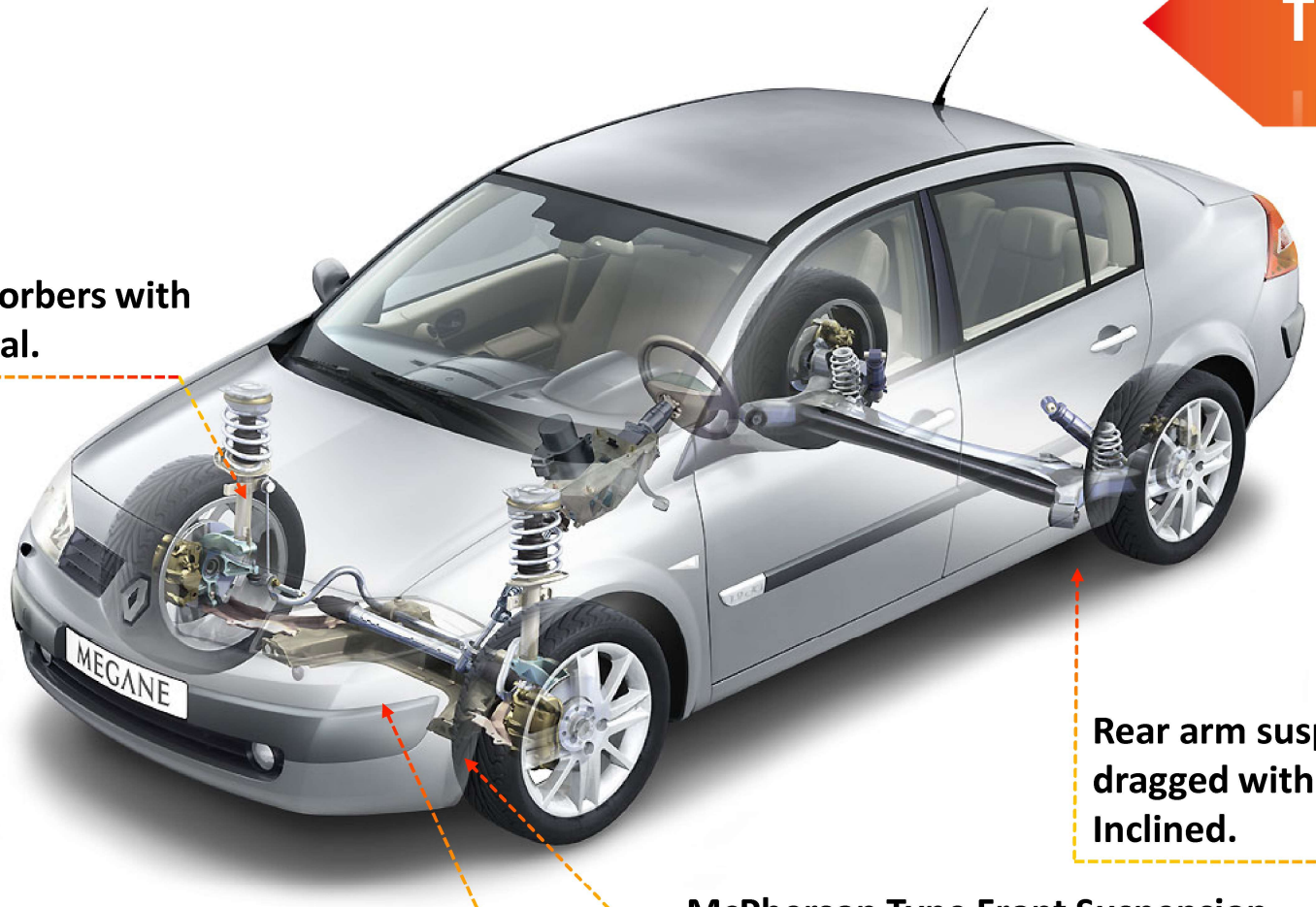
The Suspensión



Shock absorbers with offset spiral.

Rear arm suspension dragged with shock absorbers Inclined.

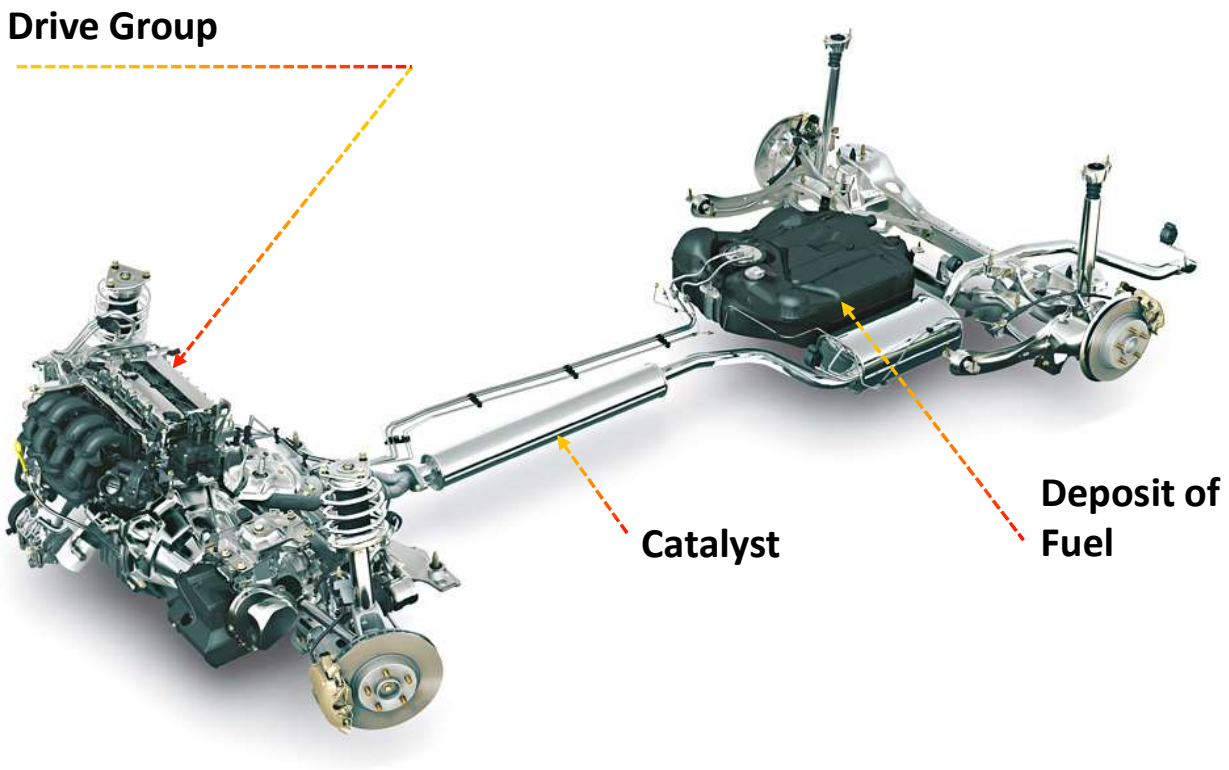
McPherson Type Front Suspension mounted on stamped sheet metal frame.

Power steering box built-in electric.

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The platform

The Suspensión



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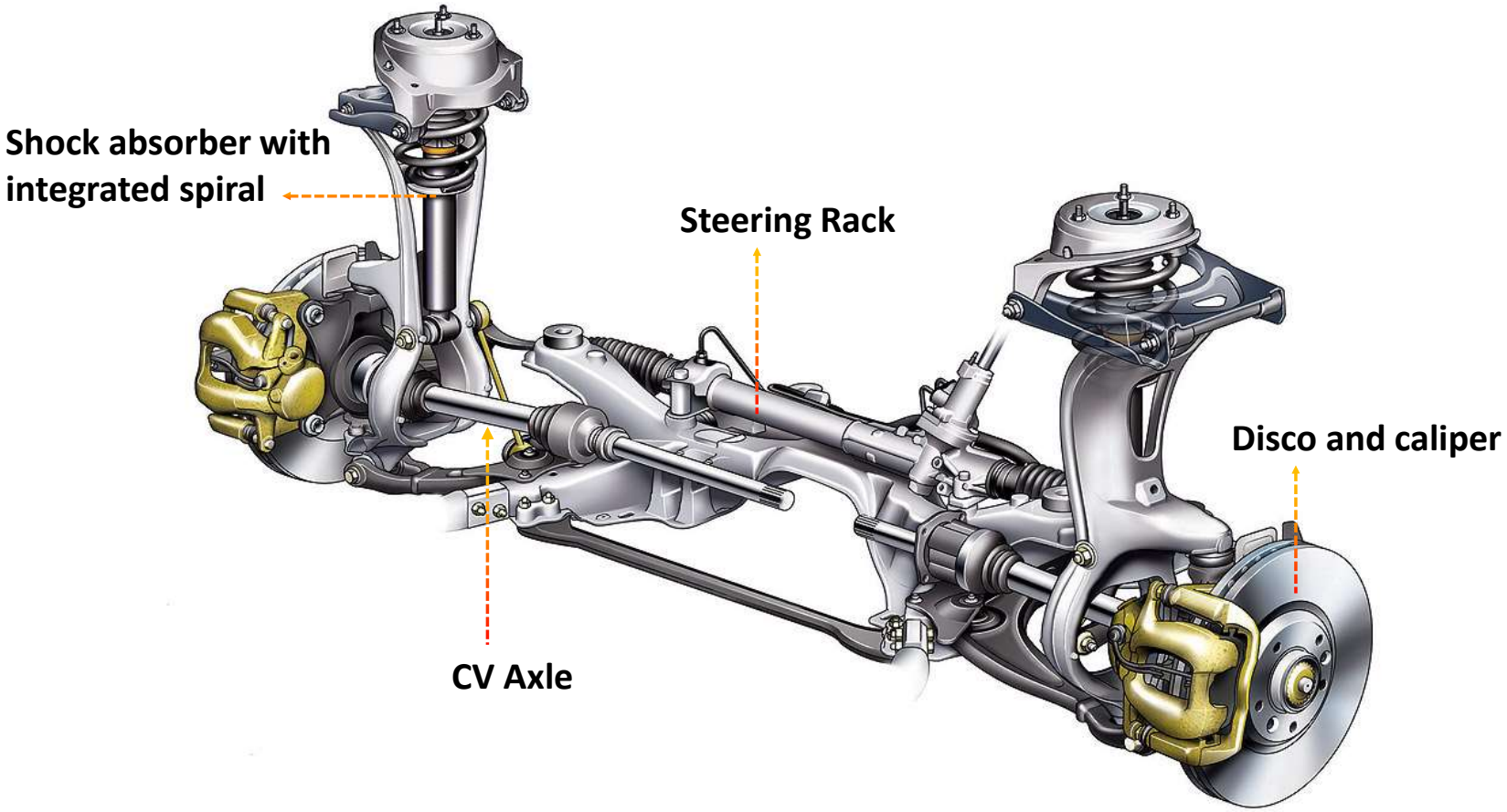
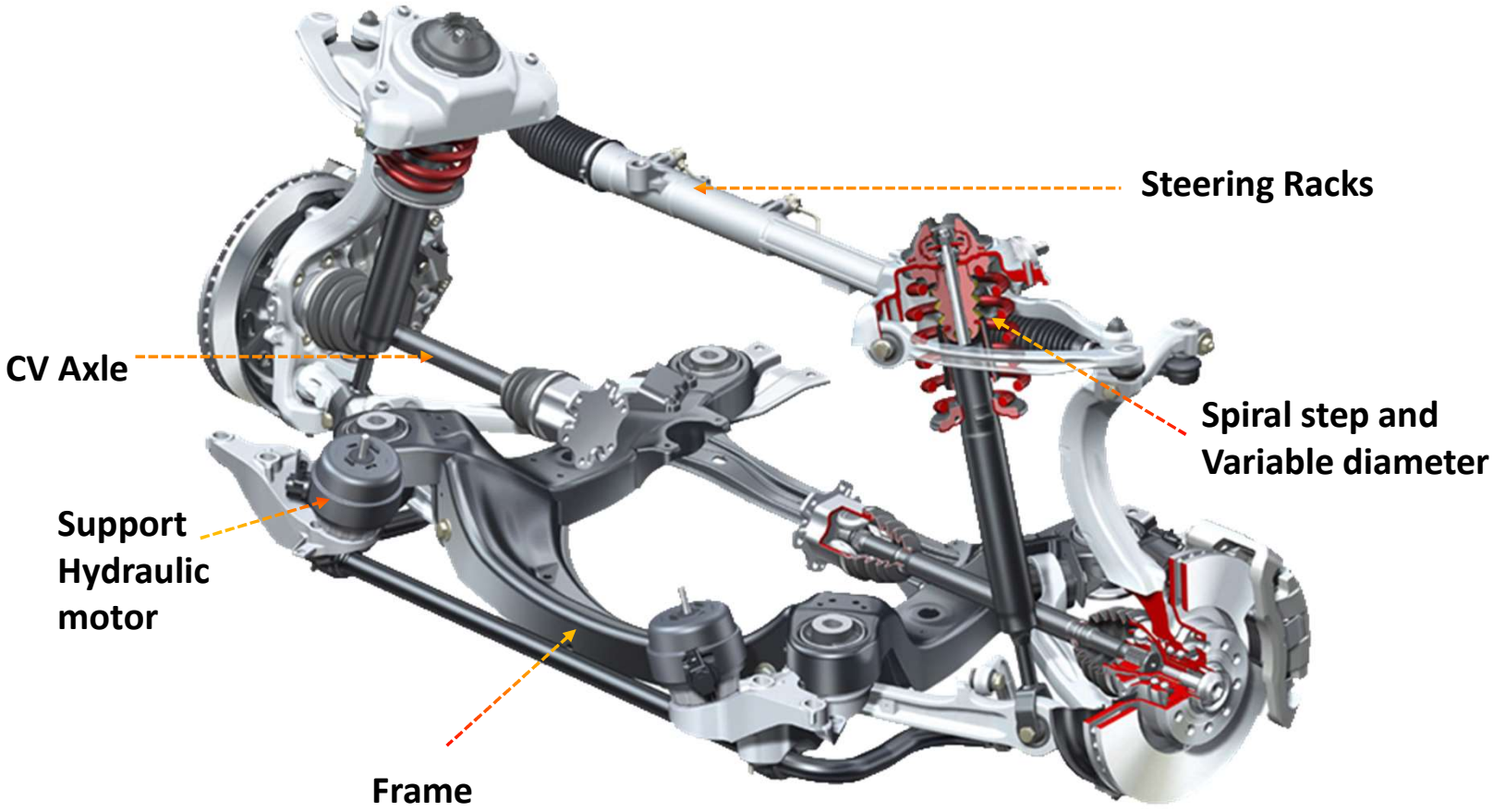
PURCHASE & LOGISTIC SERVICE

Forward Train



Forward Train

The Suspensión



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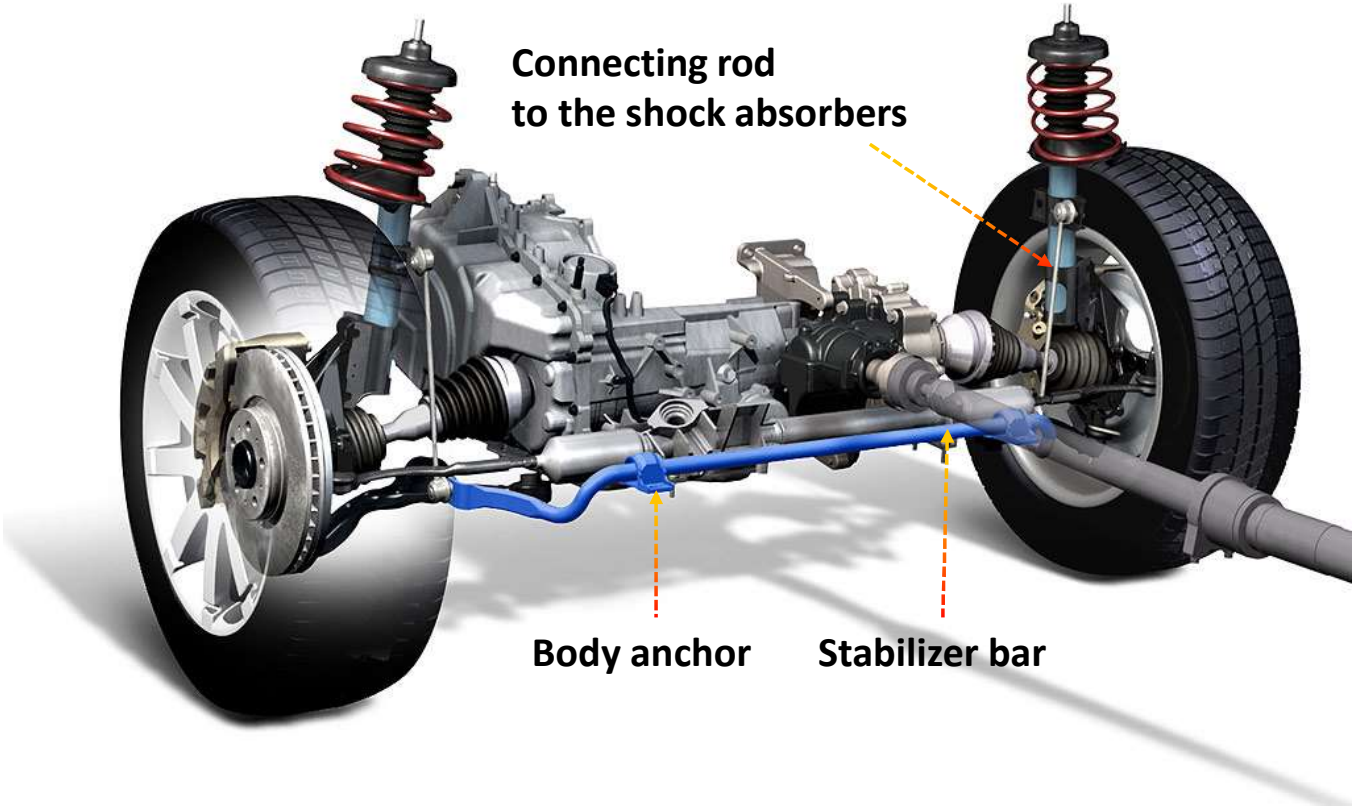
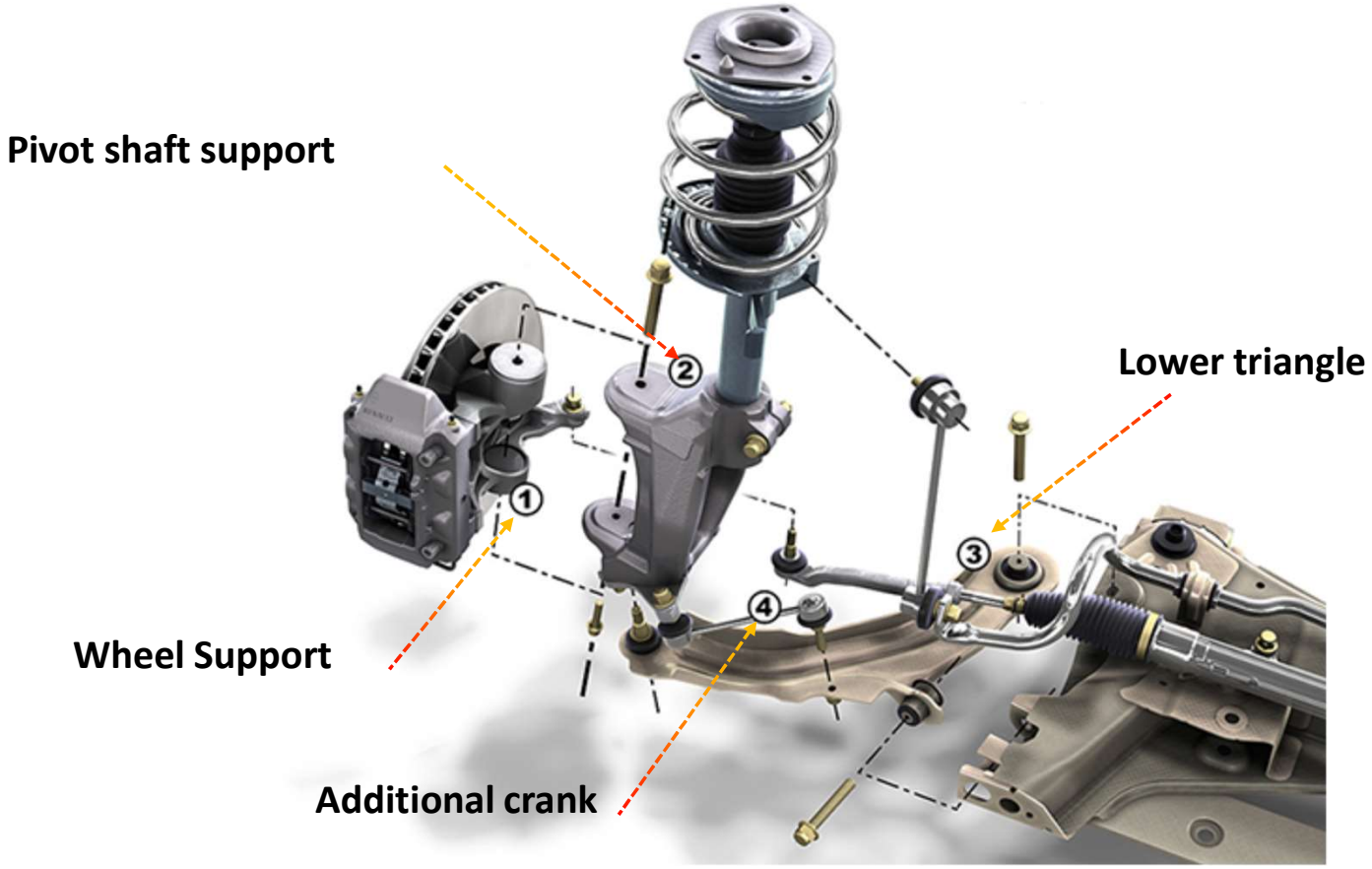
PURCHASE & LOGISTIC SERVICE

Stabilizer bar



Front Train Geometry

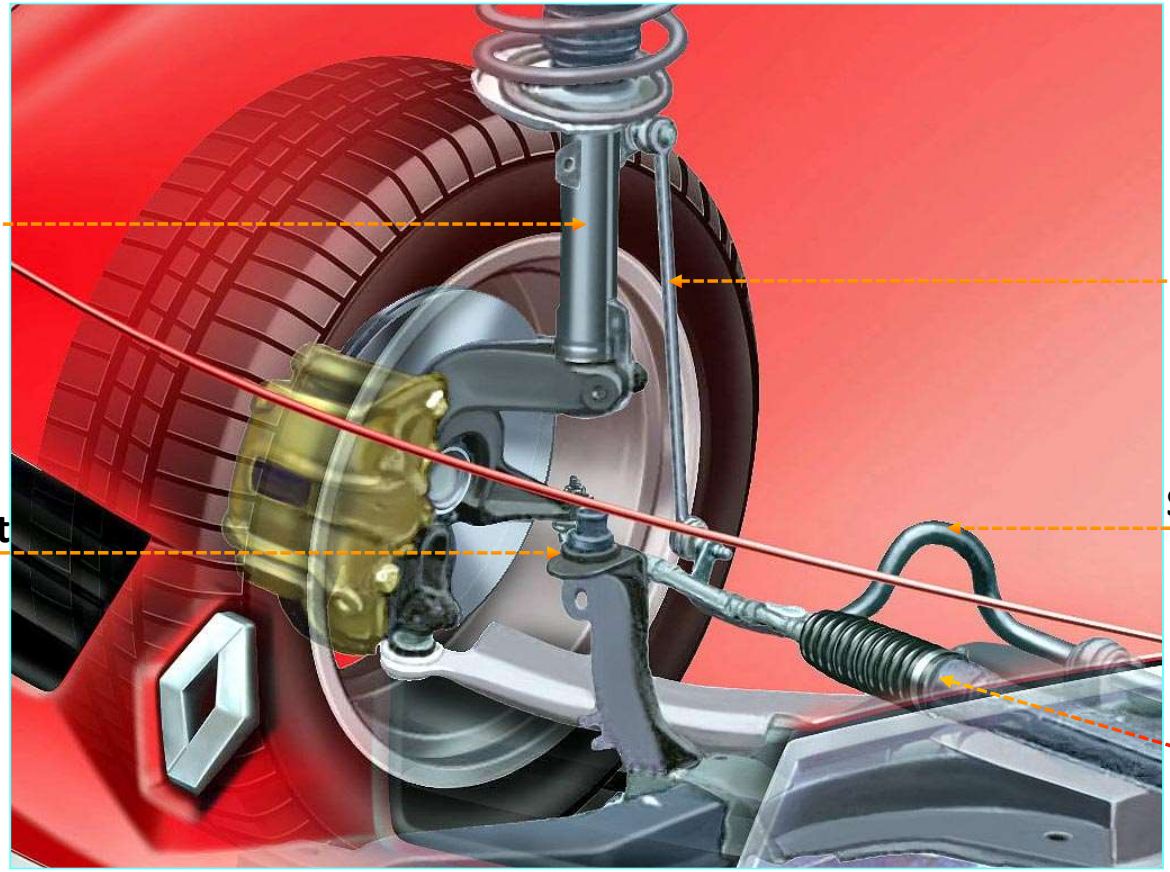
The Suspensión



WM Spare Parts
PURCHASE & LOGISTIC SERVICE

Tren Delantero

The Suspensión



Shock absorber with spiral off center

Lower ball joint

Connecting rod

Stabilizer bar

Address Box electric assisted variable

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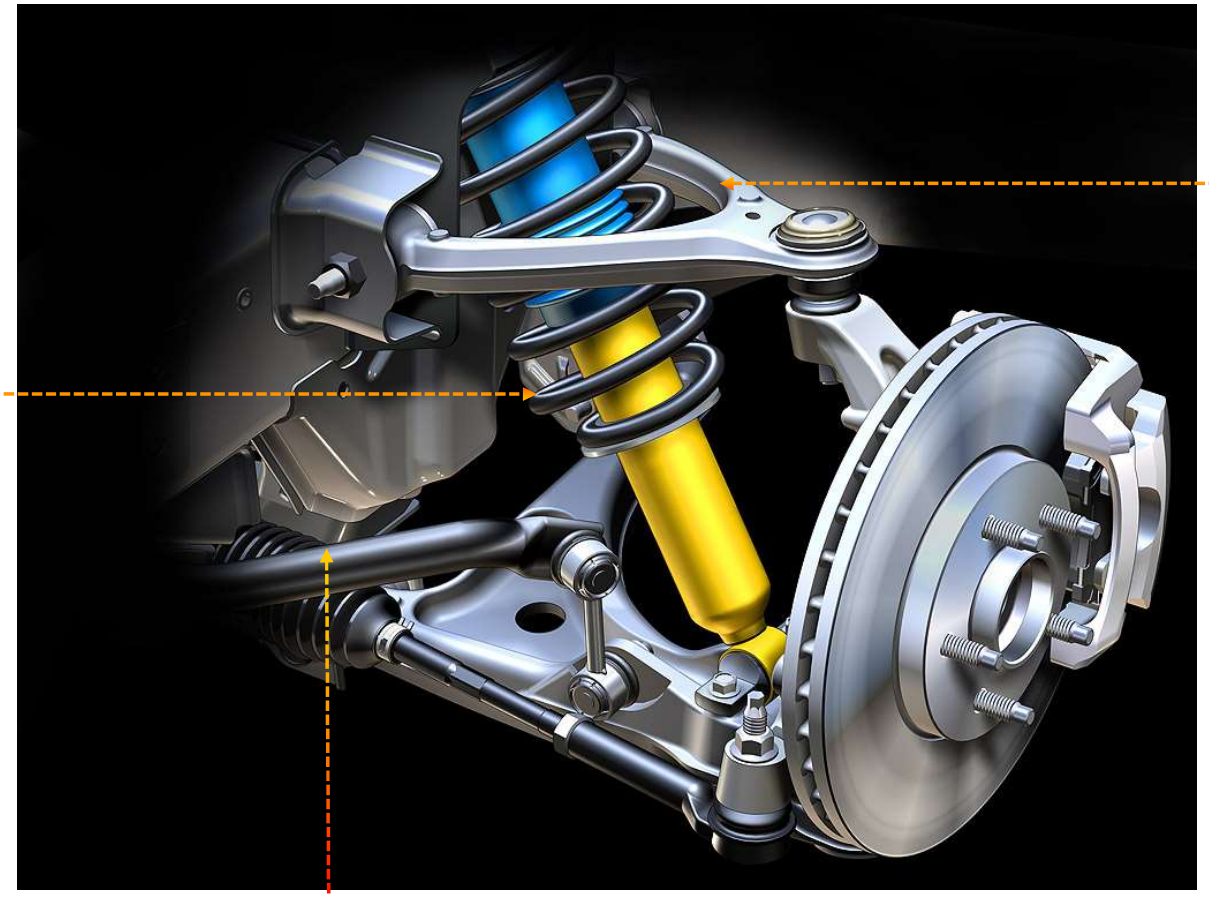
PURCHASE & LOGISTIC SERVICE

Forward Train

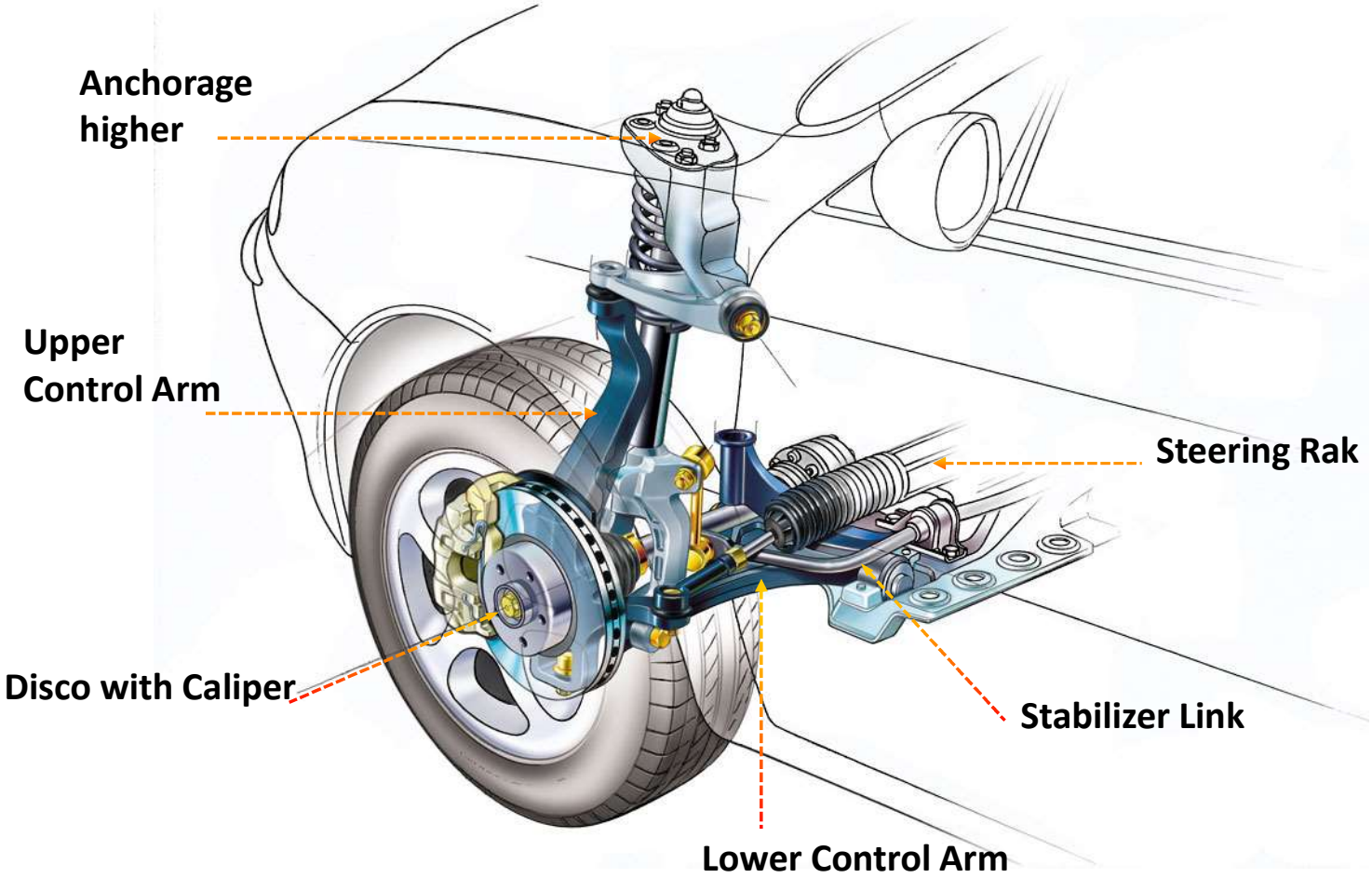
The Suspensión



WM Spare Parts
PURCHASE & LOGISTIC SERVICE

Forward Train

The Suspensión

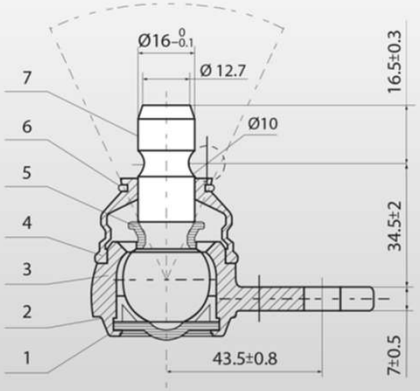


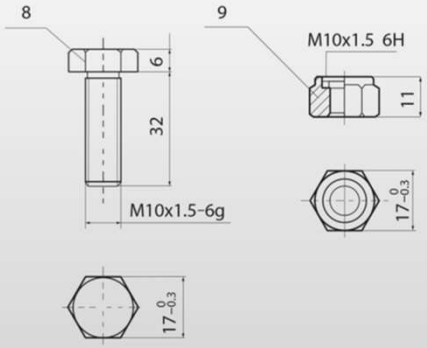
WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR BALL JOINT





1.PLATE COVER: Q235
2.BALL SEAT : 500P
3.HOUSING :45#
4.DUST COVER:CR
5.RING:PUR
6.CLIP RING:65Mn
7.BALL PIN:40Cr

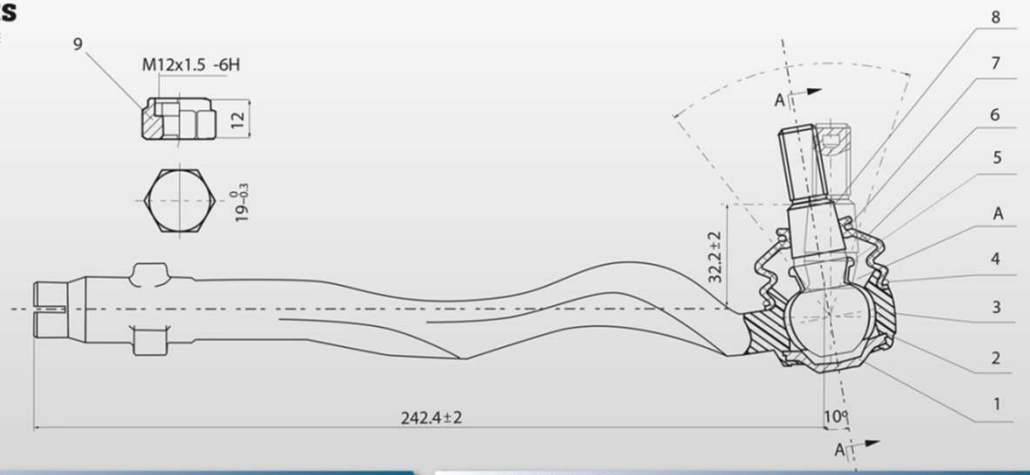
8.HEX HEAD CAP SCREW:ML35
9.NYLON LOCK NUT
PROTECTION COVER: PP
INSIDE GREASE: 2# LITHIUM LUBRICATING GREASE
SURFACE : ELECTROPHORESIS
BOX:WHITEBOARD STRONG E-CLASS CORRUGATED PAPER WITH SHINGING SURFACE

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR TIE ROD ENDS



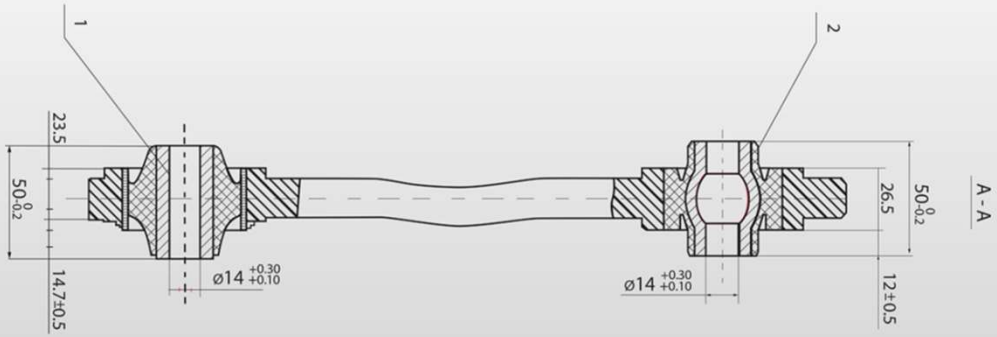
1.PLATE COVER: Q235	7.CLIP RING:65Mn
2.BALL SEAT : 500P	8.BALL PIN:40Cr
3.HOUSING :45#	9.NYLON LOCK NUT
4.CLIP RING:65Mn	PROTECTION COVER: PP
5.RING:PUR	INSIDE GREASE: 2# LITHIUM LUBRICATING GREASE
6.DUST COVER:CR	SURFACE : ELECTROPHORESIS
	BOX:WHITEBOARD STRONG E-CLASS CORRUGATED PAPER WITH SHINGING SURFACE

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR CONTROL ARMS



1.INNER TUBE:1020/6061T6 RUBBER:NR

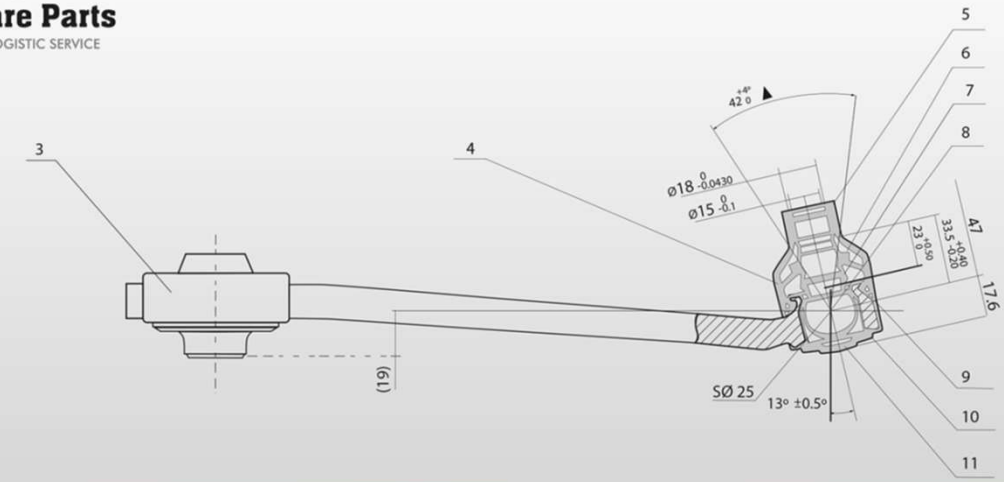
2.OUTER TUBE:1020/6061T6 RUBBER:NR

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR CONTROL ARMS



- 3.HOUSING:45# (FORGING) / ST12 (STAMPING) /6082 (ALUMINUM)
- 4.PROTECTION COVER:PP
- 5.BALL PIN:40Cr
- 6.CLIP:65Mn
- 7.NECK GUARD:PU
- 8.DUST COVER:CR
- 9.CLIP:65Mn
- 10.BALL PIN:500P
- 11.PLATE COVER: Q235
- 12.BAG:PE
- 13.PLT:PLYWOOD
- INSIDE GREASE: 2# LITHIUM LUBRICATING GREASE
- SURFACE : ELECTROPHORESIS

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR CONTROL ARMS

COMPONENTS	COMPONENTS
45#	ST12
C:0.42~0.50 Si:0.17~0.37 Mn:0.50~0.80 P: ≤0.035 S: ≤0.035 Cr:≤0.25 Ni:≤0.25 Cu:≤0.25	C≤0.10 Mn≤0.50 P≤0.035 S≤0.035 Alt a≥0.020
40Cr	1020
C:0.37~0.44 Si:0.17~0.37 Mn:0.50~0.80 Cr:0.80~1.10 Ni:≤0.30 P:≤0.030 S:≤0.030 Cu:≤0.30 Mo:≤0.10	C:0.17~0.23 Si:0.17~0.37 Mn:0.35~0.65 P: ≤0.035 S: ≤0.035 Cr:≤0.25 Ni:≤0.30 Cu:≤0.25

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR CONTROL ARMS

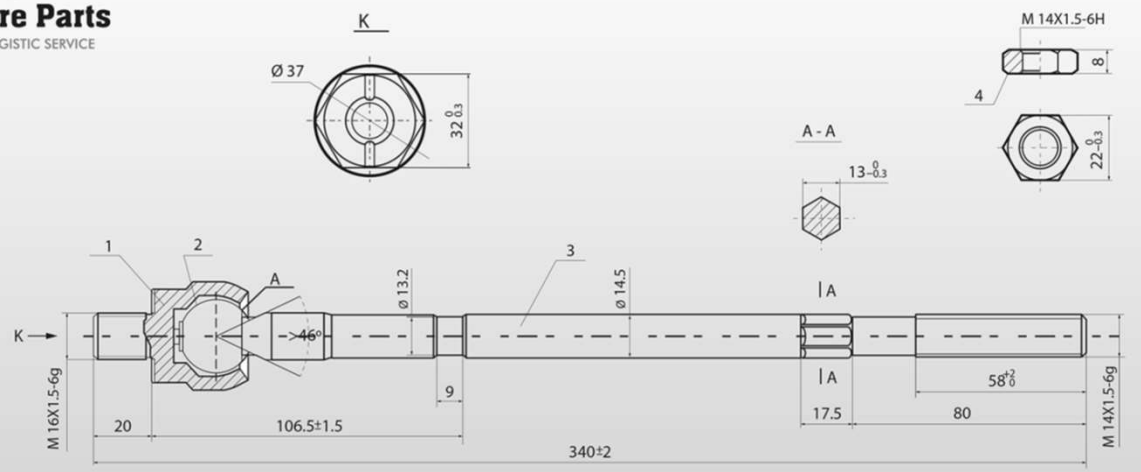
COMPONENTS	
6061	Cu: 0.15～0.4 Mn: 0.15 Mg: 0.8～1.2 Zn: 0.25 Cr: 0.04～0.35 Ti: 0.15 Si: 0.4～0.8 Fe: 0.7 Al: Remaining
6082	Si：0.7~1.3 Fe：0.50 Cu：0.10 Mn：0.40~1.0 Mg：0.6~1.2 Cr：0.25 Zn：0.20 Ti：0.10 Al：Remaining

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR AXIAL (PRECAP)



1.HOUSING: 20 Cr

2.BALL SEAT:500 P

3.BALL PIN:40Cr

4.SIX ANGLE FLAT NUT:45#

INSIDE GREASE: 2# LITHIUM LUBRICATING GREASE

SURFACE : ELECTROPHORESIS/PHOSPHORIZATION

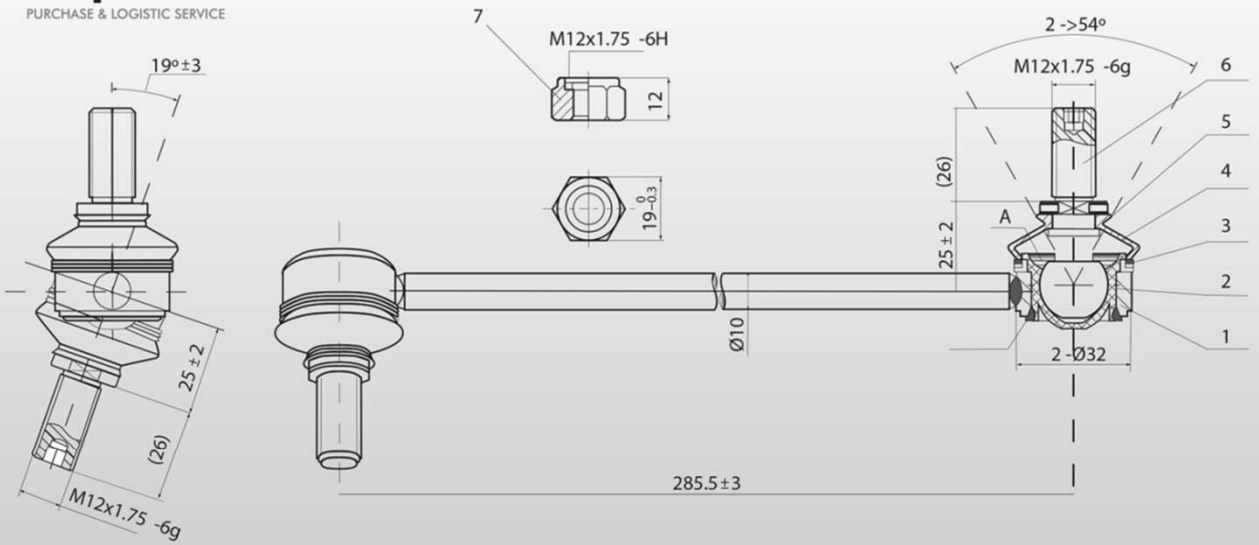
BOX:WHITEBOARD STRONG E-CLASS CORRUGATED PAPER WITH SHINGING SURFACE

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

MATERIAL REPORT FOR STABILIZER LINKS



1.WELDING PART	7.NYLON LOCK NUT
2.BALL SEAT : 500P	PROTECTION COVER: PP
3.CLIP RING:65Mn	INSIDE GREASE: 2# LITHIUM LUBRICATING GREASE
5.RING:PUR	SURFACE : ELECTROPHORESIS
6.BALL PIN:40Cr	BOX:WHITEBOARD STRONG E-CLASS CORRUGATED PAPER WITH SHINGING SURFACE

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

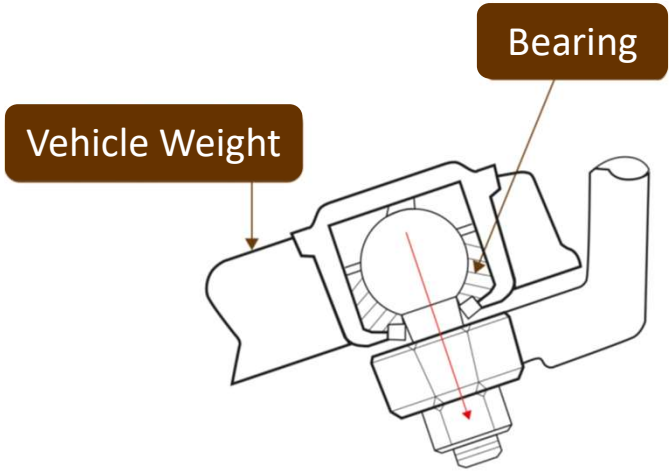
WHAT IS A BALL JOINT?

- The Ball Joints allow the movement of the suspension in the three axes, they are small parts in relation to the effort they make and the wear they suffer, so their design and manufacturing is very important for the safety of the occupants of the vehicle.

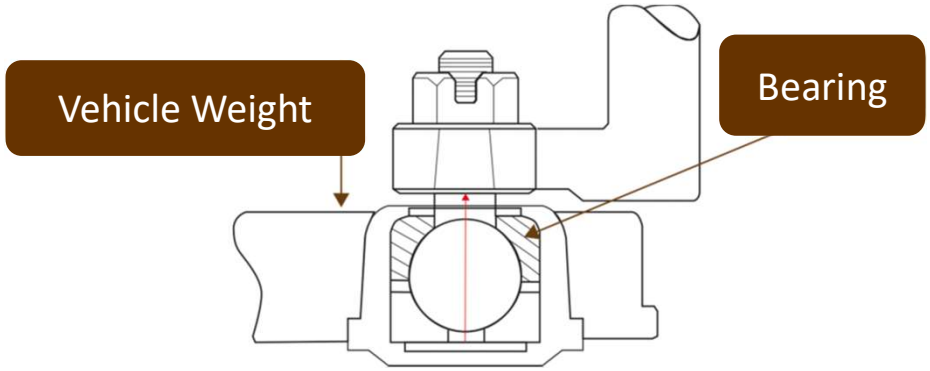
- From the mechanical point of view, it allows movement in all directions (up, down and the rotation of the wheels) and is the union between the hub holder and the control arms. From the point of view of security, due to its function, it cannot be a very large part, it must be small and therefore very resistant. It is also the part of greater wear because it is the one with the greatest movement.

- According to its function, there are two types of ball joints: loading and follower. Likewise, the load joints can be divided into compression joints and tension joints according to the way in which they receive the weight of the vehicle.

The Suspensión



Load Ball Joint working on compression

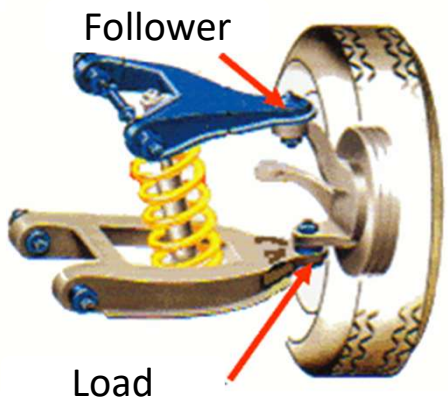


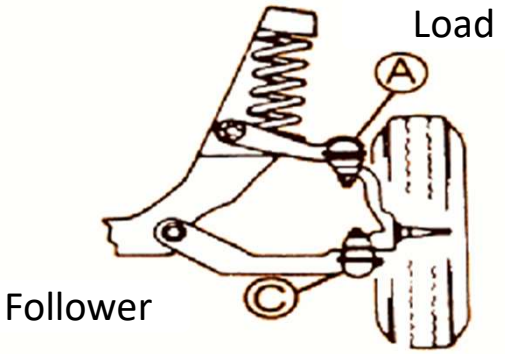
Load Ball Joint working in tension

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

Follower and Tension Load Ball Joints	Follower and Compression Load Ball Joint
In this example, the spring is supported on the lower fork, therefore the weight of the vehicle is transferred from the frame to the spring and in turn to the lower Ball Joint which, in this case, is under tension, since the spring pulls it towards down and the wheel hub is pulling it up (directions away from each other). The upper Ball Joint, does not load the weight of the vehicle, follows the movement of the wheel.	In this example, the spring is supported on the fork or upper arm, the weight of the vehicle is transferred from the frame, to the spring, to the arm and to the Ball joint. In this case, the Ball Joint works under compression as the arm pushes it down and the wheel hub pushes it up (directions that meet one another) The lower Ball Joint, does not load the weight of the vehicle, follows the movement of the wheel.





WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

- Since it is a safety piece and is subject to great efforts, the Ball Joints must be manufactured with materials and processes that guarantee that it will work properly, that it will resist impacts and that it will have an acceptable lifespan. The components, and their quality, vary from manufacturer to manufacturer.

WM Spare Parts
PURCHASE & LOGISTIC SERVICE

The Suspensión

Component	Function	CRUMEX Specification	Specification of Low Quality products
Pin 	*Supports vehicle weight and / or bumps and side loads when turning.* *It allows the wheel hub to rotate and allows the suspension to go up and down.*	*Heat treated steel tempered, forged? The heat treatment gives flexibility characteristics to withstand blows and resistance to withstand forces.*	*Steel, in some cases machining that reduces the resistance by the concentration of stresses in the micro cracks (roughness) left by the cutting tool.*
Housing 	*The forces received by the bolt, in all directions, are transmitted to the housing, whose walls must withstand them.* *It also houses the rest of the components allowing their movement and resisting wear.*	*Heat treated steel to increase resistance to shocks and the forces to which it is subjected.*	*Standard steel that, may work well at the beginning but that, or does not resist the forces to which it is subjected or does not resist wear causing play of the suspension.*
Dust Cover 	*The shirt allows the movement of the patella in all directions. It is a piece that is in friction with other components of the patella.*	*Sintered metal with high wear resistance and that prevents it by facilitating lubrication by housing grease particles in the pores in the material.*	*Plastic, usually nylon. It works well at first, but it wears out quickly causing the suspension to loosen and rattle.*

The Suspensión

Component	Function	CRUMEX Specification	Specification of Low Quality products
Grease 	*The grease fitting can lubricate the Ball Joint to prolong its life. When injecting fresh fat, through the grease, dirty grease is pushed out by other spaces.*	*It includes grease.*	*It does not include grease.*
Plate of Pressure 	*The pressure plate keeps the components with the right fit, improving the performance and life of the product. Prevents the suspension from loosening.*	*Heat treated steel.*	*Generally they do not have it to reduce costs, but also the life of the patella.*
Rubber Shock absorber 	*Rubber shock absorber allows the kneecap to continue running for longer, pressing the components to prevent the suspension and jingle from loosening.*	*Rubber Shock Absorber*	*Generally they do not have it to reduce costs, but also the life of the Ball joint.*

The Suspensión

Component	Function	CRUMEX Specification	Specification of Low Quality products
Dust cover 	*Used to protect internal parts from dust, water and other contaminants that damage internal lubrication.*	*Neoprene that has high resistance to fats.*	*Nylon or rubber with some fat resistance but economical.*