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Market study on the automotive  
industry and auto parts industry in  
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MARKET STUDY ON THE AUTOMOTIVE AND AUTO PARTS  
INDUSTRY IN MEXICO

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## 1. BACKGROUND

During the past decade, the Mexican automotive industry has undergone a major transformation, driven by an integration with the American market. The new competitive needs of the American market originated the creation of new plants on Mexican territory with an organizational and technological design linked to such conditions. Thus, since the early 80's, a new exporting specialization emerged in the local car assembly plants and in a great number of auto parts firms. Manufacturing and complex assembly plants coexist now in this new exporting system.

From 1962 to 1977, the Mexican government advocated a policy of import substitution. The 1962 decree mandated to prohibit the import of engines in order to encourage local manufacture of mechanical components and auto assembly operations. It also sought to increase value added in motor vehicles to 60%. The 1972 decree mandated that 40% of foreign exchange earning should be used to buy Mexican auto parts, goods and services. After 1977, the policy focus gradually shifted towards rationalizing the industry and encouraging export-led growth. The 1977 decree imposed trade balancing requirements and strict restrictions on foreign investment not designed to promote exports. These measures brought about investments in engine manufacturing plants, primarily for export, by the large car manufacturers.

In response to this regulatory framework, the strategies of Mexico's automotive firms were traditionally in conflict with governmental policies. The companies operated trying to obtain maximum benefits from the protected market and thereby hindering import substitution policies. On the other hand, the government had to protect the local market, it being the axis of the country's industrial growth and employment, but at the same time encouraging exports.

The conflict between the companies and the authorities' guidelines was mostly to be seen when, between the late 70's and early 80's, the oil boom generated a great demand which exceeded the possibilities of the existing short-range production structure, giving way to rising imports. This led to a dangerous situation in 1981 and 1982, when the automobile sector accounted for 43% and 53% respectively of the country's trade deficit. Between 1978 and 1981, imports of auto parts jumped from \$516 million (1) to \$2.4 billion, and in this process, the import substitution strategy was buried with the lack of a clear exporting orientation. In time, a liberal model was implemented and the relationship between the agents in the industry underwent a significant modification. In the 80's there was an inflection point, and in the 90's, a significant autonomy for the companies is expected.

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1. Note: All values in this report, unless otherwise stated (\$ Mexican pesos, Cdn \$, etc.), are quoted in United States dollar equivalents.

On the other hand, since the late seventies, according to the changes that the automotive industry had already been experiencing in the world, the American firms used a new strategy in Mexico, creating the first plants that would help them face the new competitive conditions in the U.S. market itself. These manufacturing plants, located in the North of Mexico, started operating in 1981 with the export of Chrysler "K" model engines to the United States. The vast majority of these assembly plants had technologically very sophisticated production systems and brought about a new tendency in the industry, by integrating it to the American market.

The 1983 "Rationalization of the Car Industry" decree attempted to mend previous years failures by stimulating exports through a pro-effective approach. In order to encourage higher volumes per model, it restricted the number of lines and models for the domestic market (3 in 1984, 2 in 1985 and 1 in 1986 and 1987) to bring about economies of scale and lower prices; assemblers were permitted to produce another line for export but production had to meet a decreasing scale of local content requirements; additionally, it reinforced the requirement for a positive trade balance, that is, to hold export levels above their import levels plus other foreign costs. During the time the decree was operational, exports attained a strong dynamism, increasing from \$550 million to \$3.3 billion between 1982 and 1987., since substantial cost savings could be obtained by producing a large volume of cars to qualify for lower local content requirements and to increase exports to meet the foreign exchange requirements.

This exporting process also gave way to higher imports, while the low activity of the internal market produced a reduced use of Mexican components. The supply systems related to the exporting segment acquired a greater international dimension than that of the traditional segment.

The 1983 decree would be the last attempt to accomplish a fusion of import substitution and export orientation. The industry's structure in 1990 is the evident result of the needs of the companies to link their strategy with the U.S. market.

The new direction ended with the 1989 decree. The new industrial policy for this industry was defined in the "Development and Modernization for the Automobile Industry" decree, issued on December 11, 1989. It allows firms who exhibit a positive trade balance to import automobiles. The total number of vehicles imported into Mexico may not exceed 15% of the total number of vehicles sold in the domestic market (this figure rises to 20% in 1993). Also, automobiles may be imported when the price of the equivalent car produced in Mexico is above its international price. Each vehicle manufacturer must maintain a positive trade balance to be eligible for these imports. (For every dollar of import, exports must be \$2.50 in 1991, \$2 in 1992-1993 and \$1.75 in 1994). Assuming the fact that trade with the United States has

driven growth in the industry, it reduces the national value requirement significantly, from 75% to 36%. It eliminates the constraint to include specific nationally produced parts that were considered strategic for integration. At the same time, auto parts firms must maintain a 30% level of local content. Also, it grants complete freedom in decision-making to the companies as to the lines and models of production. In the case of bus and truck manufacture, producers can also decide which vehicles to make and the import-export balance is \$1 to \$1 and local value added must be 40%. The transition period for buses is in 1990, for tractor trailers 1990-1992 and for heavy trucks 1993. After that, local value requirements will be dropped and foreign producers may qualify for imports. This will bring about strong competition from large foreign, in particular U.S., manufacturers such as General Motors.

It is worth mentioning that to allow imports of automobiles is the most innovative measure and, even though it certainly implies an opening, it also maintains certain restrictions related to minimum local content requirements, the partial ban on import of used cars, which are presently only allowed along the Mexico-U.S. border, and certain investment and exporting performance requirements of the locally manufacturing companies.

The new decree integrates Mexico to a general globalization process seen in the automotive industry worldwide, which stresses liberal trade policies and the need for an increased competitiveness of the domestic automobile industry. In order to achieve this, imports of auto parts are allowed in larger quantities, as national integration requirements are reduced. This, in turn, is expected to foster exports of Mexican products at competitive prices and to attract foreign investors into the Mexican market to take advantage of these new conditions. These events create a very favorable scenery for the development of the auto parts industry in Mexico. The export orientation of the automotive industry as a whole and that of auto parts in particular, will certainly bring about a persistent growth both in production and imports.

## 2. ECONOMIC ENVIRONMENT

With the objective of reducing the inflation rate, the Mexican authorities implemented a stabilization program in 1988, called the Economic Solidarity Pact, which features traditional austerity measures, entailing tight fiscal and monetary policies and unorthodox measures, such as price, wage and exchange rate controls. This program has been the cornerstone of Mexico's economic policy over the past four years and has resulted in a drastic reduction of the inflation rate, from an annual rate of 159.2% in 1987 to 51.7% in 1988 and 19.7% in 1989. Inflation rebounded to 29.9% in 1990 but the Mexican government aims to achieve a 14% inflation rate in 1991, which seems a reasonable estimate based on an annual inflation rate of 13.3% as of October

1991. Along with the objective of consolidating the progress made in price stabilization, Mexico's macroeconomic policy in the short run aims to reaffirm gradual and sustained economic recuperation, basically by establishing the necessary conditions to encourage national and foreign investment and by stimulating local demand.

After the 1986 recession, Mexico's gross domestic product (GDP) increased a moderate 1.7% in 1987 and an additional 1.3% in 1988. Domestic economic activity recovered for the third consecutive year in 1989 with a growth rate of 3.1% and further 3.9% in 1990 to reach \$234 billion. With an 81.1 million population, per capita GDP was estimated at \$2,874 in 1990. Additionally, manufacturing output grew by 5.2% in 1990 in real terms, private investment and consumption expanded 13.6% and 5.2% respectively and public investment was up 12.8%. During the 1991-1994 period GDP is expected to maintain an average annual growth rate of 2.5%-3%. Preliminary figures for 1991 place GDP growth at 4.5%-5% for this year.

In an effort to revitalize and open the Mexican economy, the Mexican Government undertook a series of structural changes, including the accession to the General Agreement on Tariffs and Trade (GATT) on August 24, 1986 leading to an extensive trade liberalization process: import permits were eliminated on all but 198 of the total 11,812 tariff items based on the Harmonized System adopted in 1988. Official import prices are no longer applicable, nor the 5% export development tax, and import duties were lowered from a maximum of 100% in 1982 to 20% since January 1988. The weighted average tariff rate is now 10.4%. The automotive and computer industries have also been liberalized, through the elimination of prior import permits, to allow free entry of products in these industries. The approval of the North American Free Trade Agreement will further strengthen trade between Canada, the United States and Mexico.

According to official data from the Mexican Secretariat of Commerce and Industrial Development (SECOFI), Mexico's trade balance in 1990 dropped once again to a \$3 billion deficit from -\$645 million in 1989. Exports increased by 17.5% in 1990, from \$22.8 billion to \$26.8 billion, while imports grew 27.3%, from \$23.4 billion to \$29.8 billion in 1990, having already increased 23.8% in 1989 and 54.9% in 1988. As of September 1991, total exports for the year amounted to \$20.7 billion and imports to \$27.2 billion.

Total Mexican imports from Canada increased 24% in 1989 and decreased 1.5% in 1990. Total Canadian exports to Mexico amounted to Cdn\$594 million, while total Canadian imports from Mexico were valued at Cdn\$1,730 million in 1990. According to Mexican figures, in 1989, 1.9% of Mexico's imports came from Canada, while 1.2% of its exports were to Canada. This makes Canada Mexico's fifth largest exporter and sixth largest importer.

### 3. MARKET ASSESSMENT

Mexico's automotive industry has two main branches: that of the automobile and truck manufacturers and that of the auto parts manufacturers. A related activity of interest to foreign suppliers to Mexico is represented by the industry that produces maintenance equipment and constitutes the after market to the automotive industry. We will look into the performance of the auto parts industry in the first place.

#### 3.1 AUTO PARTS

Total apparent consumption of auto parts in Mexico has been increasing at an average annual rate of 21% in the last few years, prompted by the export oriented policies described in section 1. The total market for auto parts amounted to over \$9.7 billion in 1990, having grown 20% over the \$8.1 billion of 1989. Preliminary data for 1991, place apparent consumption as high as \$15.4 billion, reflecting a 58% increase. It is expected that apparent consumption will decrease its average annual growth rate to 10% during the following three years, and reach \$20 billion by 1994, since both the Mexican and the U.S. market are not expected to maintain such a dynamic purchasing capacity.

The composition of the market is also expected to change as a result of the new automobile decree. Local production of auto parts will continue rising but, since it will no longer be protected by such stringent national integration requirements as before, it will lose ground before imports. The latter are expected to grow 16% annually and represent 33% of total consumption by 1994, as opposed to 24% in 1989. Exports are also estimated to continue growing slightly in response to the long term export oriented policy of the automotive industry.

**TABLE 1**  
**TOTAL APPARENT CONSUMPTION OF AUTO PARTS**  
(million U.S dollars)

	1986	1987	1988	1989	1990	1994p
Production	5,738	6,462	7,208	8,029	8,090	15,664
+ Imports	640	1,100	1,604	2,215	3,597	6,732
- Exports	1,621	1,870	1,967	2,167	1,961	1,946
<b>TOTAL</b>	<b>4,757</b>	<b>5,692</b>	<b>6,845</b>	<b>8,077</b>	<b>9,726</b>	<b>20,450</b>

Source: American Chamber of Commerce of Mexico, Secretaría de Programación y Presupuesto (SPP) and estimates made by Industria Nacional de Auto Partes (INA); Import-export data as published by "Comercio Exterior", BNCE.

It is worth noting that, in addition to a large local auto parts manufacturing industry, Mexico has a dynamic automotive in-bond or maquiladora industry growing rapidly along the Mexico-U.S. border. This industry, regulated under temporary import permits and the production of which is exclusively for exports, began operating at the beginning of the 80s, together with the export oriented automotive industry. Total maquiladora plants in the automobile and auto parts industry are 129. General Motors has 18 plants under this regime, Ford 6 and Chrysler 2. Total value added by auto parts maquila firms increased from \$127 million in 1981 to \$576 million in 1988.

### 3.1.1 IMPORTS

Imports of auto parts reached an all time high of \$1.9 billion in 1981. Two years later, they diminished dramatically to \$500 million, as a result of exchange controls and import restrictions imposed in response to Mexico's economic crisis of 1982. Such a weak situation was maintained until 1986, when a phase of dynamic growth began. In 1989, imports grew 38% and surpassed their 1981 value, reaching \$2.2 billion. In 1990 they increased another 62% and amounted to \$3.6 billion. January-August data point towards a \$4.8 billion import market in 1991. This process is basically due to a rapid growth in imports by the local assembly plants both of engines and automobiles. Nevertheless, in the future, imports destined to the local market and in particular to the after-market will grow in importance.

Table 2 shows the 27 main imported products, which represent 16.5% of total imports in 1988, as well as the most important end user for each. There are three end user sectors of auto parts: the trade sector composed of distributors of new and used cars and repair shops, which represent 11% of total purchases; auto parts manufacturers 21%, and assembly plants 67%. As can be seen,

the main imports are those of engine parts due to Mexico's very large production of motors and engines for export.

**TABLE 2**  
**PRINCIPAL IMPORTED AUTO PARTS AND PRINCIPAL END USER-1988**  
(000 dollars)

AUTO PART	AMOUNT	END USER		
		D	A	P
Parts for differential systems	162,911		X	
Piston rings, valves and piston skirts	19,330			X
Transmission belts	8,161	X		X
Other ball bearings	7,297			X
Pneumatic tires for trucks and buses	1,959	X		
Other steel piston rings	5,274	X	X	
Open compressors for air conditioning	5,145			X
Assorted parts	4,995	X	X	
Crankshaft	3,849	X	X	X
Bushings	3,709	X		
Cone bearings	3,477			X
Ball bearings	3,011			X
Other parts for ball/roller/needle bearings	2,929			X
Mudguards	2,813	X		
Other parts for frames	2,723			X
Bumpers	2,705	X		
Parts for the direction system	2,680	X		
Oil seals	2,509	X	X	X
Parts for radiators	2,487	X		
Spotlights and taillights	2,441	X		
Parts for steering gears	2,364	X		
Electric devices for ignition	2,344	X		
Assorted plastic manufactures	2,342			X
Spark plug cables	2,291	X	X	X
Oil pumps	2,516	X		
Insulating material	2,129			X
Assorted automatic devices for regulation	2,035		X	X

Note: D=distributors; A=assembly plants; P=auto parts producers.

Table 3 shows auto part imports whose growth has been the most dynamic during the 1986-1989 period. There are seven products that have grown more than 500% during that period and eleven whose growth ranged between 100% and 500%. In the former group, some of the most important products were: disc brakes valued at \$7.5 million and shaft axles at \$5.7 million. In the latter group, distributor parts with \$5.5 million, bushings \$4.7 million and snobbers \$4.5 million. Products in these two categories are more diversified than those listed in Table 2 and are more geared towards the automobile market. Their growth rates are closely related to the increase in domestic production of cars and trucks

and in the total number of cars in circulation throughout the country, which need periodical service.

**TABLE 3**  
**MOST DYNAMIC GROWING IMPORTS**  
(000 dollars)

More than 500% growth during the period 1986-1989

**1989 VALUE**

Disc brakes	7,517
Shaft ackles	5,748
Wheels	2,930
Clutchs	1,749
Bumper parts	1,689
Accoustic apparatus	1,118

Growth between 100% and 500% during the period

**1989 VALUE**

Distributor Parts	5,511
Bushings	4,752
Snobbers	4,498
Brake drums	3,806
Gear cases	3,558
Universal joints	3,150
Master cylinder brakes	3,000
Lights	1,730
Contact points	1,692
Mufflers	1,367
Bobbins	1,085

The most important supplier of auto parts to the Mexican market is the United States. This is closely related to the strong link between the local industry and the U.S. manufacturers, as described in the first section of this report. Approximately 85% of all auto parts are imported from the U.S., followed by West Germany and Japan in equal proportions.

Based on data published by Canadian authorities (see Table 4), Canadian auto part exports to Mexican grew from Cdn\$50.3 million in 1988 to Cdn\$89.8 million in 1989, at a 78.5% growth rate, a value superior to the growth rate of total Mexican imports of auto parts, which was 38% during the same period. In 1990, Canadian exports grew another 117% to Cdn\$194.5 million. Canadian imports from Mexico grew 11.7%, from Cdn\$424.4 million in 1988 to Cdn\$474 million in 1989, exceeding the 10.2% rate of growth of total Mexican auto part exports. In 1990, Canadian import from Mexico grew another 20% to Cdn\$570.1 million. This indicates that, in recent years, trade with Canada has been more dynamic than Mexico's total trade.

**TABLE 4**  
**CANADIAN TRADE WITH MEXICO OF AUTOMOBILES AND AUTO PARTS**  
 (Cdn \$ 000)

<b>EXPORTS TO MEXICO</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>
Spark ignition engine parts	0	18,778	17,054
Motor vehicle parts	19,407	24,029	7,703
Transmissions	12,195	18,938	308
Body accesories	10,695	12,535	133,417
Bumpers and parts	2,964	9,115	115
Other auto parts	5,031	6,382	35,949
<b>TOTAL</b>	<b>50,292</b>	<b>89,777</b>	<b>194,546</b>
<b>IMPORTS FROM MEXICO</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>
Spark-ignition engines	214,982	215,847	274,650
Body accesories	133,417	170,009	219,783
Auto part for spark ignition engines	31,966	34,033	18,650
Safety seat belts	14,206	22,712	24,934
Wheels & accessories	10,283	9,594	8,694
Other auto parts	19,586	21,799	23,401
<b>TOTAL</b>	<b>424,440</b>	<b>473,994</b>	<b>570,112</b>

Source: Statistics Canada - International Division

Among the largest foreign companies associated with Mexican auto parts manufacturers technologically are:

**CHASSIS PARTS**

A.O. Smith  
 Alfred Treves  
 Allied Corp.  
 Boge  
 Budd  
 Good Year  
 Hosch Hohelinburg  
 Kelsey Hayes  
 Maremont  
 NHK  
 TRW

**BODIES**  
 The Bud C. Clearing  
 A.O. Smith  
 G. Motors (Fisher)

**ELECTRIC PARTS**

Bosch  
 Exide  
 Hella  
 Magneto Marelli  
 Packard Electric  
 Richardson

**POWER TRAINS**  
 Clark  
 Dana  
 Eaton  
 GKM  
 Luk  
 Rockwell

**MOTOR PARTS**

Atsugi  
 Champion  
 Federal Mogul  
 General Motors  
 JPI Industries  
 Mahle  
 Modine  
 Perfect Circle  
 Pierburg  
 Sealed Power  
 Smiths Industries  
 Victor

### 3.1.2 DOMESTIC PRODUCTION

The Mexican auto parts industry was initiated with the presidential decree of 1962. With the objective of increasing Mexican production of auto parts, this decree stipulated that vehicles manufactured in Mexico should have at least a 60% local content level. It also stated that this could be reached by incorporating Mexican parts into the production of motor vehicles.

The local auto parts industry consists of about 500 companies, employing some 165,000 people. It accounts for 2.7% of total manufacturing GDP and has shown an average annual growth rate of 8% between 1978 and 1990, several points above total GDP growth. Auto part manufacturing plants are located in the following cities: Mexico City 65%, Monterrey 12%, Queretaro 4%, Puebla 4%, Toluca 4% and Guadalajara 2%, as well as close to the Mexico-U.S. border.

The industry can be divided into three sectors: (1) well established Mexican firms who have traditionally manufactured parts for the local market and have in some cases not met international standards of quality and efficiency; (2) maquiladora plants located in Mexico to take advantage of low labor costs and favorable tariff treatments when exporting to the United States; and (3) new firms formed through joint ventures and technical assistance agreements with foreign firms. These firms are poised to compete for sale to assembly operations abroad.

Since the first half of the 80's, local production of auto parts (excluding motors) has been growing at an average annual rate of 7%, from \$6.7 billion in 1986 to \$8.1 billion in 1990 and \$12.8 billion in 1991, according to the latest projections. During this process, the imported contents of nationally produced auto parts grew from 9.4% in 1986 to 26% in 1990. At the same time, exports maintained a stable growth rate of 23%. These increases reflect the greater degree of openness of the auto parts industry. With the new 1989 decree, Mexican auto part firms will add to their strength and show high rates of growth.

### 3.1.3 EXPORTS

Auto part exports grew without interruption between 1982 and 1989, from \$230.5 million to \$2,167 million in 1989. That is, they grew 10 times in eight years. In 1990, exports fell by 10% to \$1,961 million and preliminary data for 1991, place total exports at \$1,834 billion.

There is a group of exporting auto part firms that have joint ventures with the automobile manufacturers. In this manner, General Motors has its own component plants and it also has projects with Mexican capital: financial participation in

Aralmex, a Mexican auto part company that exports snobbers and with the Condumex group, which exports harnesses and rings.

Ford, on the other hand, is involved in important projects with Mexican auto part firms that export security glasses, motor heads and plastic parts, all of which take place in intra firm trade. In Volkswagen and Nissan there is a close link with firms such as Bocar and Nipomex, both with a majority of Mexican capital.

There is also an important volume of exports carried out by the auto part firms themselves, either directly or indirectly. A common denominator for the majority of exports of the auto parts industry is the use of high technology in their production. In the case of products with high dynamism and technological complexity, the patents and the linkage to foreign auto parts firms are important elements in the feasibility of the project.

The technological association with foreign companies, either through capital or technical consulting, is present in practically all exporting firms. Such a relationship helps the firms in reaching an internal renovation and it enhances their competitiveness. A second characteristic, which is also common to the exporting activities of the auto parts industry is its concentration in a small number of firms and in many cases in only one firm which exports the product. Table 5 shows the most important products exported by the Mexican auto parts industry.

**TABLE 5**  
**MAIN EXPORTED AUTO PARTS EXCLUDING MOTORS IN 1988.**  
(thousands of dollars)

Assorted automobile body parts	101,409
Safety glasses	79,501
Assorted parts for engines	58,915
Laminated springs	44,735
Titanium bioxide pigments	4,493
Assorted parts for automobiles	38,586
Parts for brakes and servobrakes	32,300
Pneumatic tires for buses & trucks	25,099
Pneumatic tires for cars	16,737
Cables for spark plugs	12,464
Transaxles	11,619
Brakes	10,809
Parts for cells	9,060
<b>TOTAL</b>	<b>482,727</b>

The most important exporting firms to Canada are the following: Carplastic, which exports body parts; Vitroflex, safety glass; Rassini, laminated springs; Nacional de Conductores Eléctricos, cables for voltages between 80-1000V; Nemak, assorted parts for engines; Industria Automotriz, assorted body parts; Tebo, brakes

and servobrakes; and Electronica Clarion, car radios. As can be seen, Canada represents an important market for Mexican auto parts.

### 3.2 MAINTENANCE EQUIPMENT

The total number of automobiles in circulation at present is of 10 million vehicles, 3.5 million of which are concentrated in the Mexico City metropolitan area. There is no reliable data on automobile maintenance needs at a national level, but there are good estimates on the Mexico City area. These indicate that the average life span of a car is eight years and that it goes to the repair shop four times a year, with a minimal expenditure of \$50 dollars each time. The rising costs of new cars will make car owners give priority to their vehicle's maintenance and repair before buying a new one. This, coupled with a high incidence of car accidents, will create a continued demand for service and repair equipment in the future.

Total apparent consumption of maintenance equipment increased 85.5% in 1989, from \$16.6 million in 1988 to \$30.8 million in 1989, and another 12% in 1990, to \$34.5 million. This was mostly a result of Mexico's trade liberalization policies, which have made importation easier and more affordable. This, in conjunction with an important demand backlog for this type of equipment, brought about by previous year's tight financial conditions, slack domestic demand and high inflation rates, translating into an unfavorable dollar-peso exchange rate, brought about a major surge in total market size, but in particular in imports. Also, beginning in 1989 a mandatory environmental control system was established in Mexico City, by which each vehicle must have a check up done every six months. To fulfill these conditions a great number of shops bought gas analyzers and other tuning equipment. In 1990, this trend continued, as the pollution control measures continued and another measure was added to the previous ones -the "one day without circulation" campaign, which consists in not being able to use the car one mandatory day a week. This has mostly translated into an increased sale of cars and therefore of maintenance needs.

In the next four years, this market is expected to continue increasing at an average annual rate of five percent, in close relationship to the general increase in the number of cars sold in the country. The trend of most shops and service agencies of modernizing their equipment in order to service recent car models will also continue driving demand. Total apparent consumption is expected to reach \$45.6 million in 1994, of which \$37.4 million, or 82%, will be of imported origin.

**TABLE 6**  
**TOTAL APPARENT CONSUMPTION OF MAINTENANCE EQUIPMENT**  
(000 of dollars)

	1987	1988	1989	1990	1994p
Production	4,907	5,215	8,504	9,354	10,976
+Imports	5,214	12,494	23,664	26,823	37,392
-Exports	858	1,078	1,323	1,661	2,745
<b>TOTAL</b>	<b>9,263</b>	<b>16,631</b>	<b>30,845</b>	<b>34,516</b>	<b>45,623</b>

### 3.2.1 IMPORTS

Mexico is highly dependent on imports in this branch, since local production is limited to a small number of relatively simple tools. and, in general, repair shops prefer imported equipment and tools due to their quality and reliability. This is shown in the fact that, in 1990, imports of equipment amounted to \$26.8 million, representing a 79% share of the total market, as opposed to a local production of only \$9.3 million. In 1989, imports amounted to \$23.7 million, or 77% of total demand. By 1994, they are expected to grow to \$37.4 million.

**TABLE 7**  
**IMPORTS OF MAINTENANCE EQUIPMENT**  
(000 of dollars)

	1987	1988	1989	1990
Car washing machines	942	2,944	5,192	3,997
Wheel alignment systems	684	1,229	2,044	1,525
Jacks and hoists	156	1,090	977	1,274
Tyre removing equipment	181	383	516	673
Compressors	40	90	168	152
*General purpose equipment	1,427	2,670	4,900	6,604
Gas analyzers	267	1,592	6,905	8,796
Ignition analyzers	392	582	303	366
Motor checking apparatus	43	312	1,036	1,764
*General purpose instruments	1,082	1,602	1,623	1,627
<b>TOTAL</b>	<b>5,214</b>	<b>12,494</b>	<b>23,664</b>	<b>26,778</b>

\* Note: General purpose equipment includes wrenches, pneumatic and hydraulic tools. General purpose instruments include oscilloscopes and multimeters.

Specially important were imports of gas analyzers, which grew over threefold, from \$1.6 million dollars in 1988 to \$6.9 million in 1989, and another 27% in 1990, basically as a result of the need for equipment to verify polluting levels. Car washing machinery imports also grew significantly, from \$2.9 to \$6.9 million dollars, at a rate of 76.4%, but decreased again in 1990.

Tools operated either manually, electrically or hydroneumatically and electrical measurement equipment also increased, from \$4.3 million to \$6.5 million, showing an increase of 52.7%.

Products in this market subsector which have been identified as having the greatest market potential in the years to come are:

- Scanners with adaptability for different types of cars
- Injection balancing equipment washers
- Scanners for computerized braking systems and automatic gearboxes
- Oscilloscopes with injection analyzers
- Time lamps with phasing systems
- Cylinder leak analyzers
- Vacuum gauges and gasoline pump testers

The Association of Automobile Repair Shops (Asociación de Talleres Automotrices) believes that a good deal of the future equipment needs will have to be covered by imports, since automobiles will be increasingly sophisticated and will need high technology equipment not manufactured in Mexico. Particularly, it will be necessary to import equipment related to the needs of automobiles which use fuel injection systems and also for the new cars now using unleaded fuel.

Traditionally tools and equipment that are used by shops come from the United States. The U.S. market share has fluctuated between 72% and 84% in the last three years. The predominance of American made equipment is due fundamentally to the predominance of U.S. brand cars in the Mexican market, which need compatible equipment for their tuning and repair service. West German and Japanese equipment account for most of the balance. Canadian products in this market segment are virtually non-existent, as can be seen in Table 8.

**TABLE 8**  
**CANADIAN EXPORTS OF MAINTENANCE EQUIPMENT TO MEXICO**  
(Cdn \$000)

	1988	1989	1990
Wrenches	5	0	1
Jet projecting machines	38	209	2
Jacks & hoists	17	24	71
Other equipment	26	25	27
Gas analyzers	0	4	12
Measuring & checking instruments	87	97	109
Automatic regulating instruments	202	505	1,050
<b>TOTAL</b>	<b>375</b>	<b>864</b>	<b>1,272</b>

Source: Statistics Canada - International Trade Division

4. END USERS

The most important end users of auto parts in Mexico are the automobile and truck manufacturers. According to Industria Nacional de Autopartes (INA), in 1989 more than 55% of total local production of auto parts went to this industry, 28% to the local aftermarket and 17% to exports.

During the 1980's, Mexican automotive production was buffeted by the same forces that rocked the economy. Vehicle production plummeted from 600,000 vehicles produced in 1982 to about 350,000 during the mid-decade recession and then recovered starting in 1987. The following table lists the largest automobile and truck manufacturers in Mexico with the number of units sold in the local market by each during 1988, 1989 and 1990:

	1988 CARS	1988 TRUCKS	1989 CARS	1989 TRUCKS	1990 CARS	1990 TRUCKS
Chrysler	48,732	31,330	56,952	36,393	52,580	39,362
Ford	32,001	29,717	47,801	39,418	52,352	37,152
General Motors	15,284	32,441	22,876	49,579	32,351	61,188
Nissan	60,247	24,351	69,855	25,766	80,502	32,314
Volkswagen	53,802	6,903	77,021	9,008	134,823	10,248
Dina		2,268		4,273		6,258
FAMSA/Merc. Benz		2,073		2,929		5,207
Other		19		43		321
<b>TOTAL</b>	<b>210,066</b>	<b>129,102</b>	<b>274,505</b>	<b>167,409</b>	<b>252,608</b>	<b>192,050</b>

Source: Asociación Mexicana de la Industria Automotriz

According to the Mexican Association of Automobile Industry (AMIA), total sales of cars, trucks, tractor trucks and buses for the local market reached 445,863 units in 1989, 30.4% more than in 1988 and 80% over the volume placed in 1987. In 1990, sales increased another 23.4% to 550,306 units. This volume of sales represents the fourth consecutive year of expansion and 1990 was the best year ever for the automobile industry, considering national and foreign sales. This growth was due to price stabilization in Mexico, increased financing resources to the consumer, lower interest rates and the presence of the VW Beetle on the Mexican market, which sold 7,000 units on average a month. During the first seven months of 1991, sales increased by 25% as compared to the same period in 1990. An average of 53,000 vehicles have been sold per month in the internal and external markets during 1991, for a total of 380,095 between January and July 1991.

In addition to the above units sold in Mexico, the Mexican automobile industry manufactured 278,559 units for export, 43% above 1989 levels. The total production of the industry has therefore increased from 512,776 units in 1988 to 641,275 in 1989

and further to 820,558 in 1990, the latter composed by 598,093 cars and 222,465 trucks and buses.

In the next few years, the Mexican automobile industry is expected to grow at an average annual rate of 12% to 15%. In 1991, automotive sales are expected to reach 620,000 vehicles and 1992 will surpass the 700,000 limit. With further reforms related to the Free Trade Agreement, Mexico could assemble some one million vehicles within five years.

Total market participation by company during 1990 was as follows:

	CARS	GASOLINE TRUCKS	DIESEL TRUCKS
Nissan	22.8%	16.8%	
Chrysler	14.9%	20.5%	
Ford	14.9%	19.3%	
Volkswagen	38.2%	5.4%	
General Motors	9.2%	31.9%	
Dina		3.3%	23.8%
Mercedes Benz		2.7%	17.8%
Kenmex			57.1%
Other		0.1	1.3%

Source: AMIA

These firms operate a total of 15 plants in Mexico, of which 10 are American, 2 German and 3 Japanese. These 100% foreign owned firms produce automobiles, trucks and motors.

The following table shows the number, location and production of each manufacturer's plants, as well as employment and installed capacity when available.

MANUFACTURER/ SITE	EMPLOYMT.	PRODUCTION	UNITS
<b>CHRYSLER</b>			
Lago Alberto	4,500	Light trucks	
Toluca	5,400	1 vehicle assembly plant	100,000
		2 components plants	
		1 engine plant	
		1 standard transmissions plant	
Salttillo		engines	
<b>NISSAN</b>			
Cuernavaca	7,600	passenger automobiles	
		light trucks & buses	
		components	

MANUFACTURER/ SITE	EMPLOYMT.	PRODUCTION	UNITS
<b>VOLKSWAGEN</b>			
Puebla		cars, engines	100,000
<b>FORD</b>			
Hermosillo		cars, components	
Chihuahua	900	engines	270,000
<b>GENERAL MOTORS</b>			
Ramos Arizpe	41,000	cars	
		other vehicles	
Mexico City		trucks	
Toluca		engines	
		automotive castings	
Border towns		30 maquiladora plants	

Source: Prepared from "The Mexican role in Automotive Production" in Prospects for North American Free Trade.

Mexico's automotive sector is currently undergoing massive reconstruction on the heels of an annual average growth in exports to the United States of 130% between 1985 to 1990 and in anticipation of continued growth spurred by North American integration. As a result, all of the major automotive manufacturers have expanded their manufacturing facilities in recent years:

Ford has invested a total of \$1.1 billion, \$500 million of which were destined to the assembly plant in Hermosillo in 1984 to build Mercury Tarcers, which has a capacity of 130,000 finished vehicles per year; during 1990 it completed a general retooling of its plant investing another \$300 million to start producing 165,000 units of the CT20, successor to the Tracer. In January 1991, it announced a \$700 million investment to expand and upgrade its engine plant in Chihuahua.

Volkswagen increased its plant capacity in Puebla. Volkswagen is expecting to boost its capacity from 100,000 units to 300,000 by 1993 with a \$1 billion investment at the Puebla plant. It will produce VW Golf and Jetta models for the U.S. and Canada markets and engines for export to Europe.

General Motors has invested an average \$100 million annually in the last several years and enlarged its two plants located in Coahuila.

Chrysler has invested an average of \$100 million per year since 1985. It purchased Renault in 1987 and is now interested in buying Diesel nacional (DINA), Mexico's state owned heavy truck manufacturer. Chrysler Mexico is the sole worldwide producer of its Ramcharger.

Nissan plans to expand production and overtake Chrysler as Mexico's top auto assembler. Nissan's long term strategy is to supply Central and South America from its Mexico-based operations and to expand its exports to the U.S. Nissan presently builds the Smyrna, Tennessee assembly plant with 6,000 1.5 litre engines a month and has introduced a new 2.4 l. engine for export to Japan. Nissan plans to build two plants in Aguascalientes, one for body stamping and the other for motor assembly. The plant will have an estimated capacity of 200,000 vehicles per year by 1994 or 1995. It is estimated to cost \$1 billion and will be concentrated in the production of a new Stanza class passenger car beginning in 1993.

Honda is currently only producing motorcycles in Guadalajara but is considering investing in auto assembly facilities. Mercedes Benz purchased most of the shares of Fábrica de Autotransportes Mexicanos (FAMSA) in 1991 and continued to manufacture trucks and buses with a different line. It will start assembling "kit" cars in Mexico (300/year) in order to gain access to the local market and serve as an export base for the rest of Latin America. Over the next 5 years, Mercedes will also invest more than \$146 million to increase truck production from 700 to 1500 a year and to produce 1500 buses.

**TABLE 8**  
**INVESTMENTS IN THE AUTOMOBILE INDUSTRY (1979-1990)**  
(millions of dollars)

COMPANY	INV.\$	LOCATION	PRODUCT	CAPACITY	YEAR
Ford	300	Chihuahua	4c motors	400,000	1983
	500	Hermosillo	cars	130,00	1984
	300	Hermosillo	cars	170,000	1990
	<u>700</u>	Chihuahua	motors	500,000	1991
	1,800				
Volkswagen	245	Puebla	radiators	250,000	1979
	60	Puebla	chassis		1979
	270	Puebla	4c.motors	300,000	1982
	<u>1,000</u>	Puebla	cars	200,000	1992
	1,575		engines		
General Motors	350	Ramos Arizpe	4c motors	400,000	1982
			cars	100,000	1982
Chrysler	135	Lago Alberto	4c motors	270,000	1982
	<u>80</u>	" increase		130,000	1984
	215				

COMPANY	INV.\$	LOCATION	PRODUCT	CAPACITY	YEAR
Nissan	220	Aguascalientes	4c motors	750,000	1983
	<u>1,000</u>		Stanza	200,000	1991
	1,220				
Renault	300	Gómez Palacio	motors	300,000	1983
Mercedes Benz	146		trucks,	1,500	1993
			buses	1,500	
<b>TOTAL</b>	<b>4,606</b>				

Source: Nueva manufactura, globalización y producción de automóviles en México. Jordy Michel, 1991

Additionally, a large end user of auto parts and of maintenance equipment is represented by distributors and workshops (see Table 2). There are an estimated 50,000 shops throughout the country, 20,000 of which are concentrated in Mexico City. Additionally, the large car manufacturers all have several distributors throughout the country, most of which also act as specialized workshops for their brand cars. Following is the number of distributors by company:

Volkswagen	300
Nissan	160
Chrysler	140
Ford	110
Chevrolet	80
<b>TOTAL</b>	<b>790</b>

## 5. MARKET ACCESS

As a result of Mexico's accession to GATT, the Mexican government has gradually opened the economy to international markets. Tariffs have been lowered from a maximum 100% in 1983, to 20% since December, 1988. The official price system has been totally eliminated and import permits are required on only 198 of the total 11,812 items in the Mexican Harmonized Tariff System.

The import climate for auto parts and automobile maintenance and repair equipment has improved significantly as a result of this commercial liberalization. Therefore, imports of equipment for this industry are subject to an ad valorem duty of maximum 20% assessed on the invoice value. In addition, a customs processing fee of 0.8% is assessed on the invoice value. A 10% value added tax (recently reduced from 15%) is then assessed on the cumulative value of both taxes in addition to the invoice value. Some manufacturers who use imported inputs for their products under a Mexican Government approved manufacturing plan may have the duty and/or VAT waived or rebated. Raw materials,

intermediates and machinery for use in manufacturing or assembling products for export are generally eligible to be imported either duty free or under bond.

Formerly, in order to bid on tenders and sell to a government agency or decentralized company, foreign manufacturers required having a local resident agent and to have the foreign supplier registered and accepted by the Secretariat of Planning and Budgeting (Secretaría de Programación y Presupuesto - SPP). As of July 1991, the above requirement for prior registration with SPP has been eliminated.

The new procedures now in force require the foreign supplier to have a local agent or representative and it has to be registered through his local representative as an accepted supplier with each government ministry and/or decentralized agency according to the international tender requirements under review.

International tenders financed by the World Bank or the International Development Bank are open to all member countries of these institutions. More recently, the World Bank, where its credits are involved, has required that bid documents should also include an affidavit confirming that the Canadian company is a bona fide Canadian company with an official residence in Canada and that Canada is recognized as a contributing member to the World Bank.

There are no official metric requirements applicable to imports into Mexico. However, since the metric system of units is, by law, the official standard of weights and measures in Mexico, importers will usually require metric labeling for packaged goods, although the English system is also used. Dual labeling is acceptable. Imported products should be labeled in Spanish containing the following information: name of the product, trade name and address of the manufacturer, net contents, serial number of equipment, date of manufacture, electrical specifications, precautionary information on dangerous products, instructions for use, handling and/or product conservation and mandatory standards. Mexico adheres to the International System of Units (SI). Electric power is 60 cycles with normal voltage being 110, 220 and 400. Three phase and single phase 230 volt current is also available.

Prepared by:  
Caroline Verut  
for the Canadian Embassy  
Mexico City  
August 1990  
Updated December 1991

To call all telephone and fax numbers listed below from Canada, unless they are preceded by a different area code, dial 011-525 first, otherwise dial 011-52-(area) number.

NOTE: The information on companies not located in Mexico City was not confirmed.

**APPENDIX I:  
INDUSTRIAL CHAMBERS AND ASSOCIATIONS**

**ASOCIACION MEXICANA AUTOMOVILISTICA  
MEXICAN AUTOMOBILE ASSOCIATION**

Orizaba 7

Col. Roma

06700 México D.F.

Phone: 208-83-29

Fax: 511-62-85

Contact: Sr. Guillermo Gómez Obregón  
Jefe del Dpto. de Turismo

**ASOCIACION MEXICANA DE DISTRIBUIDORES DE AUTOMOTORES  
MEXICAN AUTOMOBILE DISTRIBUTOS ASSOCIATION**

Mercaderes 134

Col. Sn. José Insurgentes

03900 México D.F.

Phone: 593-26-44

Fax: 651-45-99

Contact: Lic. Fernando Ripoll S.  
Director General

**ASOCIACION MEXICANA DE LA INDUSTRIA AUTOMOTRIZ  
MEXICAN AUTOMOTIVE INDUSTRY ASSOCIATION**

Ensenada 90

Col. Condesa

06100 México D.F.

Phone: 272-11-44

Fax: 515-25-42

Contact: Lic. César Flores E.  
Presidente

**ASOCIACION NACIONAL AUTOMOVILISTICA  
NATIONAL AUTOMOBILE ASSOCIATION**

Miguel Schultz 140

Col. Sn. Rafael

06470 México D.F.

Phone: 705-01-33                      705-02-51

Fax: 546-06-65

Contact: Lic. Alejandro Martín M.  
Gerente Administrativo

**ASOCIACION NACIONAL DE MAYORISTAS DE PARTES PARA AUTOMOVILES A.C.**  
**NATIONAL AUTO PARTS WHOLESALERS ASSOCIATION**  
Dr. Lucio 127-202  
Col. Doctores  
06720 México D.F.  
Phone: 578-35-27  
Fax: 578-88-41  
Contact: Sra. Yolanda Gallardo  
Gerente General

**ASOCIACION NACIONAL DE REPRESENTANTES, IMPORTADORES Y DISTRIBUIDORES DE REFACCIONES Y ACCESORIOS PARA AUTOMOVILES, A.C.**  
**NATIONAL ASSOCIATION OF AUTOMOBILE ACCESSORIES AND PARTS REPRESENTATIVES, IMPORTERS AND DISTRIBUTORS**  
Morelia 38-305  
Col. Roma  
06700 México D.F.  
Phone: 514-37-21 525-28-20  
Fax: 207-64-76  
Contact: Sr. Salvador Elías  
Presidente

**FEDERACION NACIONAL DE TALLERES AUTOMOTRICES**  
**NATIONAL AUTO REPAIR SHOPS FEDERATION**  
Gómez Farías 955  
Col. Centro  
91700 Veracruz, Ver  
Phone: (29) 31-50-04 36-02-24  
Fax: (29) 32-83-60  
Contact: Sr. Alejandro Sánchez V.  
Presidente

**INDUSTRIA NACIONAL DE AUTO PARTES, A.C.**  
Shakespeare 15-30 Piso Col. Nueva Anzures  
11590 Mexico, D.F.  
Phone: 254-70-73  
Fax: 211-09-43  
Contact: Lic. Alonso Ibanez  
Director General

**ASOCIACION NACIONAL DE IMPORTADORES Y EXPORTADORES DE LA REPUBLICA MEXICANA (ANIERM)**  
**IMPORTERS AND EXPORTERS ASSOCIATION**  
Monterrey 130  
Col. 06700 Roma  
México D.F.  
Phone: 564-86-18 584-95-22  
Fax: 584-53-17  
Contact: Sr Ernesto Warnholtz  
Presidente

**APPENDIX II:  
POTENTIAL DISTRIBUTORS AND REPRESENTATIVES**

**BEX INDUSTRIAL, S.A. DE C.V.**

Poniente 128 No 679  
Col. Industrial Vallejo  
02300 México D.F.

Phone: 567-23-22  
Fax: 368-60-07  
Contact: Ing. Joseph Rus  
Director General

**ACTIVO MONTERREY, S.A. DE C.V.**

Aarón Sáenz Garza 1818  
Col. Sta. María  
64650 Monterrey, N.L.

Phone: (83) 33-40-88                      33-43-88  
Fax: (83) 48-91-10  
Contact: Ing. Jaime F. Contro Yllanes  
Director General

**AISLANTES LEON, S.A. DE C.V.**

Km. 8-1011 Vía F.C. Monterrey-Salttillo  
06200 Monterrey, N.L.

Phone: (83) 36-00-36  
Fax: (83) 36-03-55  
Contact: Ing. Antonio Villarreal de la Garza  
Director General

**ALDACO, S.A. DE C.V.**

Atenas 30  
Col. Juárez  
06600 México D.F.

Phone: 566-71-66  
Fax: 703-36-15  
Contact: Lic. Sergio Altschuler  
Director General

**ALDACO TIJUANA, S.A. DE C.V.**

Germán Gedoviux 11 - Desp. 103  
Col. Zona Río  
22350 Tijuana, B.C.N.

Phone: (66) 84-11-50  
Contact: Sergio Altschusler  
Director General

**ANDERTON, S.A.**  
Laminadora 37  
Col. Bellavista Tacubaya  
01140 México D.F.  
Phone: 272-20-99  
Fax: 277-34-45  
Contact: Ernesto Ehrensberger  
Director General

**AP DE MEXICO, S.A. DE C.V.**  
Carr. Constitución Km. 9.5  
Parque Industrial Benito Juárez  
76100 Querétaro, Qro.  
Phone: (42) 801-82 802-15  
Fax: (42) 801-83  
Contact: C.P. Eduardo Rivera Allen  
Director General

**AUTOMOTORES DINA DE CUATRO CAMINOS, S.A. DE C.V.**  
Prol. Sanctorum 6  
Col. Lomas de Sotelo  
53390 Naucalpan, Mex.  
Phone: 395-30-68  
Fax: 395-30-68  
Contact: Sr. Aurelio Borgaro Mills  
Director General

**AUTOREFACCIONES ESPECIALIZADAS, S.A. DE C.V.**  
Av. Cuauhtémoc 1338 - Piso 1  
Col. Sta. Cruz Atoyac  
03310 México D.F.  
Phone: 688-53-22  
Fax: 604-08-95  
Contact: Mario Doniz Lechon  
Director General

**AUTOPAR DISTRIBUIDORA, S.A. DE C.V.**  
Carnicerito 25  
Col. Lomas de Sotelo  
11230 México D.F.  
Phone: 395-99-11  
Fax: 576-49-30  
Contact: Ing. Humberto Angeles  
Gerente General

**BENDIX MEXICANA, S.A. DE C.V.**  
Av. de las Granjas 473-A  
Col. Jardín Azpeitia  
02530 México D.F.  
Phone: 561-00-33  
Fax: 561-62-19  
Contact: Sr. Jerold Dragoo  
Director General

**BOCAR, S.A. DE C.V.**  
Cruz Verde 169-1A  
Col. Los Reyes Coyoacán  
04000 México D.F.  
Phone: 689-70-00  
Fax: 549-34-59  
Contact: Javier Arévalo  
Gerente General

**BORG AND BECK DE MEXICO, S.A. DE C.V.**  
Poniente 150 No.888  
Col. Industrial Vallejo  
02300 México D.F.  
Phone: 567-60-00  
Fax: 567-10-68  
Contact: Ing. Alberto Chávez  
Director General

**BORG WARNER DE MEXICO, S.A. DE C.V.**  
Av. de las Granjas 473-C  
Col. Jardín Azpeitia  
02530 México D.F.  
Phone: 352-51-22  
Fax: 352-72-40  
Contact: Ing. Alejandro Galindo  
Director General

**BUJIAS CHAMPION DE MEXICO, S.A. DE C.V.**  
Poniente 150 No 956  
Col. Industrial Vallejo  
02300 México D.F.  
Phone: 567-72-00  
Fax: 587-53-35  
Contact: Lic. Manuel Torres Huato  
Presidente

**BUJIAS MEXICANAS, S.A. DE C.V.**  
Benito Juárez 80  
Col. Sn. Pablo Xalpa  
54090 Tlalnepantla, Mex.  
Phone: 382-37-01  
Fax: 382-58-80  
Contact: Ing. Roberto Zugarazo  
Gerente General

**CENTRO TECNICO HERRAMIENTAL, S.A. DE C.V.**  
Periférico Luis Echeverría 2295  
Col. Océania  
25280 Saltillo, Coah.  
Phone: (84) 560-11 561-31  
Fax: (84) 546-04  
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**CIRCUITOS MEXICANOS DE NOGALES, S.A. DE C.V.**

Carr. Internacional Km 6.5  
Parque Industrial  
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Phone: (631) 244-50 250-10  
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**CITLA, S.A. DE C.V.**

San Juan 785  
Col. Granjas Modernas  
07460 México D.F.  
Phone: 577-30-33 577-78-80  
Fax: 781-59-23  
Contact: Ing. Alfonso Cervera  
Director General

**COMERCIAL KNEELAND, S.A. DE C.V.**

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Col. Anáhuac  
11320 México D.F.  
Phone: 254-69-47  
Fax: 203-52-76  
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Gerente General

**COMPañIA HULERA EUZKADI, S.A.**

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11320 México D.F.  
Tel: 545-65-40  
Fax: 203-26-08  
Contact: Sr. Richard Grano

**COMPañIA HULERA GOODYEAR-OXO S.A. DE C.V.**

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Phone: 565-40-22  
Fax: 872-32-04  
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**COMPañIA MEXICANA TRI-SURE, S.A. DE C.V.**

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Col. Alce Blanco  
53370 Naucalpan, Mex.  
Phone: 576-76-00  
Fax: 358-84-08  
Contact: C.P. Miguel Alvarez Chacón  
Gerente General

**COMPANIA MYERS ZULUETA DE MEXICO, S.A. DE C.V.**

Dr. Navarro 58  
Col. Doctores  
06720 México D.F.  
Phone: 578-83-42  
Fax: 578-58-54  
Contact: José Luis Zulueta  
Gerente General

**COMPONENTES MECANICOS DE MATAMOROS, S.A. DE C.V.**

Av. Michigan y Prol. Uniones  
Parque Industrial del Norte  
87330 H. Matamoros, Tamps.  
Phone: (891) 629-12 629-16  
Fax: 541-38-92  
Contact: Robert E. Anderson  
Presidente

**CONDUCTORES DE FLUIDOS PARKER, S.A. DE C.V.**

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Zona Industrial  
Toluca, Mex.  
Phone: (72)443-88  
Fax: (72)439-49  
Contact: Ing. Francisco Dávila Palimieri  
Director General

**DISTRIBUIDORA DE SISTEMAS DE CONTROL, S.A. DE C.V.**

Puebla 122-A  
Col. Roma  
06700 México D.F.  
Phone: 525-88-62  
Fax: 525-03-69  
Contact: Gabriel Quezada Suárez  
Director General

**DR DE CHIHUAHUA**

Av. de la Industria 4907 y Pino  
Zona Nombre de Dios  
31170 Chihuahua, Chih.  
Phone: (14) 17-91-00  
Fax: (14) 17-91-00  
Contact: Don H. McGivern  
Director General

**DURA BOND DE MEXICO, S.A. DE C.V.**

Norte 59 No. 88 C  
Col. Industrial Vallejo  
02300 México D.F.  
Phone: 587-77-41  
Fax: 368-08-22  
Contact: Lic. Carlos Vales Ochoa  
Gerente General

**DURAMATIC, S.A. DE C.V.**

Amatlán 14  
Col. Condesa  
06140 México D.F.  
Phone: 553-50-75  
Fax: 553-50-75  
Contact: Julio Trascierra  
Director General

**EQUIPOS DE AFINACION AUTOMOTRICES, S.A. DE C.V.**

José María Iglesias 39  
Col. Revolución  
06030 México D.F.  
Phone: 535-06-77  
Fax: 535-02-85  
Contact: Gilberto Moreno Patrón  
Director General

**ESSEX INTERNACIONAL DE CHIHUAHUA, S.A. DE C.V.**

Parque Industrial Las Américas s-n  
Col. Panamericana  
31200 Chihuahua, Chih.  
Phone: (14) 14-20-04  
Fax: (14) 13-28-82  
Contact: Ing. Gregorio Olivas  
Gerente General

**FONKEL MEXICANA, S.A. DE C.V.**

Hamburgo 70-305  
Col. Juárez  
06600 México D.F.  
Phone: 511-16-20  
Fax: 511-16-48  
Contact: René Fong Kway  
Director General

**FLEXIBOX, S.A.**

Cerrada de Protón 14  
Parque Industrial Naucalpan  
53470 Naucalpan, Mex.  
Phone: 358-13-40  
Fax: 359-59-54  
Contact: Ing. Rodolfo Miller  
Gerente General

**FRENOS HIDRAULICOS AUTOMOTRICES, S.A. DE C.V.**

Av. La Presa 6  
Col. Sn. Juan Ixhuatepec  
54180 Naucalpan, Mex.  
Phone: 586-26-42      586-23-33  
Fax: 515-14-25  
Contact: Ing. Carlos Chávez  
Gerente General

**G.L. PEREZ Y COMPAÑIA, S.A. DE C.V.**

Av. Hidalgo 141-A  
Col. Industrial  
31330 Chihuahua, Chih.  
Phone: (14) 13-31-86  
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Gerente Administrativo

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Presidente

**APPENDIX III:  
AUTOMOBILE MANUFACTURERS IN MEXICO**

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Fax: 250-99-88  
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**FORD MOTOR COMPANY, S.A. DE C.V.**

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Presidente

**GENERAL MOTORS DE MEXICO, S.A. DE C.V.**

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Presidente del Consejo

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