



2018 - 2019



QUERÉTARO AUTOMOTIVE MAPPING
AUTOPARTS MANUFACTURING CAPABILITIES



M.V.Z. Francisco Dominguez Servien
Governor, State of Querétaro

Ing. Marco Antonio del Prete Tercero
Minister of Sustainable Development, State of Querétaro
Ing. Antonio Herrera Rivera
President, Querétaro Automotive Cluster

BOARD OF DIRECTORS:

Ing. Esteban Renato Villaseñor Mendoza
Lic. Bernardo Narro Vera
Ing. Raúl Lizarriturri Martínez
Ing. Mario Alberto Pérez Orozco
Ing. Armando D'Acosta Ruíz
Ing. Arturo Campos López
Lic. Héctor Epardo González
C.P. Antonio Vázquez Castellanos
Ing. Isidoro Mata Cano

RESERCH, WRITING AND EDITING

Ing. Daniel Hernández Camacho
Ing. Nelly Tenorio Aguilar
Querétaro Automotive Cluster

OFFICES

Antea Avenue 1088, 3rd Floor
Querétaro Business Park
Jurica, 76100
Querétaro, Qro.

The information contained in this document is the exclusive property of Querétaro Automotive Cluster, this information may not be exhibited, reproduced, distributed or published without the express permission of the author of this document. Third Party information is cited source.





QUERETARO GOVERNOR MESSAGE

Querétaro today is open to the world, open to ideas and innovation, to integrating and linking its productive sectors.

Here we combine the productive force of industry and individual companies with the knowledge of universities and research centers, adding to it all the impulse and the assistance that the government can give.

This growth model has had a favorable impact on sectors such as the automotive industry: the most productive in the state. It maintains an upward trend and provides more than fifty thousand quality jobs, with an Automotive Cluster that has 66 members.

The present mapping of the automotive sector contributes precisely to this dynamic of growth by integrating fundamental information for the decision making. It reveals why the manufacture of auto parts and automotive vehicles represented almost 25% of the total Foreign Direct Investment (FDI) reported during the first semester of 2017 in our state; or why it reached a production value of more than 47 billion pesos, just from January to August of this 2017.

This edition serves to obtain an opportune approach to the actors, to the educational institutions and research centers that provide the industry with highly specialized human capital; to understand the logistical infrastructure used to move products, services and people from Querétaro to any part of the world.

The automotive sector is built with the ideas and work of everybody.

Querétaro is in us!

Francisco Domínguez Servián
Constitutional Governor of Querétaro

PRESIDENT CLUSTER MESSAGE

Querétaro has a tradition in the automotive industry that dates back to the beginning of the 60s. After more than 50 years of experience the State has lived colossal changes that have promoted the industrial development which has not only impacted the automotive sector but also other sectors. Labor force specialization, the development of a strong supply chain, the industrial infrastructure growth, this are some examples of the Automotive legacy to Queretaro society.

With the foundation of the Automotive Cluster in June 2013, the key players of this sector have found the right channel to boost their efforts. This integration has made stronger the already successful relationship between private sector and the State Government and has aligned the hard work the universities and R&D centers had built during the years.

Thanks to this association is possible to accomplish new projects like this mapping that will enhance the consolidation of the Automotive Sector, this document shows the evolution that the Sector has had, we can recognize the technological development from metalworking processes with intensive labor force to the development of electronic systems for automobile, manufacturing of safety components and the consolidation of engineering center inside the companies. This document reveals the exponential growth we have experienced over the past years which has promoted the arrival of new investment to the entity.

We trust that this project will offer information that will guide you with decision making based on the productive capabilities of auto parts manufacturers that have been identified and will aloud you to take advantage of the time that Querétaro and Mexico is living regarding the automotive sector

Ing. Antonio Herrera Rivera
President, Querétaro Automotive Cluster



CONTENT INDEX

- 05 **QUERETARO**
MANUFACTURING INDUSTRY
- 06 **GLOBAL LIGHT VEHICLE PRODUCTION**
(1997-2025)
- 07 **PRODUCTION AND EXPORT MARKET**
OF VEHICLES, 2016
- 08 **PRODUCTION OF LIGHT VEHICLES**
IN NAFTA REGION
- 09 **OEMS INVESTMENTS ANNOUNCEMENTS**
2008 - 2017
- 10 **OEMS LIGHT VEHICLES**
IN MÉXICO
- 11 **DESIGN & ENGINEERING**
CENTERS
- 12 **HEAVY VEHICLES**
PRODUCTION SITES
- 13 **LIGHT VEHICLE PRODUCTION IN MEXICO**
2002-2022
- 14 **MEXICO AUTOPARTS**
PRODUCTION

CONTENT

INDEX

QUERETARO MANUFACTURING INDUSTRY



ALL

QUERÉTARO: 83,291
NATIONAL: 5,039,911

MANUFACTURING

QUERÉTARO: 7,405 / (8.9%)
NATIONAL: 528,153 / (10.5%)



MANUFACTURING JOBS

QUERÉTARO: 191,607 (35.5%)
NATIONAL: 3,711,857 (17.2%)



QUERÉTARO: 29.89%
NATIONAL: 17.2%



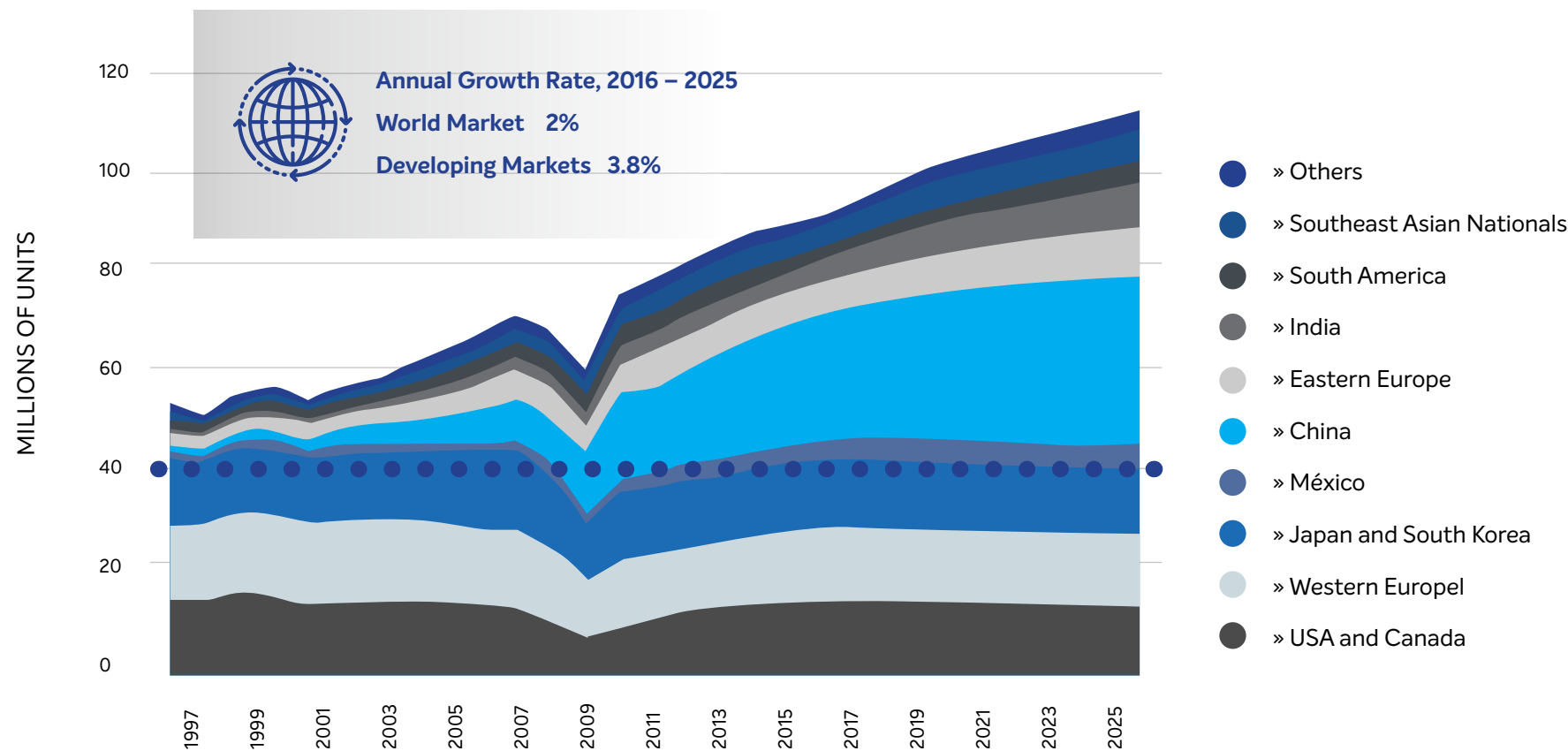
» **45** R&D CENTERS
» **28** TECHNICAL SCHOOLS

» **10** UPPER TECHNICAL SCHOOLS
» **61** UNIVERSITIES

SOURCE: 1 INEGI, 2017 | 2 INEGI, JULY 2017 | 3 INEGI, 2017 | 4 SEDESU, 2017

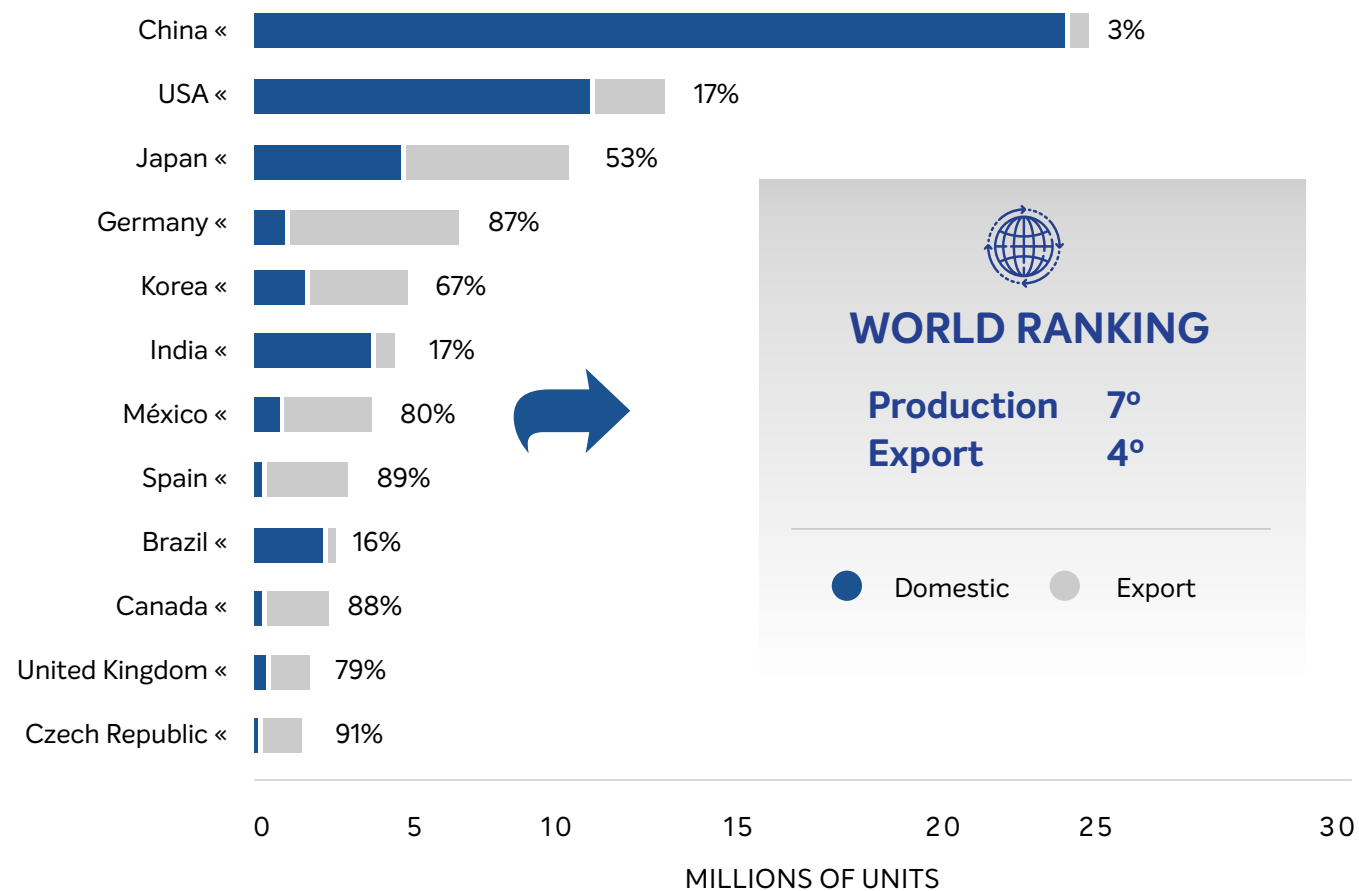
GLOBAL LIGHT VEHICLE PRODUCTION

(1997-2025)



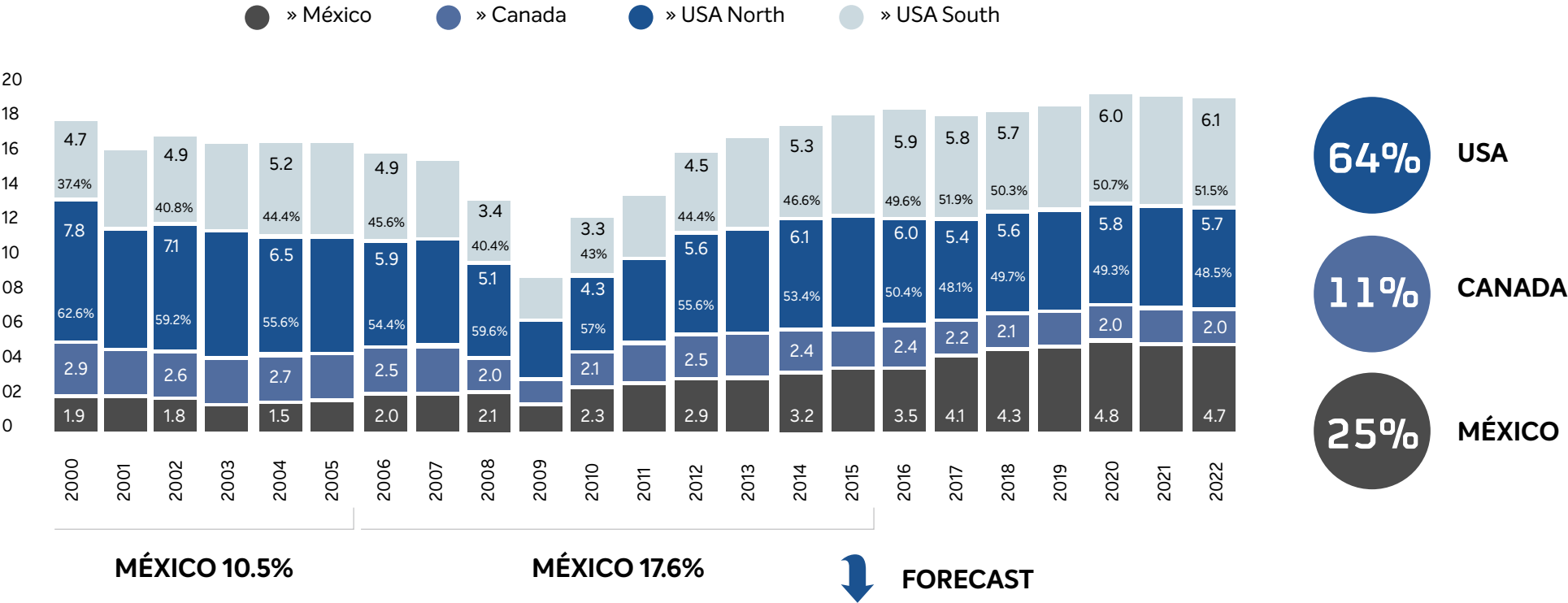
SOURCE: INA WITH DATA FROM IHS MARKIT

PRODUCTION AND EXPORT MARKET OF VEHICLES, 2016



SOURCE: INA WITH DATA FROM OICA & PROMÉXICO

PRODUCTION OF LIGHT VEHICLES IN NAFTA REGION



NAFTA= 17.8
Millions of
units

+3.9%

NAFTA= 18.5
Millions of
units



SOURCE: INA WITH DAT FROM IHS MARKIT

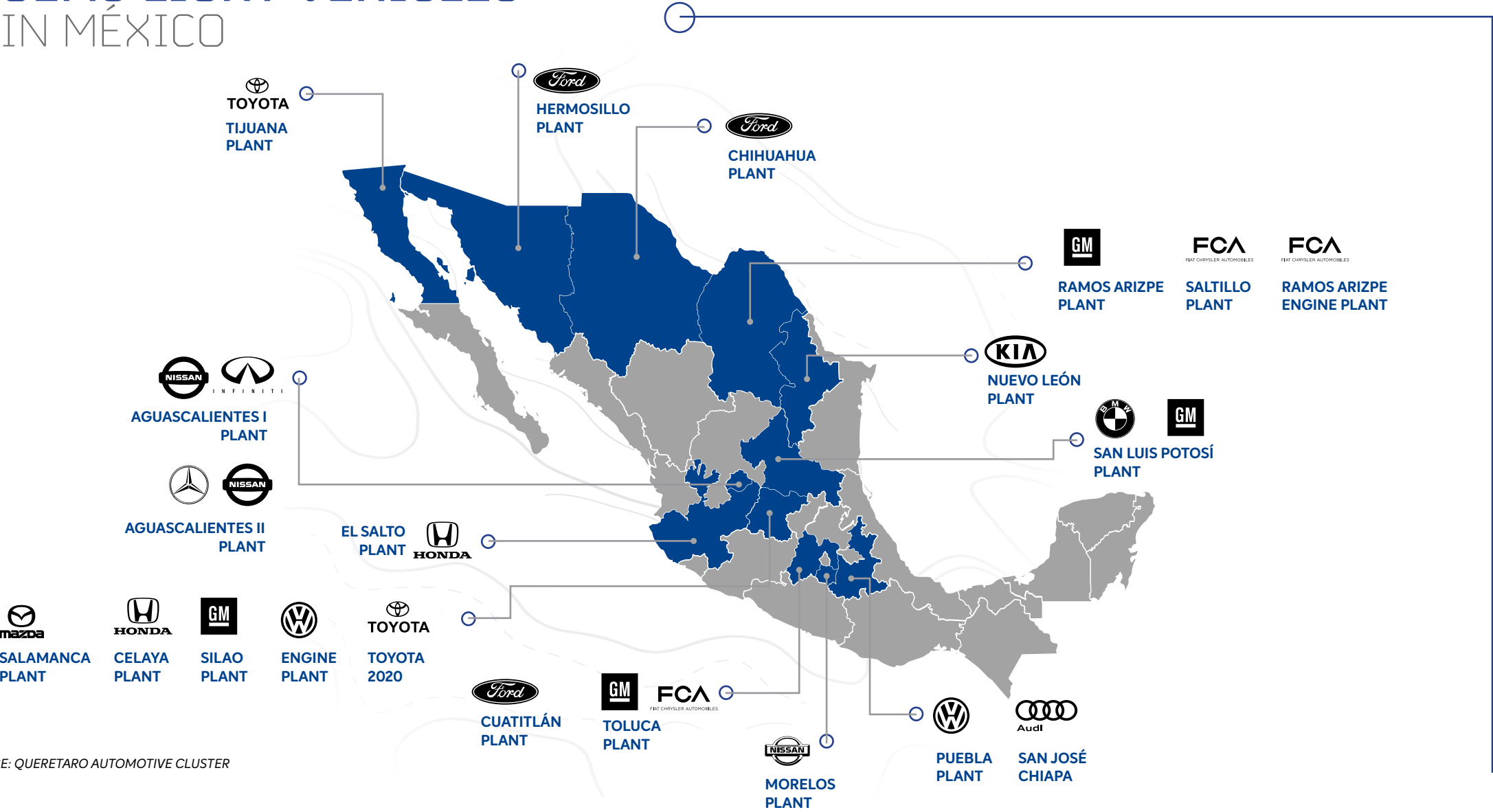
OEMS INVESTMENTS ANNOUNCEMENTS

2008 - 2017

COMPANY	2008-2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
Nissan	–	600	328	2,000	–	–	–	–	–	2,928
Nissan-Daimler	–	–	–	–	–	1,400	–	–	–	1,400
General Motors	300	1,360	540	–	691	–	–	–	–	2,891
Volkswagen	1,000	550	400	–	118	–	1,000	–	–	3,068
Ford	1,600	–	–	–	–	–	–	–	–	1,600
Ford-Getrag	–	–	–	–	–	–	1,200	–	–	1,200
Ford-Motores Chihuahua	–	–	–	–	–	–	1,300	–	–	1,300
Audi	–	–	–	–	1,300	–	–	–	–	1,300
Honda	–	–	800	–	470	–	–	–	–	1,270
FCA	500	–	–	–	1,249	–	–	–	–	1,749
Mazda	–	–	500	150	120	–	–	–	–	770
Daimler	300	–	–	–	45	–	–	–	–	345
KIA	–	–	–	–	–	2,300	700	–	–	3,000
BMW	–	–	–	–	–	1,000	–	–	–	1,000
Toyota	–	–	–	–	–	–	–	150	700	850
Toyota-Mazda	–	–	–	–	–	100	–	–	–	100

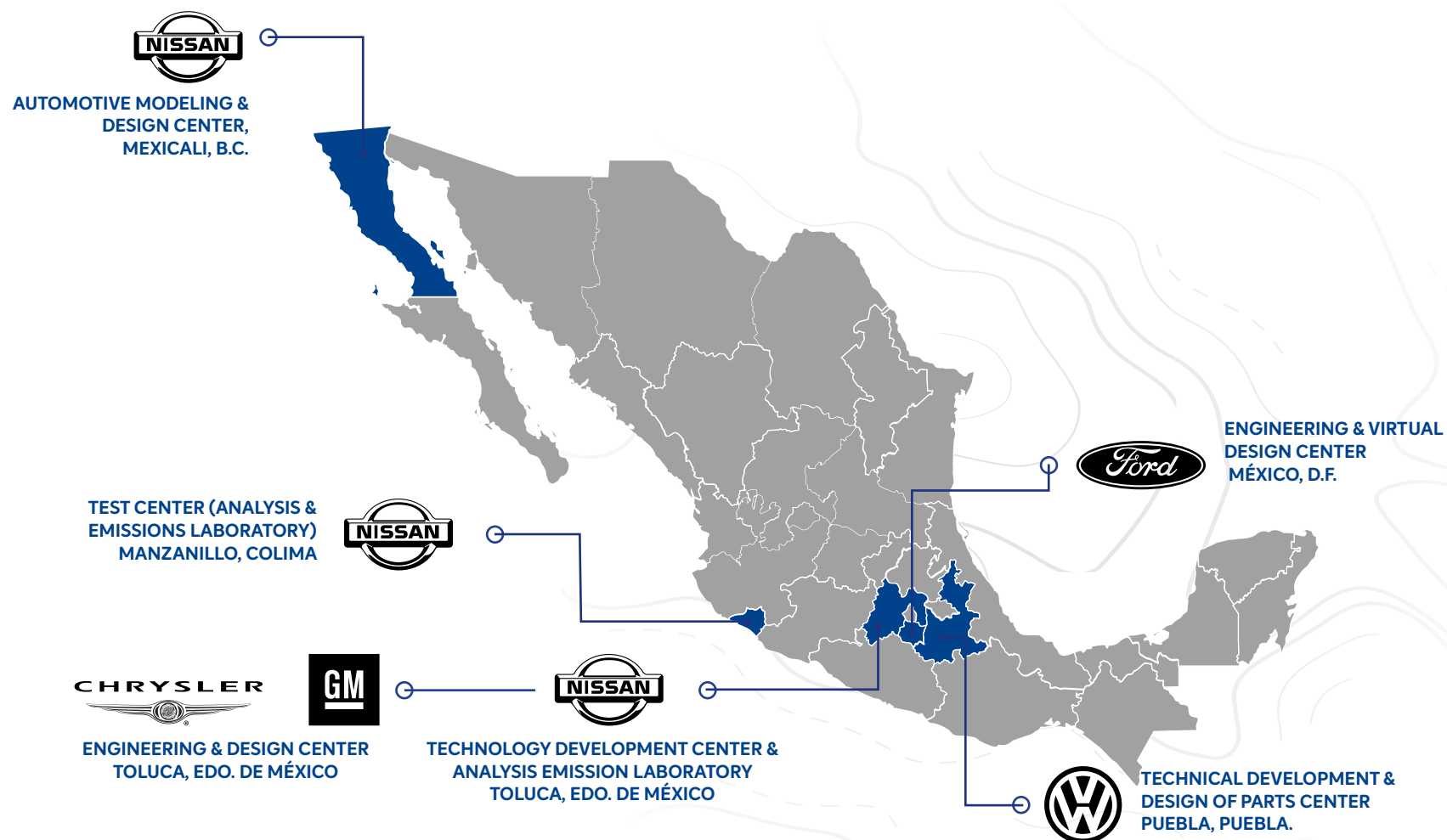
AMOUNTS IN MILLIONS USD - SOURCE: RESEARCH IN DIFFERENT MEDIA

OEMS LIGHT VEHICLES IN MÉXICO



SOURCE: QUERETARO AUTOMOTIVE CLUSTER

DESIGN & ENGINEERING CENTERS



SOURCE: ECONOMY MINISTRY,
MONOGRAFÍA DE LA INDUSTRIA AUTOMOTRIZ, 2012

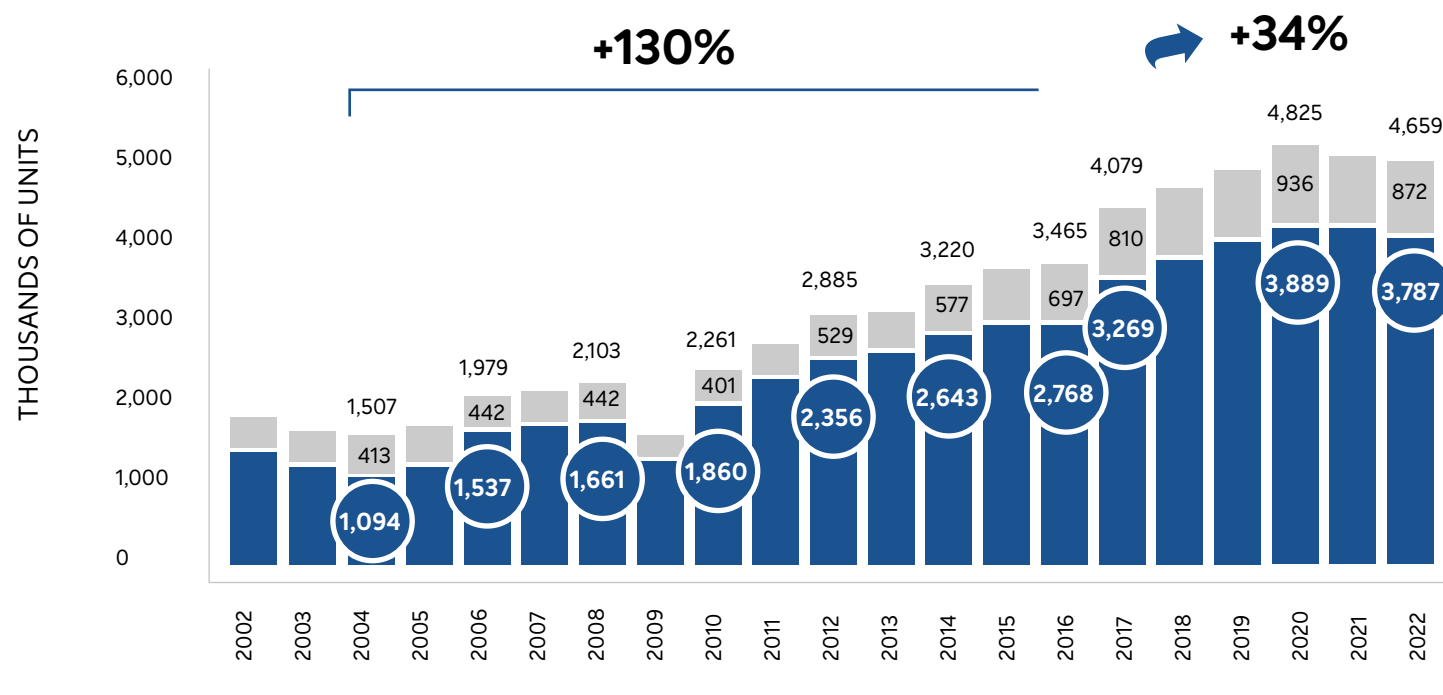
HEAVY VEHICLES PRODUCTION SITIES



SOURCE: ANPACT, QUERÉTARO AUTOMOTICE CLUSTER

LIGHT VEHICLE PRODUCTION IN MEXICO

2002-2022

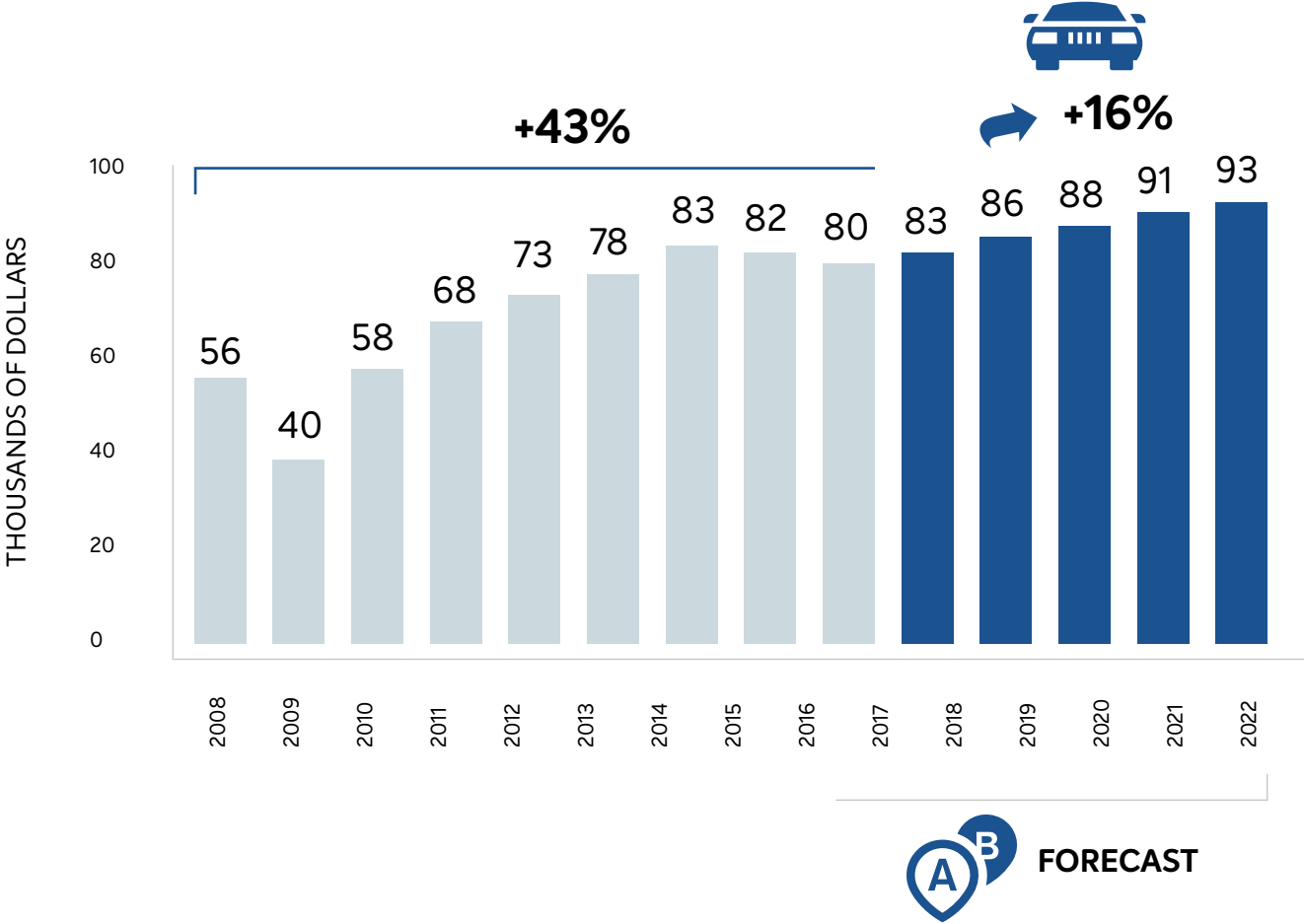


FORECAST

● » Production for export ● » Production for domestic market

SOURCE: INA WITH DATA FROM IHS MARKIT.

MEXICO AUTOPARTS PRODUCTION



SOURCE: INA WITH DATA FROM INEGI & IHS MARKIT

QUERÉTARO AUTOMOTIVE SECTOR



34.4%

Share of State
Manufacturing GDP¹



5,330
Millions USD

Autopart
Production (2015)²



28.5%

Share of total
Exports



2,281
MDD

Of FDI(2010-2017)¹



67,000

Jobs



National Distribution
Center (GM)



OEM, Bus, Tractor,
Recreational & Lightweight Car



R&D Centers



TR1
Companies



TR2
Suppliers














SOURCE: ¹ MINISTRY OF SUSTAINABLE DEVELOPMENT, STATE OF QUERÉTARO

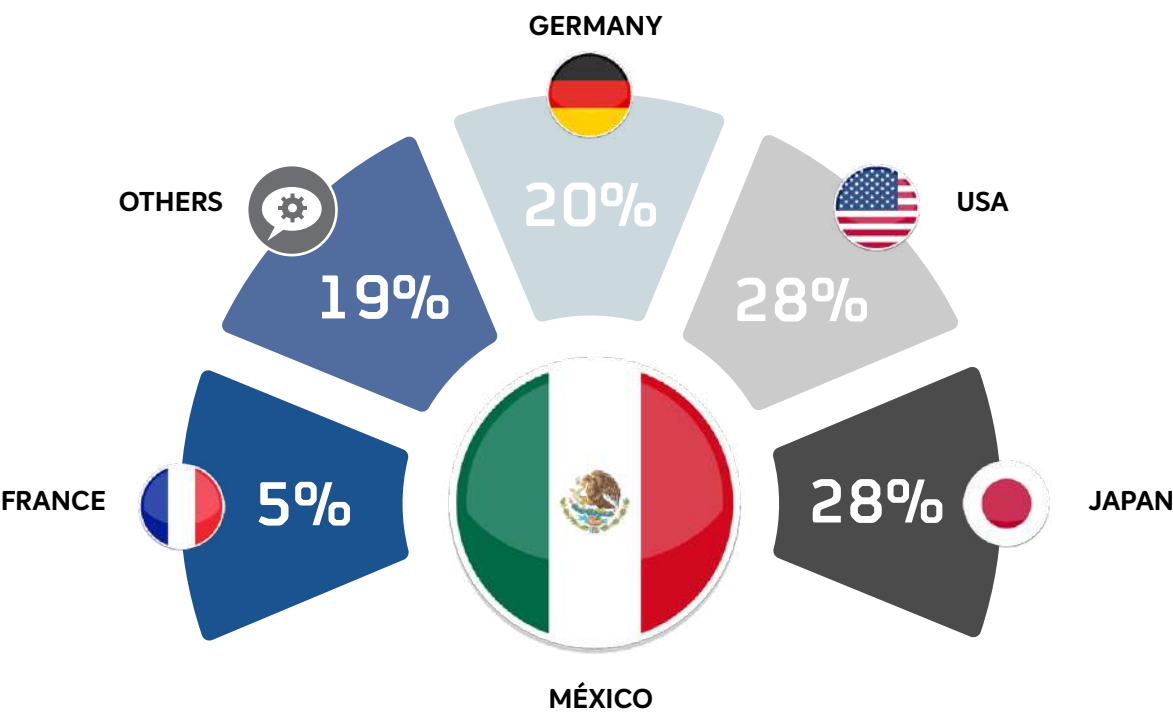
² INDUSTRIA NACIONAL DE AUTOPARTES –INA–

ORIGIN OF INVESTMENT

AUTOPARTS MAKERS

QUERÉTARO

PLANTS	COUNTRY	PORCENT
28		27%
20		19%
14		13%
12		12%
10	   	9%
3		5%
5		5%
4		4%
4		4%
4		3%



SOURCE: PROMÉXICO WITH DATA FROM AUTOMOTIVE NEWS.



GERMANY



28
PLANTS

KOSTAL

Benito Juárez
Industrial Park



Plant 1

brose
Technik für Automobile

Benito Juárez



Plant 1



Steering Systems



ECKERLE
GRUPPE

PRETTL

RONALGROUP

Vibracoustic



brose
Technik für Automobile

El Marqués

novem



Sistemas de frenado

OECHSLER

FORSCHNER
We know.

KOSTAL

Queretaro Industrial
Park

swoboda
moldingelements



Plant 2



BOSCH

brose
Technik für Automobile

Airport



Plant 1

Hirschvogel
Automotive Group
Traditionally innovative.



DURA
Automotive Systems



SPARK MINDA KTSN
ASHOK MINDA GROUP
Powered by Passion



JAPAN | USA



20
PLANTS



Peñuelas

El Marqués



PPG Industries



O'Donnell



San Juan del Río



El Marqués



Nihon Magnesio



KMEX



ABCINDAC



14
PLANTS



Cardanes



Cardanes



Engranés Cónicos



Forjas



CV Componentes



KMEX



DURA
Automotive Systems



Valeo

Planta 1



OTHERS



11
PLANTS



Plant 1



Plant 2



Plant 3



Queretaro Industrial
Park



5
PLANTS



Plant 65



Plant 66



4
PLANTS



Planta 1



Planta 2



4
PLANTS



Plant 1



OTHERS



03
PLANTS



02
PLANTS



03
PLANTS



01
PLANTS



03
PLANTS



01
PLANTS



02
PLANTS



Johnson Matthey

ACPS, México



01
PLANTS



Gebauer & Griller

START OF OPERATIONS BY PLANT



START OF OPERATIONS BY PLANT



O'Donnell



Nihon Magnesia



El Marqués



2000 - 2009

START OF OPERATIONS BY PLANT



2010 - 2018

START OF OPERATIONS BY PLANT

 San Juan del Río	 San Juan del Río	 San Juan del Río	 I+D	 I+D	 Plant 2
 Airport	 R & D CENTER	 Plant 2	 Plant 2	 Plant 2	 Plant 2
 Airport	 R & D CENTER	 Plant 2	 Plant 2	 Plant 2	
 Plant 2	 Plant 2	 Plant 2	 Plant 2	 Plant 2	 Plant 2

2010 - 2018

OEMS ESTABLISHED IN QUERÉTARO



RECREATIONAL VEHICLES

- » Rotax Engines
- » Transmissions for Can-Am off-road vehicles
- » Sea-Doo Spark PWC.



CHASSIS BUS

- » Models K420IB4X2NB and K380IB4X2NB
- » Trucks:
Model R340LA4X2NA
- » Busses:
Models P380CA6X4HSZ and P380CB8X4EHZ



NATIONAL DISTRIBUTION CENTER



BUSSES

- » R39

CHASSIS BUS

- » Models 8.150 and 9.150



TRACTORS

- » Capacities: Low, medium and high
- » Power: 75-140 hp.



TRUCKS

- » Models HD65 and HD78



BUSSES

- » PB
- » i6



ROAD-LEGAL LIGHTWEIGHT CAR

- » Model VUHL 05

R+D PRIVATE CENTERS



It is a JV between Condumex group and Delphi for design of automotive harnesses, also develops software and tests for automotive embedded systems.



R&D Center for new automotive products creation, such as:

- » Connectivity
- » Infotainment
- » ABS Controllers
- » Air Bag Controllers
- » Engine Controllers
- » Access & Comfort Control Systems
- » Sensors
- » Radars
- » Proximity Cameras



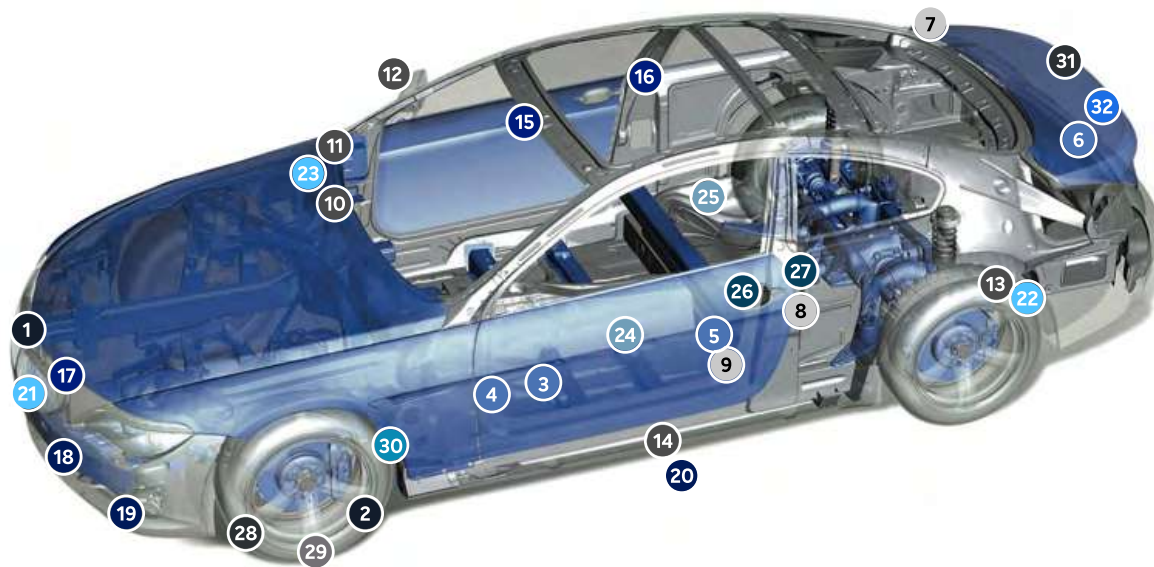
Design of Radio & Amplifiers for Premium Vehicles



Design of Torque Transfer Solutions for the automotive, agricultural and military industries

AUTOPARTS MANUFACTURING CAPABILITIES

BODY- EXTERIOR



32 AUTOPARTS / 14 SUPPLIERS

- 1 Emblem, Name Plate
- 2 Decorative Wheel Cover



- 3 Door Module
- 4 Sensor Slide Door Cable
- 5 Window Regulator
- 6 Trunk Opener Cable



- 7 Power Liftgates
- 8 Door Latch
- 9 Window Regulator



- 10 Cowl Vents
- 11 Air Inlet Panels
- 12 Garnish Molding
- 13 Wheel Liners
- 14 Rocker Panel



- 15 Windscreen Seal
- 16 Rear Window Seal
- 17 Hood Seal



- 18 Front Fascia
- 19 Bumper
- 20 Rocker Panel



- 21 Grill
- 22 Wheel Liners
- 23 Cowl Top Grille



- 24 Door Frames
- 25 Windows



- 26 Door Handle
- 27 Door Lock & Key Sets



- 28 Tire



- 29 Wheels



- 30 Protector Fender



- 31 Spoiler












- 32 Locks

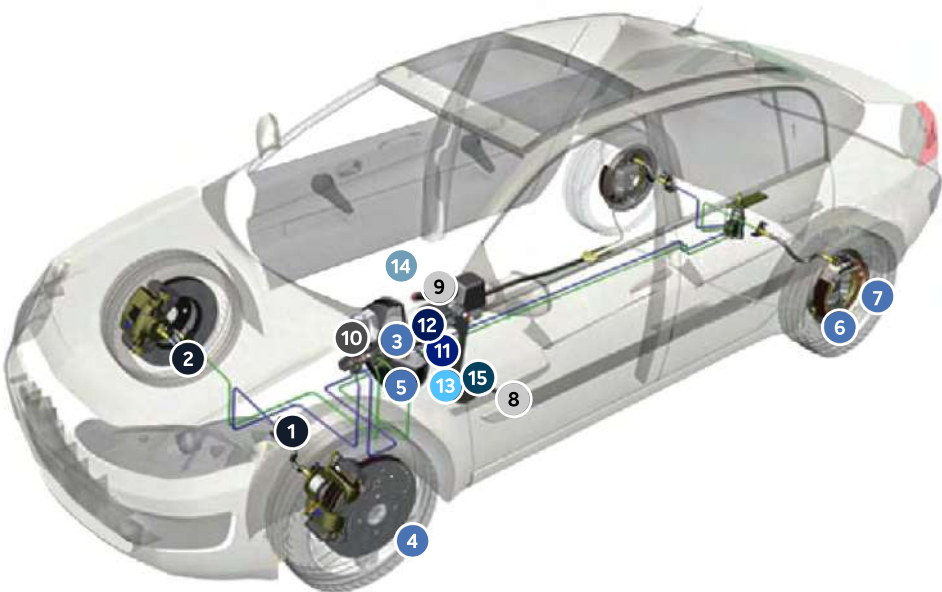


AUTOPARTS MANUFACTURING CAPABILITIES

BRAKE SYSTEM

19 AUTOPARTS / 11 SUPPLIERS

- 1 ABS Sensor & EPB Harnesses
 - 2 Brake Hose
 - 3 Master Cylinder
 - 4 Brake Disc
 - 5 Slip Control System
 - 6 Wheel Cylinder
 - 7 Brake Drum
 - 8 Brake Pedal
 - 9 Parking Break
 - 10 Drives for electronic braking systems
 - 11 Brush holder systems for ABS
 - 12 ABS Motor
 - 13 Actuator for Electronic Parking Brake
 - 14 Fluid Reservoir
 - 15 Foot Control Systems
- 



- 1 Bleed Valve
- 2 Rotor
- 3 Brake Caliper



- 1 Brake Shoe



AUTOPARTS MANUFACTURING CAPABILITIES

STEERING SYSTEM



19 AUTOPARTS / 9 SUPPLIERS

- 1 Ball Joint
- 2 Track Rod
- 3 Tie Rod End
- 4 Steering Column
- 5 Pinion Shaft
- 6 Steering Gear Box
- 7 Steering Arm
- 8 Steering Hose
- 9 Steering Column
- 10 Pinion Shaft
- 11 Steering Pump
- 12 Rack & Pinion Boot
- 13 CV Boot

nexteer
AUTOMOTIVE



TRELLEBORG

- 14 Steering Motors
- 15 Steering Hose
- 16 Torque Sensor
- 17 Steering Wheel
- 18 Steering Column
- 19 Steering Column

brose
Technik für Automobile

FATON

HCQ
Materials Magic
Innovative Vehicle Group



KOSTAL

BOSCH

AUTOPARTS MANUFACTURING CAPABILITIES

SUSPENSION SYSTEM

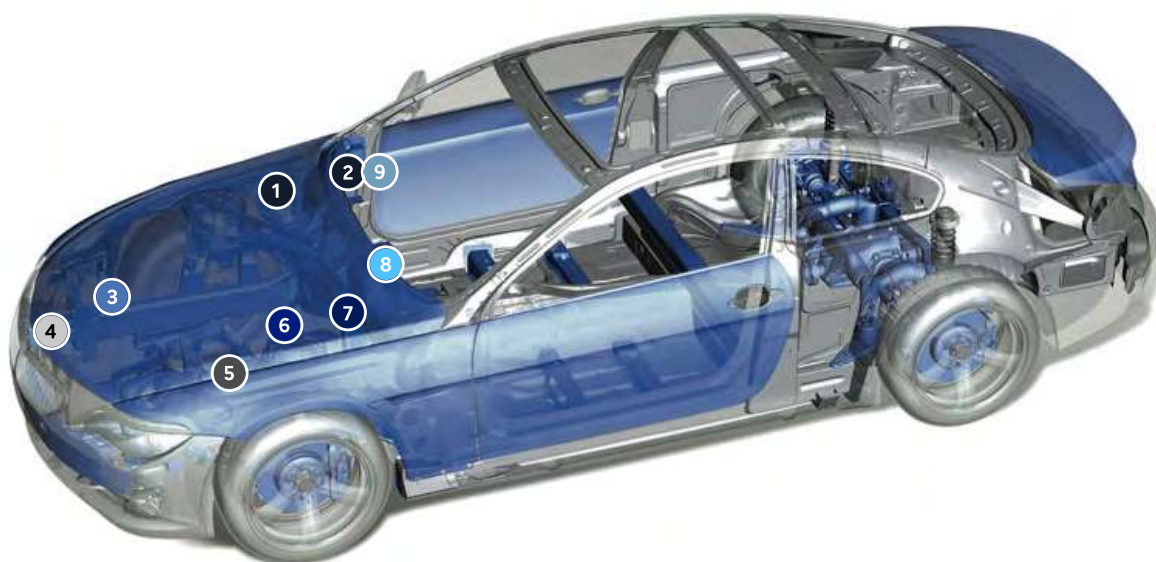
10 AUTOPARTS / 6 AUTOPARTS

- 1 Stabilizer Bar Bushings
- 2 Top Strut Mount
- 3 Bushings
- 4 Air Springs
- 5 Damper
- 6 Strut's
- 7 Shock Absorber
- 8 Front Hub
- 9 Bushings
- 10 Shock Absorber



AUTOPARTS MANUFACTURING CAPABILITIES

AIR SYSTEM



9 AUTOPARTS / 9 SUPPLIERS

- 1 Coolant recovery/pressure surge tanks
- 2 Air-intake and channeling components



- 3 Thermostatic Valve for A/C



- 4 Cooling Fan Motor



- 5 HVAC Units



- 6 A/C Hoses



- 7 Air Filter



- 8 HVAC Duct



- 9 Air-intake and channeling components



AUTOPARTS MANUFACTURING CAPABILITIES

ELECTRICAL SYSTEM

19 AUTOPARTS/ 14 SUPPLIERS

- 1 Alternator
- 2 Starter
- 3 Audio & Video systems
- 4 Electric Power steering



- 5 Automotive Alarms
- 6 Power Mirrors Motor
- 7 Window Motor



- 8 Automotive harnesses
- 9 PCB Assembly



- 10 Rear Lamps
- 11 Interior Lights



- 12 Electric Antenna



- 13 Audio & Video systems



- 14 Electric Power steering



- 15 Automotive Alarms



- 16 HVAC blowers Motor



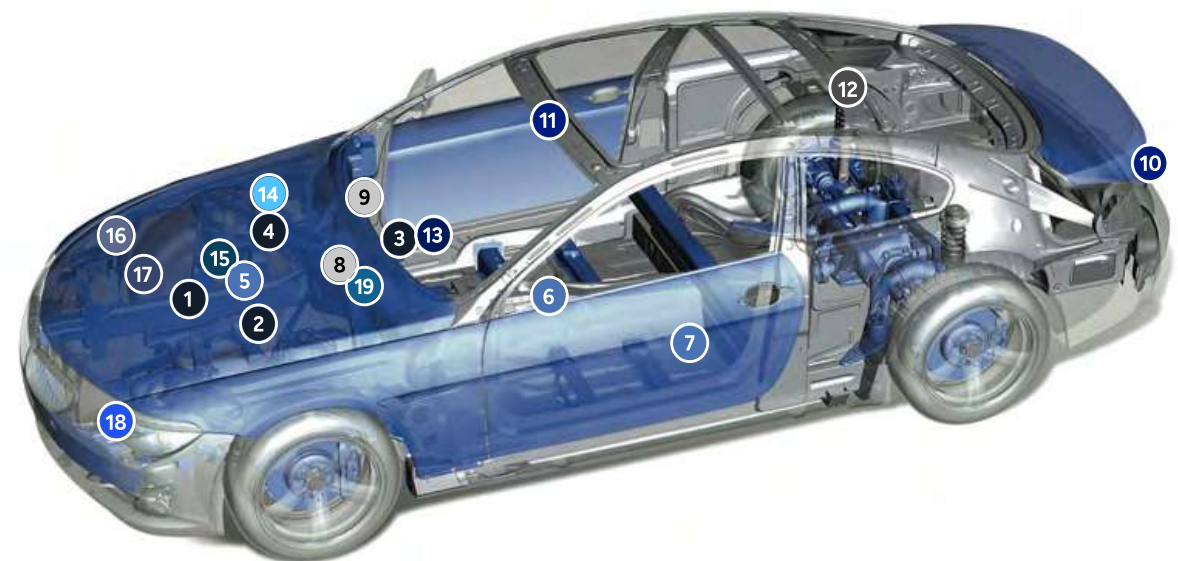
- 17 ECU



- 18 Headlamps



- 19 Automotive harnesses



AUTOPARTS MANUFACTURING CAPABILITIES

FUEL SYSTEM



7 AUTOPARTS / 9 SUPPLIERS

1 Exhaust System Hangers



2 Catalyst Systems and Catalyst Convertors



3 SCR System



4 Exhaust Systems



5 Fuel Opener Cable



6 Fuel Tank



7 Fuel Filter



AUTOPARTS MANUFACTURING CAPABILITIES

SAFETY & COMFORT



11 AUTOPARTS / 6 SUPPLIERS

- 1 Curtain Airbag Passenger Airbag
- 3 Driver Airbag
- 4 Knee Airbags



- 5 Curtain Airbag
- 6 Passenger Airbag
- 7 Driver Airbag



- 8 Airbag deactivation switches



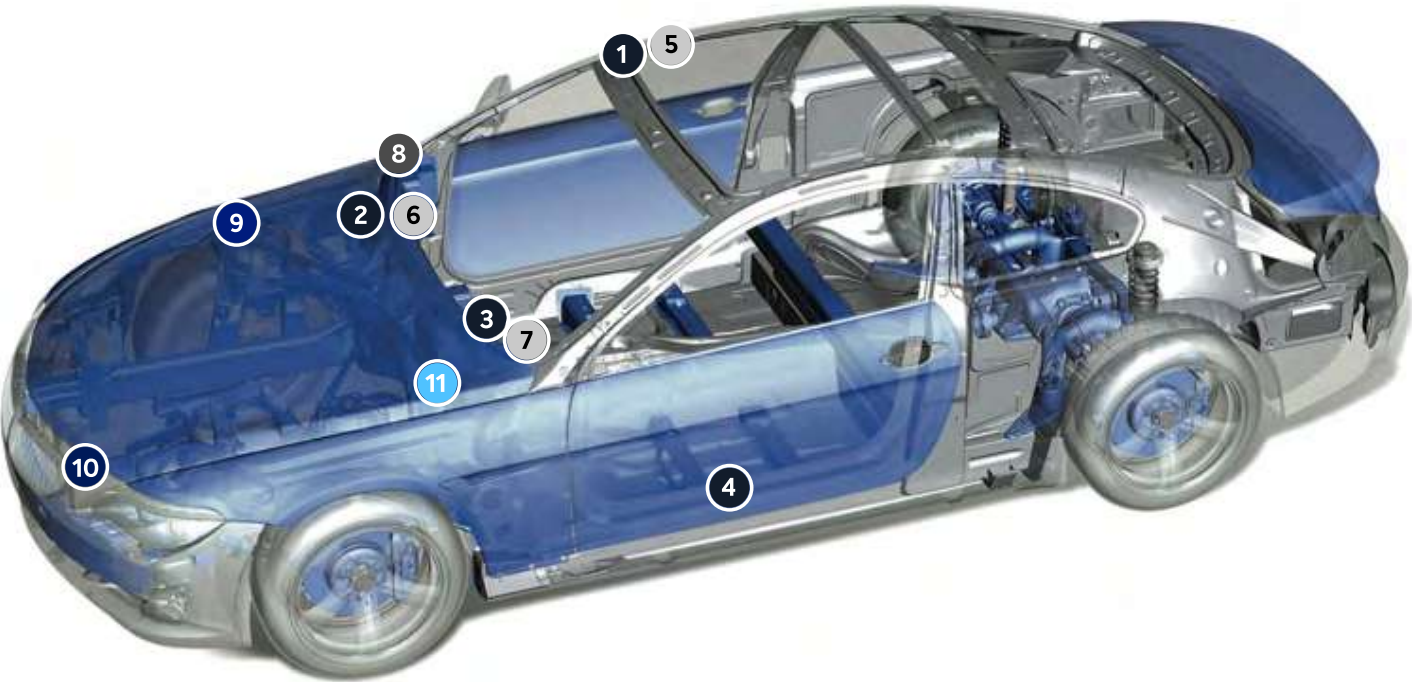
- 9 Tank Washer Reservoir



- 10 Hood Pull Cable



- 11 Hoses for Airbag



AUTOPARTS MANUFACTURING CAPABILITIES

SAFETY & COMFORT (INTERIOR)



27 AUTOPARTS / 18 SUPPLIERS

- 1 Speaker Grills
- 2 Air vents
- 3 Armrests
- 4 Head Restraint
- 5 Centers Console



- 6 Centers Console
- 7 Glove Box
- 8 Leather wrapped shift knobs
- 9 Air vents
- 10 Leather wrapped steering wheels



- 11 Glove Box
- 12 Plastic Pillars



- 13 Rotary light switch
- 14 Control Panel Components / Control buttons



- 15 Seat Control Switches
- 16 Window Control Switches



- 17 Floor Console
- 18 Door Panel



- 19 Amplifiers e Infotainment



- 20 Floor Mats



- 21 Metal Seating Structures



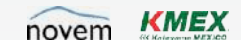
- 22 Seat Control Cable



- 23 Foam



- 24 Interior Trim



- 25 Floor Console



- 26 Centers Console



- 27 Door Panel



AUTOPARTS MANUFACTURING CAPABILITIES

STRUCTURE

21 AUTOPARTS / 10 SUPPLIERS

- 1 Metal Air Bag
- 2 Center Pillar
- 3 Wheel Housing
- 4 Rear Pillar
- 5 Front Pillar
- 6 Radiator Core Support
- 7 Rear Seat Back
- 8 Cross Car Beam
- 9 Radiator Core Support
- 10 Cross member
- 11 Door Frame
- 12 Roll Formed Bumper
- 13 Sash Partitions
- 14 Glass Channels



- 15 Chassis Mounts
- 16 Spring
- 17 Thermal and acoustic isolation
- 18 Coating, Painting, and Finishing isolation
- 19 Door Sash
- 20 Front Bumper Support
- 21 Tow Bar



AUTOPARTS MANUFACTURING CAPABILITIES

TRANSMISSION



13 AUTOPARTS / 8 SUPPLIERS

- 1 Conical Gears
- 2 Ring Gears
- 3 Yokes
- 4 Universal Joint Cross
- 5 Drive Shaft
- 6 Cardan



- 7 Gear Shift Assemblies



- 8 Transmission



- 9 Cable for Automatic transmission



- 10 DCT Motor



- 11 Carrier



- 12 Transmission Components



- 13 Oil Seal



AUTOPARTS MANUFACTURING CAPABILITIES

ENGINE

9 AUTOPARTS / 8 SUPPLIERS

- 1 Oil Filter
- 2 Engine Cover



- 3 Block
- 4 Oil Pan



- 5 Engine Mount



- 6 Cylinder Head Cover



- 7 Oil Control Valve

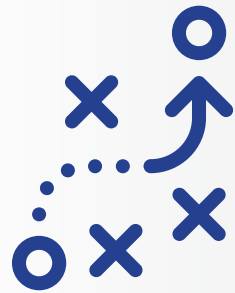


- 8 Oil Seal



- 9 Seals, Gasket





MAIN STRATEGIES



Human Capital Strengthening



Supplier Development



Operational Excellence



R&D Cooperation

ABOUT QUERÉTARO AUTOMOTIVE CLUSTER

It is an Association of Companies of the Automotive Industry, Academic Institutions, Research Centers and State Government, which are based on collaborative work and confidence, generating value proposals that allow to increase the competitiveness of its strengthening of this form the sector in the region.

Cluster Management Excellence Label



KEY ALLIANCES



MEMBERS





Querétaro Automotive Cluster acknowledges and appreciates to the Secretariat of Sustainable Development the support for the development of this document.



En colaboración con:



SECRETARÍA
DE DESARROLLO
SUSTENTABLE



"Esta obra, programa o acción es de carácter público, no es patrocinado ni promovido por partido político alguno y sus recursos provienen de los ingresos que aportan todos los contribuyentes. Está prohibido el uso de esta obra, programa o acción con fines políticos, electorales, de lucro y otros distintos a los establecidos. Quien haga uso indebido de los recursos de esta obra, programa o acción deberá ser denunciado y sancionado de acuerdo con la ley aplicable y ante la autoridad competente".