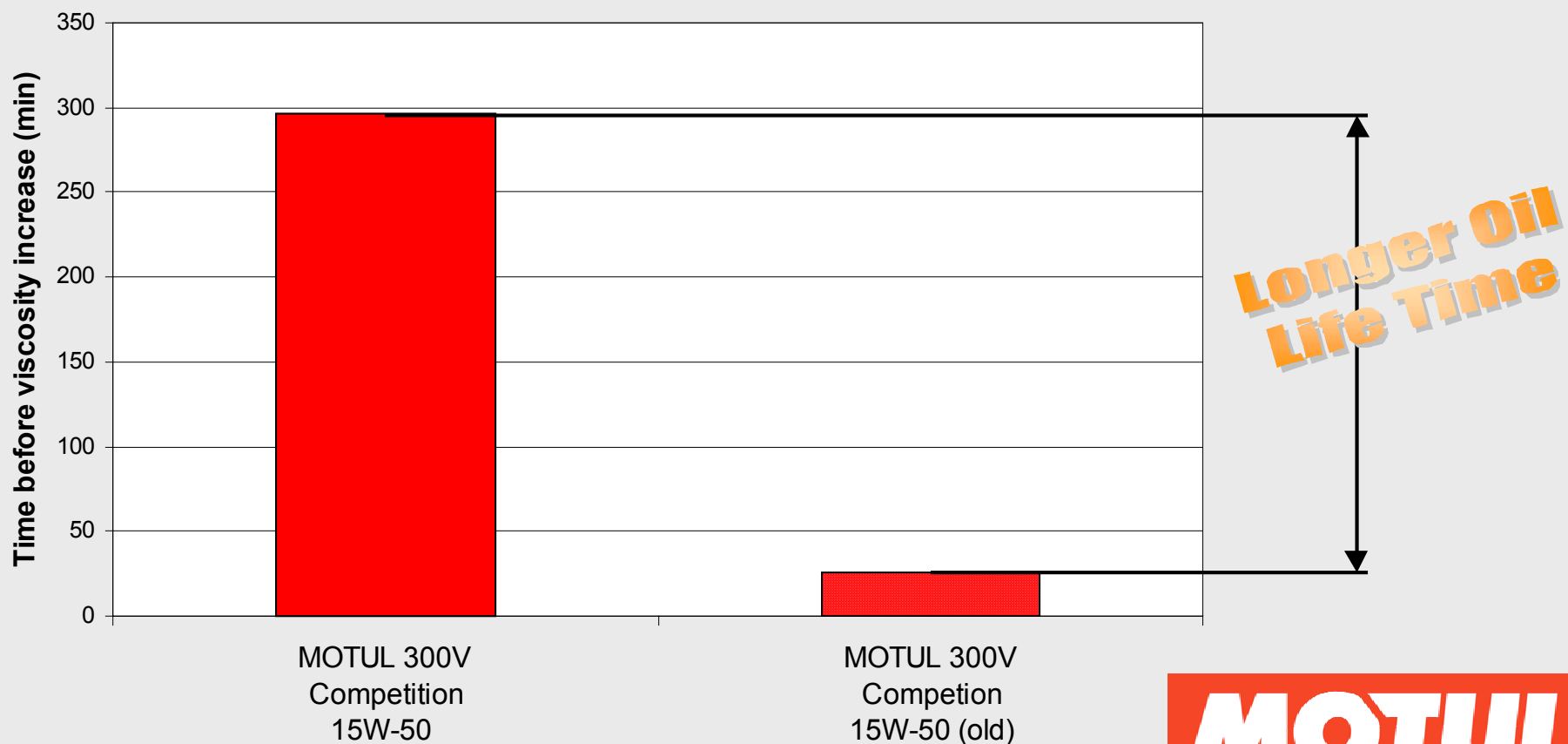


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RELIABILITY - Oxidation stability

Oxidation Stability HPDSC



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RELIABILITY- Le Mans 24 Hours endurance test

Solution F :

- Racing Engine and Chassis design
- Rally WRC, FIA GT, 24H Le Mans applications
- Car manufacturers special engineering

Engine :

Clio Trophy V6 3.0 L 24V, Atmospheric

Based on Renault/Peugeot serial engine

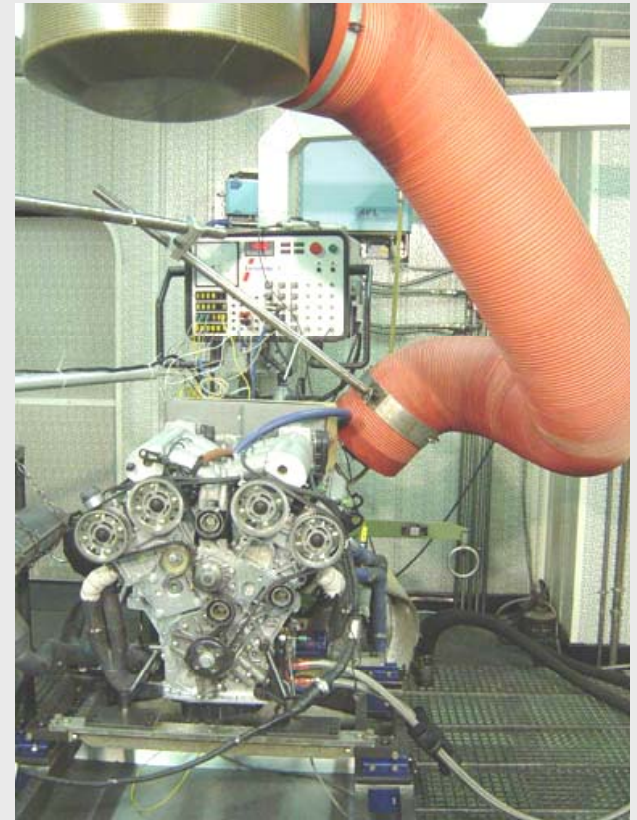
Improved cylinder head inlet/exhaust

Air inlet restriction (According to cup regulation)

Improved camshaft

Improved pistons and rings

Balanced connecting rods



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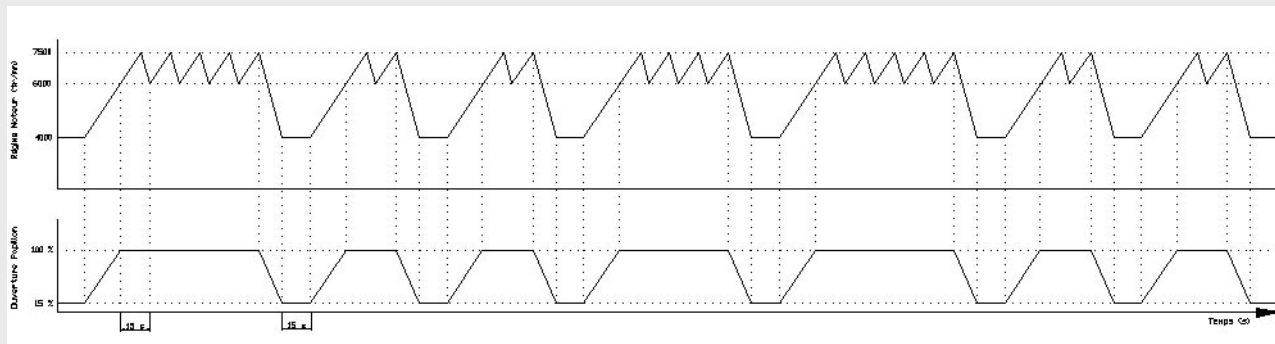
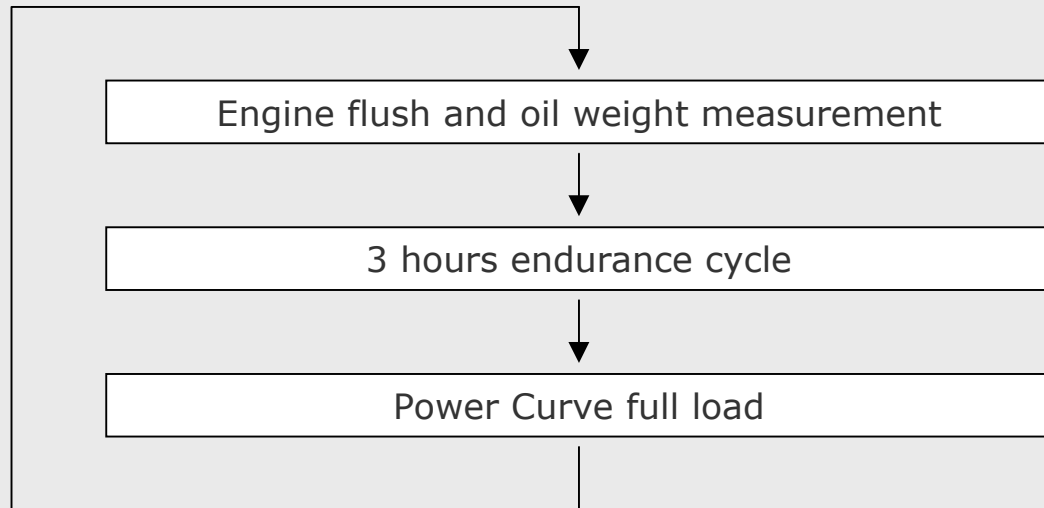
fluid force



RELIABILITY- Le Mans 24 Hours endurance test

- Test procedure

- Engine cycle : LE MANS race track

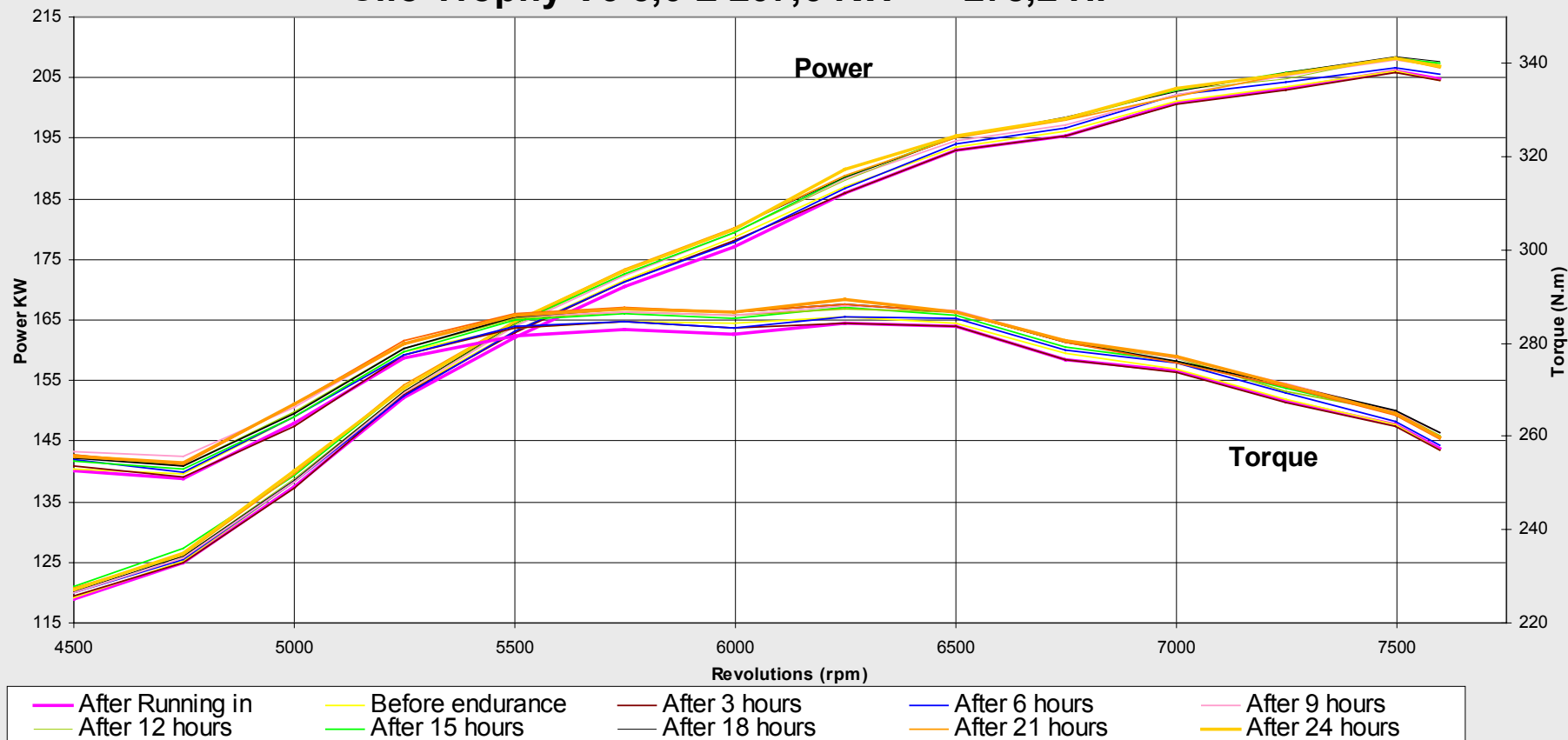


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Engine Performances Evolution

Clio Trophy V6 3,0 L 207,6 KW => 278,2 HP



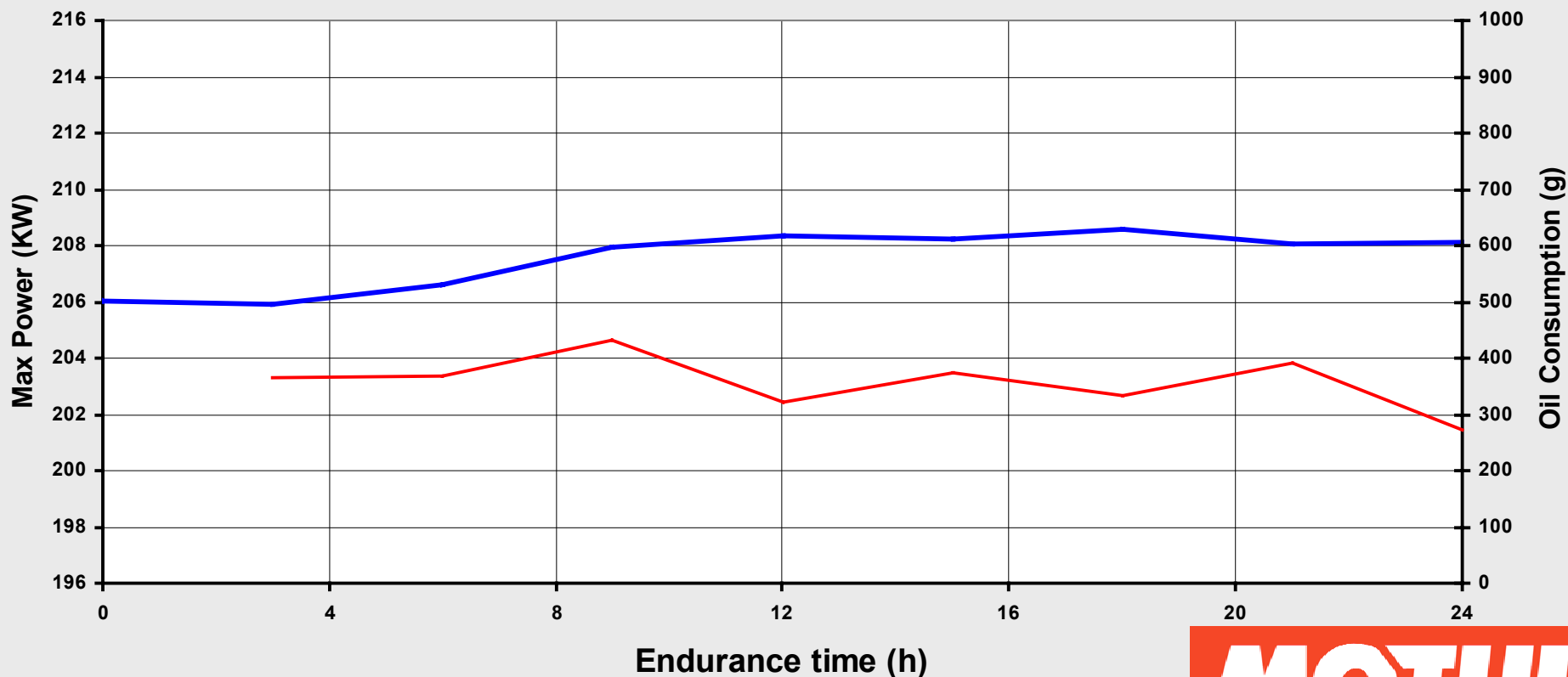
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RELIABILITY - Le Mans 24 Hours endurance test

Engine Parameters Evolution During Endurance
(Average values measured between 6500 and 7500 rpm)



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RELIABILITY- Le Mans 24 Hours endurance test

Metrology : tridimensional measurement

Wear after 24 hours test :

- Pistons/cylinders clearance : $< + 0.01 \text{ mm (Av.)}$
- Crankshaft/bearings clearance : $< + 0.003 \text{ mm}$
- Connecting rods big bearing clearance : $< + 0.003 \text{ mm (Av.)}$
- Valve lifts clearance : **no evolution**



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RELIABILITY- Le Mans 24 Hours endurance test

- Engine cleanliness



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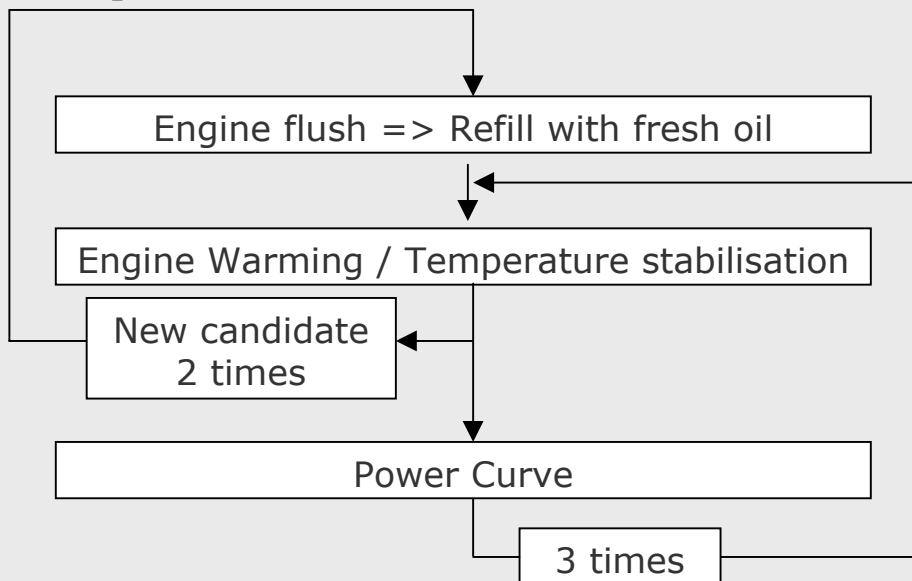
POWER OUTPUT

Spezialmotorer- Sweden

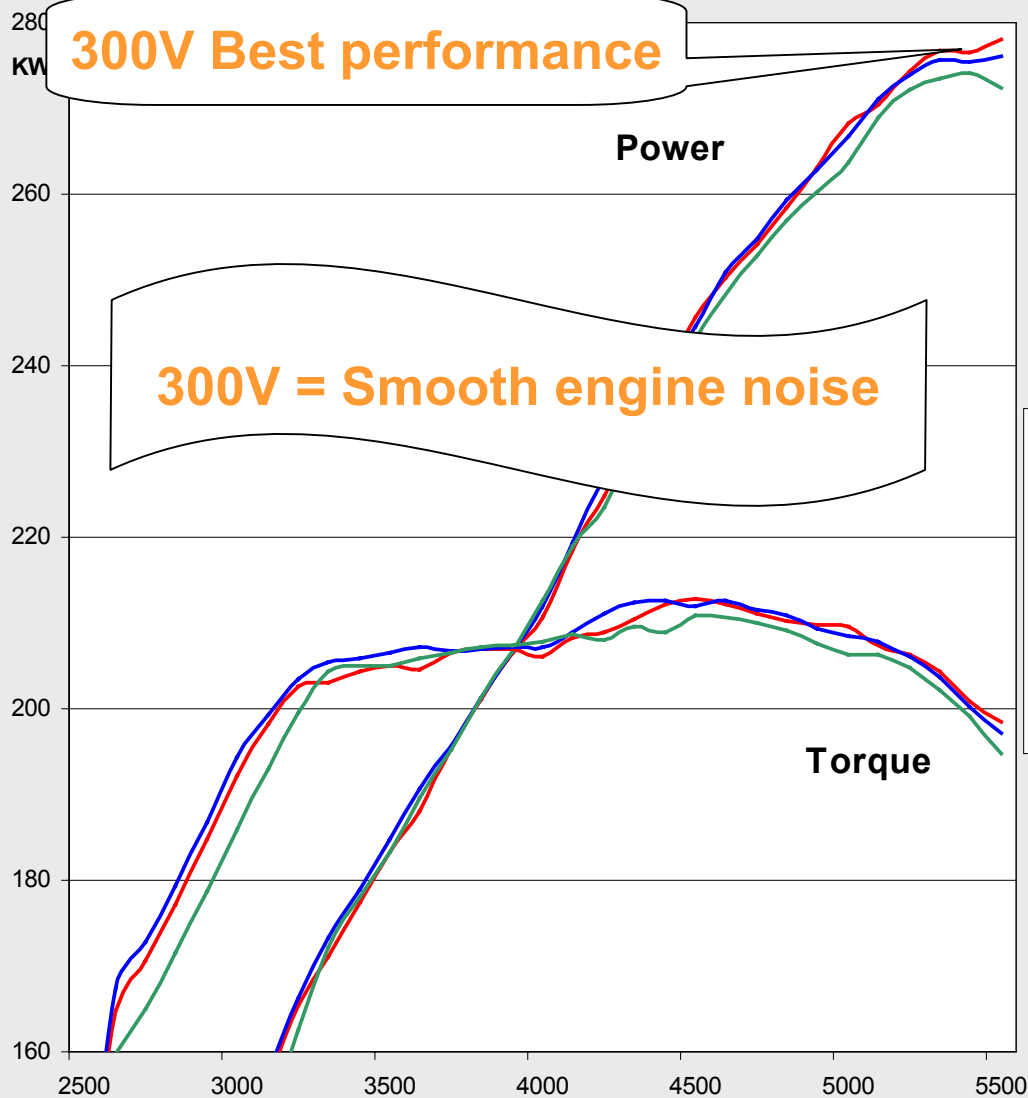
Micke Svens : Famous Porsche engine tuner

Engine : Porsche 3.3L,
Atmospheric, Air cooled

Test procedure :



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Porsche 3.3 L engine
278 KW => 372,6 HP

- Motul 300V Competition 15W-50 Power Av
- Motul 300V Le Mans 20W-60 Power Av
- Competitor C 10W-60 Power Av
- Motul 300V Competition 15W-50 Torque av
- Motul 300V Le Mans 20W-60 Torque av
- Competitor C 10W-60 Torque av

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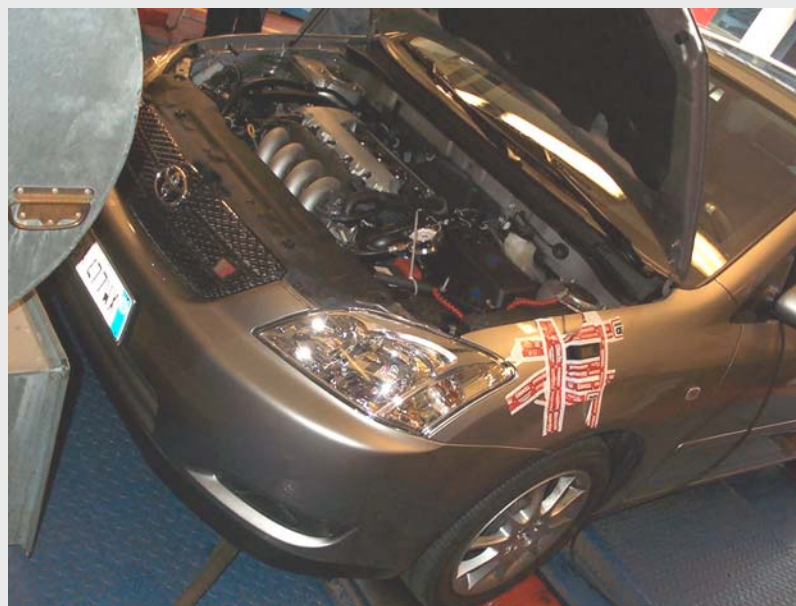
POWER OUTPUT

Automobilismo - Famous Italian Auto Magazine

Tests realized by Automobilismo Centro Prove e Servizi Srl

Car :

Toyota Corolla 2.0 L 16V,
Variable valve timing

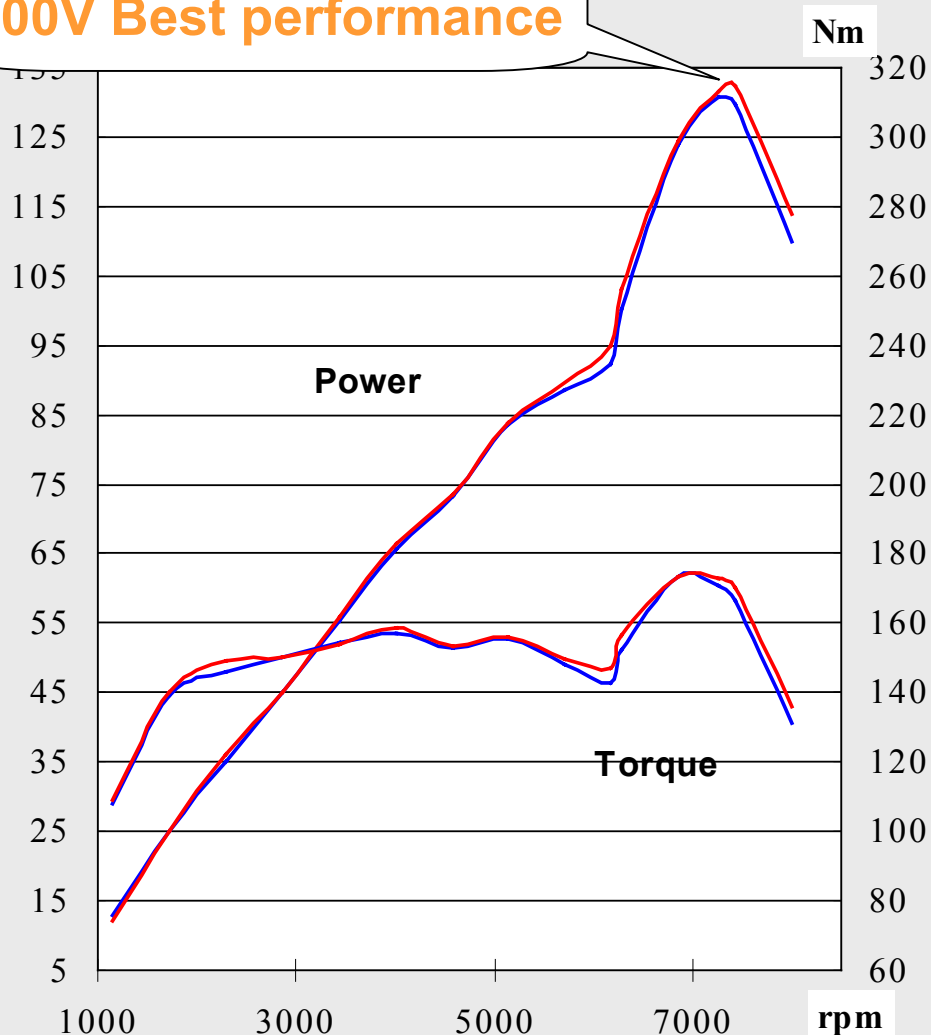


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300V Best performance



Toyota Corolla 2.0 L
132,3KW => 177,3 HP

- 300V Comptition 15W-50 (Old) Power Av
- 300V Comptition 15W-50 Power Av
- 300V Comptition 15W-50 (Old) Torque Av
- 300V Comptition 15W-50 Torque Av

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POWER OUTPUT- Fluid grades

- Graff Racing,
Formula Renault



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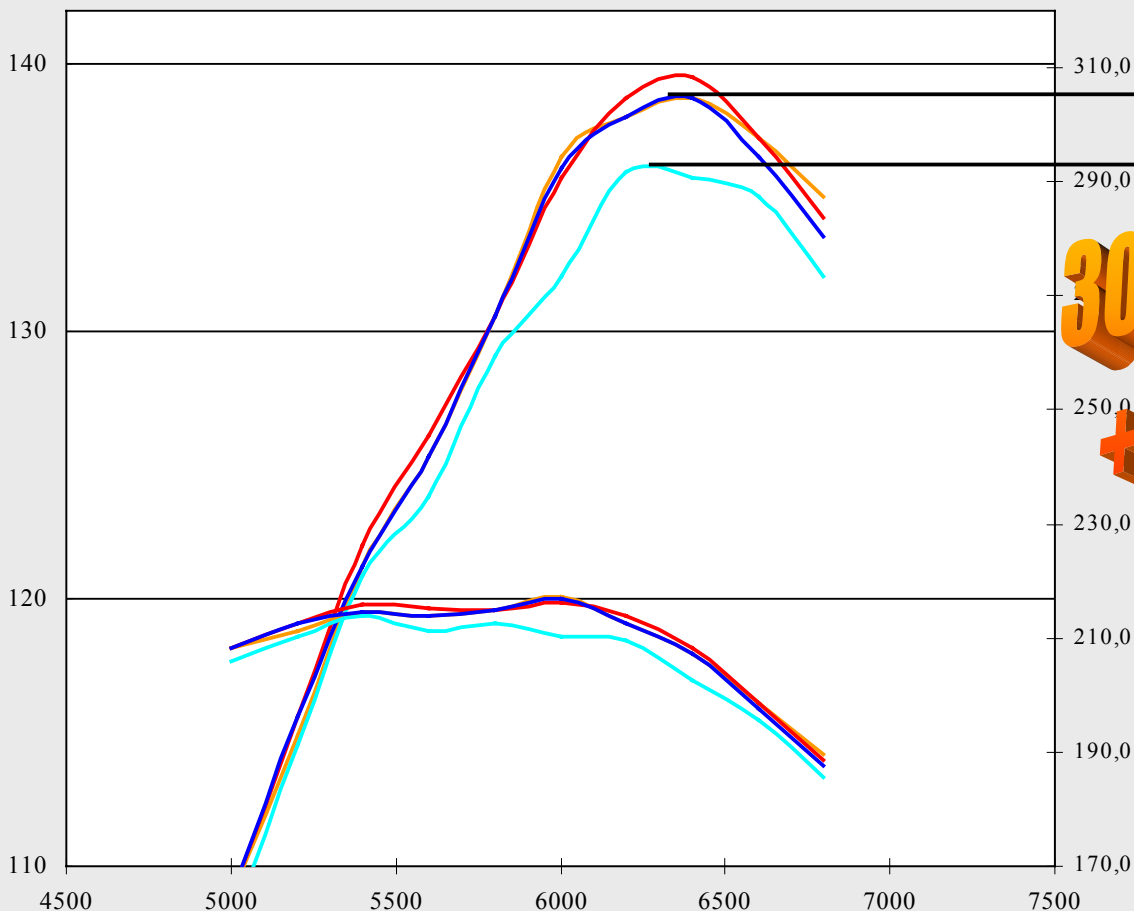


Formula Single brand 2.0 L 16V engine

139,5KW => 187 HP

kW

Nm



300V High RPM 0W-20
+ 4 bhp @ cold temp

- Motul 300V High RPM 0W-20 Power (88°C)
- Motul 300V High RPM 0W-20 Power (103°C)
- Competitor M5W-40 Power (88°C)
- Competitor M5W-40 Power (103°C)
- Motul 300V High RPM 0W-20 Torque (88°C)
- Motul 300V High RPM 0W-20 Torque (103°C)
- Competitor M5W-40 Torque (88°C)
- Competitor M5W-40 Torque (103°C)

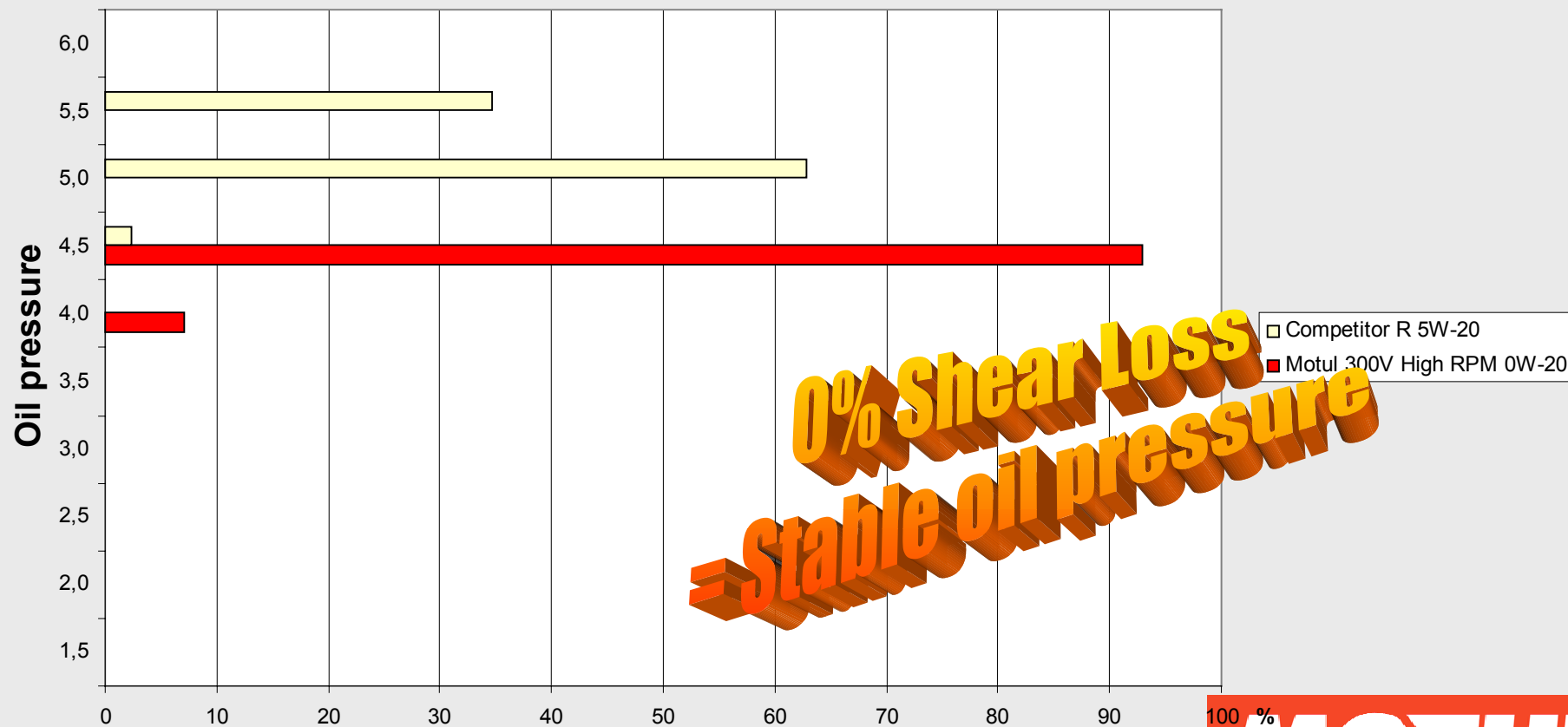
rpm

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Oil Pressure Stability over 1 lap Nogaro race Track



0% Shear Loss
= Stable oil pressure

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*kondo racing
dome mugen*

*velocity prodive racing
lizarri 550 muranolo GTS*

*sl racing
lizarri 550 muranolo GT*

*luc alphonse adventures
lizarri 550 muranolo GTS*

*jmb racing
lizarri 360 modena*



300V

Nouvelle gamme motorSport



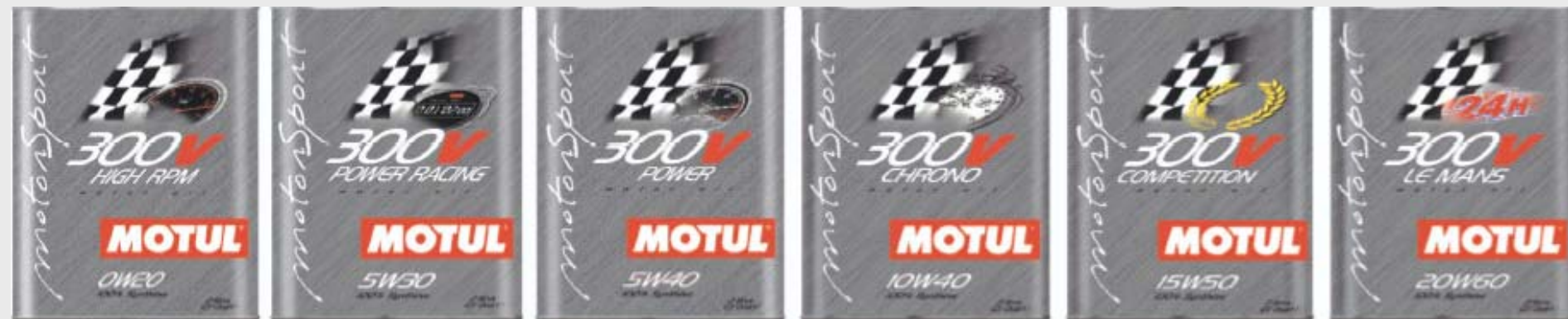
NEW packaging

■ Metalbox

- ↘ Differentiated
- ↘ Recyclable

■ Flexput

- ↘ Proper dosing
- ↘ No more corrosion



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- Promote a new range
⇒ “Motorsport”

- Profile :
 - Racing
 - High tech
 - High performance
 - Trustfull



- Pictos for differentiation

- Focus on the brand

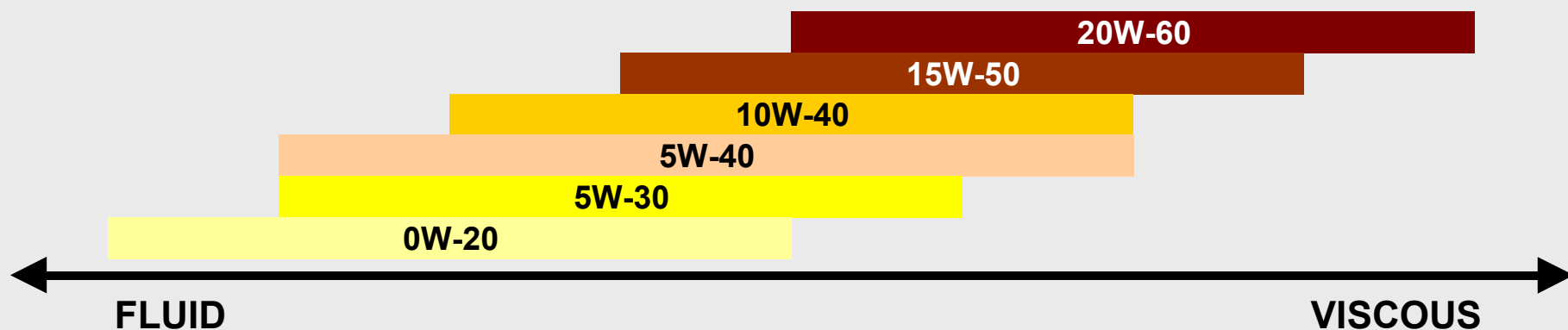
- Viscosity
- Technology

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The NEW 300V high performance technology is declined into
a wider range of viscosity grades



➡ Designed to suit:

- **Any engine design** (check tuner/car maker recommendation)
- **Any application:** Short races, Rallyes, Endurance, Qualifying, Drag racing....

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⇒ 6 products

NEW RANGE

⇒ 1 new grade **0W-20** Introduced

⇒ a change in viscosity to be more endurance oriented

- 300V **20**W-60 LE MANS
- 300V 15W-50 COMPETITION
- 300V 10W-40 CHRONO
- 300V 5W-40 POWER
- 300V 5W-30 POWER RACING
- 300V 0W-20 HIGH RPM



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Kondo Racing
Ferrari 550 Maranello GT5

Veloce Prodrive Racing
Ferrari 550 Maranello GT5

W Racing
Ferrari 550 Maranello GT

Luc Alphand Aventures
Ferrari 550 Maranello GT5

Jmb Racing
Ferrari 360 Modena



Victory

Petter Solberg 2003 World Rally Champion



New MOTUL 300V range



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New MOTUL 300V range

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