ITALIA

Italian Trade Commission
Government Agency

Market Research

on China Hydraulic, Pneumatic, and Sealing Industry

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EXECUTIVE SUMMARY

1. China *hydraulic*, *pneumatic* and *sealing* machinery industry

- In 2010, the market size of China's *hydraulic*, *pneumatic* and *sealing* machinery industrial output reached RMB 39 Billion
- *Hydraulic*, *pneumatic*, and *sealing* machinery sectors account for 63%, 17%, and 20% of the market respectively
- Growth in 2010 after global economic crisis, e.g. growth of market was 32.6% comparing to 8% in 2009
- Both imports and exports recover, much better than the Year 2009; China's total imports of *hydraulic*, *pneumatic*, and *sealing* machinery was US$ 2.015 billion and exports were US$ 0.55 billion
- In media-low market, *hydraulic, pneumatic and sealing* machinery can mainly cover the local market requirement from local production, and even 10% export to North-America, Europe, South-East Asia and South America Area.
- Rising infrastructure investment and demand from key customer industries (e.g. *construction, agricultural machinery,* and *automotive* etc.) are key factors to drive the industry development
- There are 6,300 – 6,800 manufacturers of *hydraulic*, *pneumatic* and *sealing* products in China; ~90% market is dominated by ~5% of key players (~320)
- Of the 320 key manufacturers, over 35% are foreign-invested (WFOE or JV), taking up one-third of the total domestic production and dominating the high-end market
- In general, there is still a large technology gap existing between foreign and domestic products, especially in terms of quality and durability
- However, local Chinese manufacturers are improving their technology and design manufacturing techniques, allowing them to move up the value chain
- Judging from the figure, China already become strong market requirement country and strong manufacturer country in *hydraulic*, *pneumatic* and *sealing* products, with bright prospection in the future.

2. Government's incentive policies

- To stimulate the economy and industry development, China's government provided support through various incentive policies and support

- 72% of the US$ 589 billion was allocated to infrastructure projects and other construction, which drove demand for c*onstruction machinery* (a key customer segment of *hydraulics*, *pneumatics*, and *seals*) in the last two years

- An important incentive policy affecting *Hydraulic*, *pneumatic*, and *sealing* industry is "*Plan for Modifying and Promoting the Equipment Manufacturing Industry*", issued on May 2009 by State Council

- Specific measures include increasing export rebates, providing insurance for equipment, exemption of import tax & VAT for components of major equipment, and encouraging M&A to adjust industrial structure

- Since December 25, 2009, Chinese Government start the policy to promote *Hydraulic, pneumatic and sealing* industry, which bring big opportunity for development. In the year 2011, the relative companies who get technical permission reach 32 items, with the total investment of 3 billion RMB.

- In 2010, policies seemed to have had positive results; overall economy and *Hydraulic*, *pneumatic*, and *sealing* industry have shown recovery

- For *Hydraulic, pneumatic and sealing* industry, the overall development plan is for cluster promotion and to continue industrial structure adjustment and consolidation

3. Import export analysis and Italy's position

- China's total imports of *hydraulic*, *pneumatic* and *sealing* machinery from Italy reach US$ 165 million in 2010

- The growth rate of import prior to 2008 was quite significant (>41%), but has since stabilized; CAGR between 2006 – 2010 is about 19%

- Italy ranked #5 in total *pneumatics*, *hydraulics* and *seals* imports in 2010, behind *Japan* (21%), *Germany* (18%), *US* (12%) and *South Korea* (12%);

- Total exports to Italy fell to US$ 15.7 million by end of 2010; CAGR between 2006 – 2010 is about 6%

- Key imports from Italy include: *hydraulic power engines & motors, pressure-reducing valves, safety relief valves, gaskets & mechanical seals, and pneumatic power engines & motors* - 89% of total Italy's imports in 2010

- In 2010, imports of *Hydraulic rotary positive vane pumps* from Italy have the strongest growth over 2009 (190% increase over 2009)

- While growth of *pneumatic reciprocating positive displacement pumps* was also significant (25% increase)

- Of all import categories, only *hydraulic power engines and motors* showed a drop from 2009, with imports dropping 31% in 2010 compared to 2009

4. Considerations for Italian players

- Overall economy and *hydraulic, pneumatic, and sealing* industry has shown recovery in China in 2010; China's government continues to provide support for equipment manufacturing and *hydraulic, pneumatic, and sealing* industry

- For examples, China will promote equipment production by increasing export rebates and reducing/eliminating tax on imported components

- *Hydraulic, pneumatic, and sealing* industry has significant potential, especially as it is driven by *construction machinery* and *agriculture machinery*

- There is an overall positive perception of foreign brands in the China market, especially in the high end segments where quality and longevity are key concerns

- In addition, demand for high-end components and equipments will increase as government will adjust industrial structure in the next few years

- Several Italian companies in *hydraulics, pneumatics, and seals* have already established a presence in China, ranging from RO to JV to WFOE

- It is important to note that Chinese companies are improving in quality and manufacturing methods, and will become more competitive in the mid-end markets

- China can still be considered a relatively low cost manufacturing base, providing opportunities for Italian companies to manufacture products for the local market or export

- Additionally, the recent *Plan for Modifying and Promoting the Equipment Manufacturing Industry* promotes the use of domestically manufactured parts; a potential barrier for companies importing to China

CHINA HYDRAULIC, PNEUMATIC & SEALING INDUSTRY

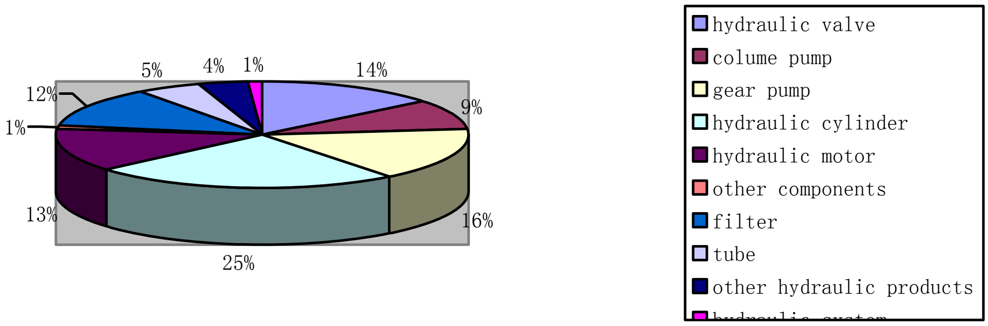
Market Overview

1. whole production value (billion RMB)

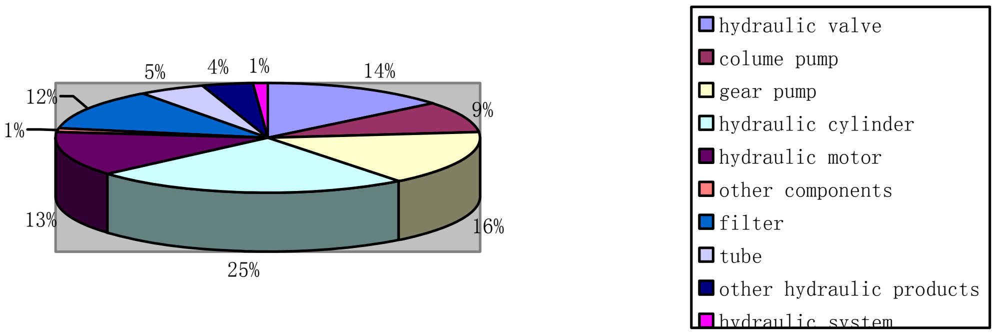
INDUSTRY	HYDRAULIC	HYDRODYNAMIC	PNEUMATIC	RUBBER & PLASTIC SEALING	MECHANIC SEALING	FILLING SEALING	TOTAL
PRODUCTION VALUE	35.13	1.86	11.61	8.56	3.83	2.62	63.73
INCREASE %	30.35	23.52	46.35	38.62	29.83	19.09	33.29

2. market share divided by Hydraulic, Pneumatic and Sealing Industry

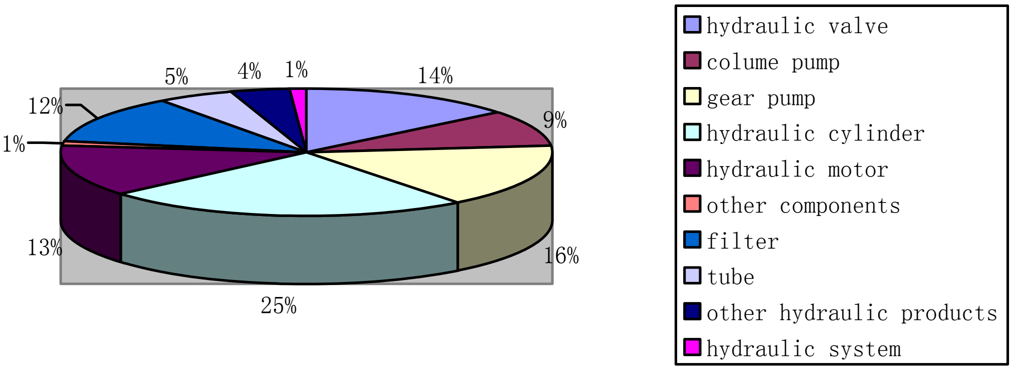
(1) Hydraulic products **(products value 35.113 billion RMB)**



Pneumatic products **(products value 11.61 billion RMB)**



(2) Sealing products **(products value 15.01 billion RMB)**



3. import & export situation (billion USD)

	IMPORT	INCREASE	EXPORT	INCREASE	IMP & EXP	INCREASE	IMP-EXP	INCREASE
All PTC	3.81	32.05%	0.906	28.3%	4.716	31.33%	2.904	33.27%
Hydraulic	2.859	47.5%	0.367	35.7%	3.226	46.17%	2.492	49.66%
Pneumatic	0.465	-5.79%	0.114	-13%	0.579	-7.36%	0.351	-3.31%
Sealing	0.487	7.05%	0.425	39.42%	0.921	21.34%	0.062	-58.94%

(Note: all import and export figure from China Customs)

Industry characteristic analysis

- From 2005 to 2009, PTC market need increase rapidly, and the international market share upgrade.

- In the year 2005, in the international market share of hydraulic products, China range on the forth position, after US, Germany and Japan. From the year 2006, China start to climb up. Until 2009, China range at the top, instead of US.

- In the year 2005, in the international market share of pneumatic products, China range on the fifth position, after US, Japan, Germany and Italy. From the year 2006, China start to climb up. In 2009 and 2010, China range on the second position, quite little distance to US.

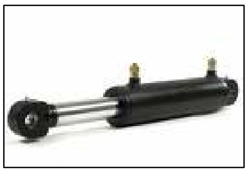
Unit: billion EURO

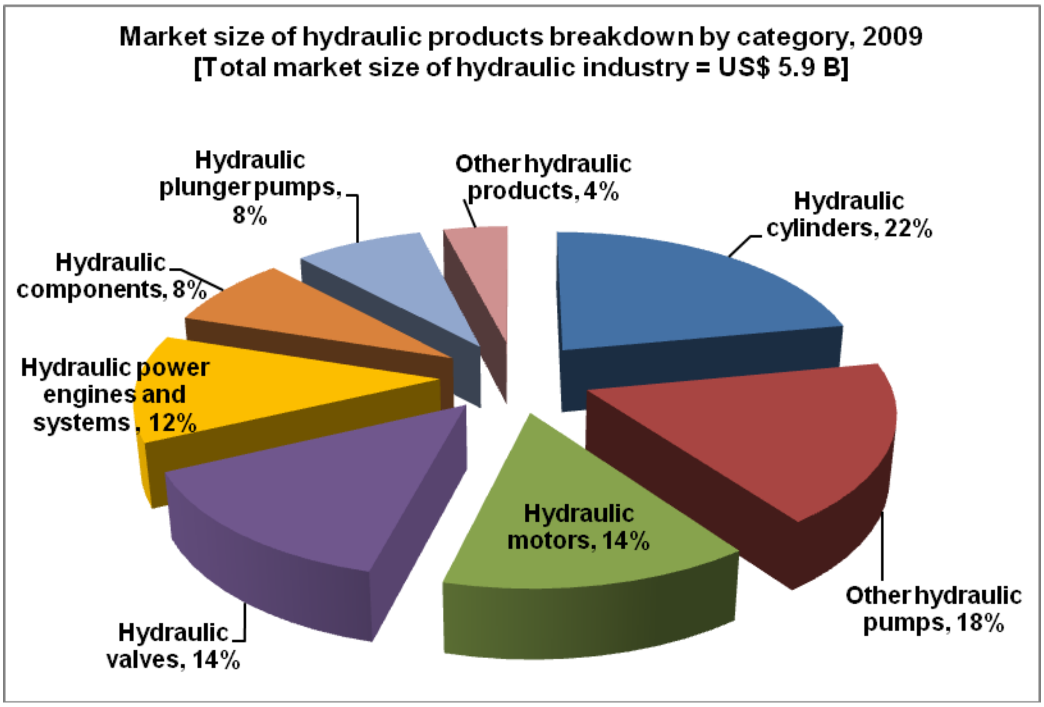
YEAR	HYDRAULIC		PNEUMATIC	
	Sales volume	Increase (%)	Sales volume	Increase (%)
2005	18.22	9.00	7.339	7.36

2006	20.23	11.03	7.551	2.89
2007	22.17	9.58	8.020	6.21
2008	23.22	4.74	7.476	-6.78
2009	14.97	-35.53	5.170	-30.84
2010	21.243	19.37	8.050	26.60

OVERVIEW OF THE THREE SECTORS

Hydraulic industry sector





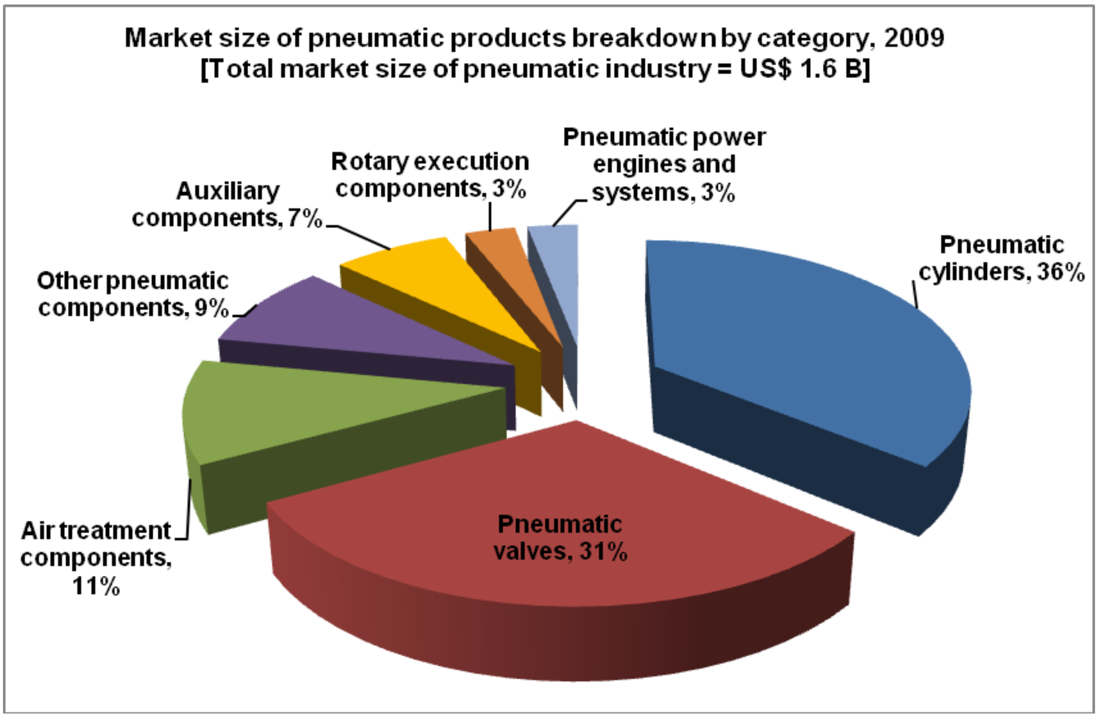
Source: China Hydraulic, Pneumatic and Sealing Machinery Industry Association

- *Hydraulic cylinders*, *hydraulic pumps, hydraulic motors and hydraulic valves* were the major product segments - together accounted for 76% of the hydraulic market
- Key imported product categories include *hydraulic power engines and motors, hydraulic reciprocating positive pumps* and *safely or relief valves*
- *Italy* ranked #5 (US$ 100 M) in the imports *hydraulic* products in 2010, competing with *Japan, Germany*, *US* and *South Korea*
- There are about 2,100 – 2,600 domestic and foreign manufacturers of *hydraulics* in China
- The *hydraulic* sector is dominated by foreign brands such as *Bosch Rexroth, Eaton, Parker, etc.*; most of which have already established manufacturing presence in China

- Large domestic manufacturers such as *Beijing Huade Hydraulic Industrial Group* and *Yuci Hydraulics Group, etc.,* are also improving their technology and enhancing the product competitiveness

Pneumatic industry sector



Source: China Hydraulic, Pneumatic and Sealing Machinery Industry Association

- *Pneumatic cylinders* and *pneumatic valves* were the major products - together accounted for 67% of total *pneumatic* market

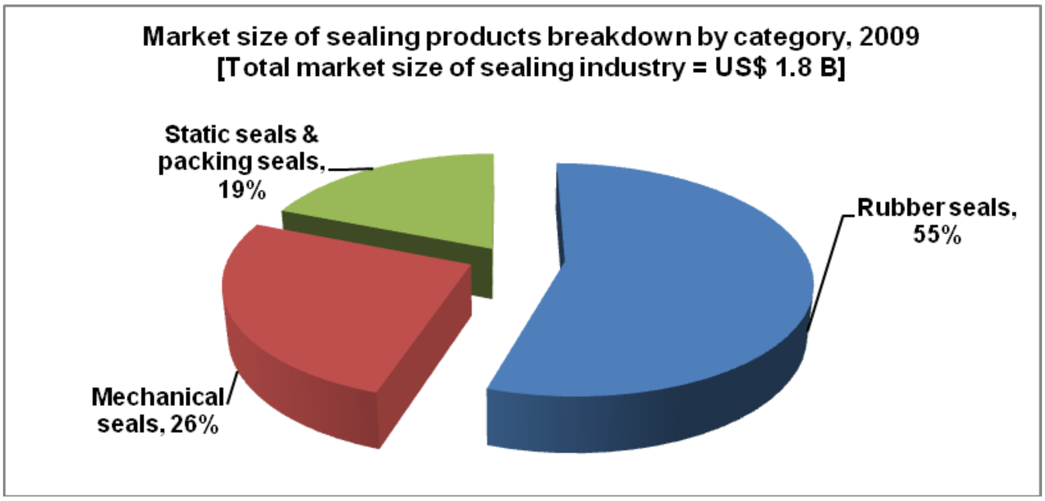
- Imports were mainly *pressure-reducing valves* and *pneumatic power engines and motors*

- *Italy* ranked #4 (US$ 39 M) in the imports *pneumatic* products in 2010, competing with *Germany, Japan,* and the *US*

- There are about 1,600 – 2,100 domestic and foreign manufacturers of *pneumatics* in China
- Key foreign manufacturers include *SMC*, *CKD* (*Japan*), *FESTO, Bosch Rexroth* (*Germany*), and *Camozzi* (*Italy*)
- Key domestic manufacturers include *Guangdong Zhaoqing Fangda Pneumatic Company and Wuxi Huatong Pneumatic Company*
- There have been a few *pneumatic* industry clusters established in *Wuxi* (*Jiangsu*), *Fenghua* (*Zhejiang*), and *Zhaoqing* (*Guangdong*) over recent years

Sealing components sector



Source: China Hydraulic, Pneumatic and Sealing Machinery Industry Association

- *Rubber seals* dominated the market with a 55% of market share; *mechanical seals* and *static seals* accounted for 26% and 19% of the market respectively

- Key imported product categories include *gaskets & similar joints* and *mechanical seals*, which accounted for 13% of the total imports of *hydraulics, pneumatics* and *seals*

- *Italy* was ranked #8 in the imports of *seals* to China in 2010; *Japan, the US, and Germany* have the dominant market positions for *seals* imported into China

- There are about 1,600 – 2,100 domestic and foreign manufacturers of *seals* in China

- Key foreign manufacturers include *John Crane* (*UK*), *NOK (Japan)*, *Freudenberg (Germany), Burgmann (*owned by *Freudenberg* from 2004*)*

- Key domestic manufacturers include *AIG Industrial Group, Colossus Group, Anhui Zhongding Sealing Group Company,* and *Qingdao TKS Sealing Industry Co., Ltd.*

COMPETITIVE LANDSCAPE

Key domestic & foreign players of hydraulic sectors

- There are about 2,100 – 2,600 manufacturers of *hydraulic* products in China, including some that also produce *pneumatic* and *sealing* products

- Almost all the well-known international *hydraulic* manufacturers have already established a presence in China, including *Bosch Rexroth (Germany)*, *Eaton (US)*, *Parker (US) and Atos (Italy)*

- Those large foreign players have had long histories in the China market and entered into China through JV, representative office or sales office

- They have been growing through M&A activities and integration; and today, most of them have become WFOE and established manufacturing facilities and sales networks throughout China, via direct sales and distributors

- Additionally, there are many other small to medium-sized foreign manufacturers of *hydraulics* in the China market; *Italy* in particular, has a large amount of small and medium size *hydraulic* players

- Unlike large *hydraulic* manufacturers, smaller foreign manufacturers tend to have their own niche segments in terms of product offering and technology

- Smaller companies often enter the China market as a representative office and assist / monitor distributors to conduct sales activities

- Large domestic *hydraulic* players are mainly State-owned Enterprises (SOEs), that have greater government resources in support of R&D activities; e.g. *Beijing Huade, Yuci Hydraulics,* etc.

- Also, the *hydraulic* industry has undergone restructuring and privatizing in the past few decades; many former SOEs are now privately-owned (e.g. *Sichuan Changjiang Hydraulics, Dalian Hydraulic Component Company*)

- The price level between products made by domestic and foreign companies can be 3-5 times (or even hundreds of times) different depending on specific products, due to technology level and product quality

Table: Key domestic and foreign players of hydraulic products in China

Company	Legal entity	Year established in China	Location (HQ)	Description
Key foreign players				
Bosch Rexroth (Germany)	WFOE	1978	Shanghai	• World's leader in transmission and control technology / system • Sales and manufacture of *hydraulic* components, electrical transmission and control, and *pneumatics* for applications ranging from automotive to mining • 5 production based in Beijing, Shanghai, Changzhou and Xi'an; sales offices and service centers in 10 cities
Eaton Hydraulics (US)	WFOE	1974	Shanghai	• Leader in supplying *hydraulics*; well-known brands include *Eaton, Vickers, Char-Lynn, Aeroquip* and *Hydro-Line*, etc. • Established in Hong Kong in 1974, entered as a JV then established WFOE in 1993 • Provide all spectrum of *hydraulics* from components to systems • Eaton Hydraulics division has 6 factories and 10 sales offices in Greater China area (including HK and Taiwan)
Parker Hannifin (US)	WFOE & JV	1981	Shanghai	• Global leader in motion & control technologies, and in *hydraulic* products • Full spectrum of *hydraulic* products ranging from cartridge system, *hydraulic* controls, pumps & motors, valves and systems • Also produce *pneumatic* and *sealing* products • 4 sales offices in Shanghai, Beijing, Guangzhou and Hong Kong, 7 factories and 5 JVs
Atos (Italy)	Rep. Office	n/a	Shanghai	• Specializes in *electro-hydraulic* technology • Currently does not own a manufacturing facility in China; however, they do license the manufacturing of their products to a company in *Haimen* of *Jiangsu* province • Sales in China through distributors / agents • Key products include a series of *hydraulic valves and pumps* (including *plunger pumps*)
Beijing Huade Hydraulic Industrial Group Co., Ltd.	SOE	1979	Beijing	• One of the most important manufacturer and biggest production base of *hydraulic* components and power units in China • Four types of core products include *hydraulic valves, pumps/motors, power units* and *hydraulic castings* • Export to *US, Japan*, Europe and other Asian countries – well-known Chinese brands of *hydraulic* components • 20 sales offices and branch companies in China
Yuci Hydraulics Group Corp.	SOE	1988	Yuci, Shanxi	• Important production base of *hydraulic* products in China; account for 10% of total *hydraulic* components production • Key products include *common valves, modular, cartridge, proportional valves, vane pumps, gear pumps, large bore cylinders, filters, hydraulic hammers*, etc. • Some exports to Europe, Japan, Southeast Asia

				and Middle East countries • The group has 6 subsidiaries and 3 JVs; leading company is *Yuci Hydraulics Company Ltd.* which was found in 1965
Sichuan Changjiang Hydraulic Components Co. Ltd.	Private	2003	Luzhou, Sichuan	• Reformed and restructured from SOE • Leading supplier of *hydraulic* components • Key products include *hydraulic cylinders, gear pumps, gear motors, multiple directional valves, hydraulic tools and hydraulic systems* etc. • It has 2 subsidiaries and 2 holding companies
Dalian Hydraulic Component Co., Ltd.	Private	1965	Liaoning	• Formerly *Dalian Hydraulic Component Factory* • One of the earliest production base and export base of hydraulic components • 30 years of experience in producing *hydraulic vane pumps* • Technology transfer / cooperation with *Vickers* (US Company) in 1989

Key domestic & foreign players of pneumatic sectors

- There are about 1,600 – 2,100 manufacturers of *pneumatic* products in China, including some that also produce *hydraulic* and *sealing* products

- Almost all the world's leading *pneumatic* manufacturers have already established a presence in China, including *SMC*, *CKD* (*Japan*), *FESTO, Bosch Rexroth* (*Germany*), and *Camozzi* (*Italy*)

- These foreign manufacturers benefit from China's relatively low production cost and use China as a production base and exporting hub

- For example, China has already become the largest manufacturing and exporting base for *SMC* (*Japan*)

- Large foreign companies have also established a direct sales network (e.g. sales offices) in China, to provide better after-sales services and technical support; some also using distributors and agents to sell

- There are very few large domestic company in China's *pneumatic* industry – *Guangdong Zhaoqing Fangda Pneumatic Company* is the leading one with the most categories of pneumatic components in China

- Most of local *pneumatic* manufacturers are small to medium-sized with limited R&D capabilities, and they focus on lower-end market competing on price

- The *pneumatic* industry has been privatizing since the early 1990's and now most domestic *pneumatic* manufacturers are private companies

- For example, *Guangdong Zhaoqing Fangda Pneumatic Company and Wuxi Huatong Pneumatic Company* are both formerly State-Owned Enterprises (SOEs)

- In addition, there are some technical / R&D institute that dedicate for developing innovative *pneumatic* products or upgrading *pneumatic* technology, e.g. *Wuxi Pneumatic Technical Research Institute*

- There have been a few *pneumatic* industry clusters established in *Wuxi* (*Jiangsu*), *Fenghua* (*Zhejiang*), and *Zhaoqing* (*Guangdong*) over recent years

- *Pneumatic* companies in these industry clusters together account for over two-thirds of total *pneumatic* companies in the industry

Table: Key domestic and foreign players of pneumatic products in China

Company	Legal entity	Year established in China	Location (HQ)	Description
Key foreign players				
SMC (Japan)	WFOE	1994	Beijing	• World's leading *pneumatic* components manufacturer • China is *SMC*'s largest manufacturing and exporting base besides *Japan* • Product portfolio include high pressure products, high frequency, high speed response, long service life products, air preparation and air line equipments, and process valves, etc.
FESTO (Germany)	WFOE	1993	Shanghai	• Worldwide leading supplier of *pneumatic* and *electrical automation* technology • Has manufacturing facility and warehouse in Shanghai and subsidiaries in over 30 cities, providing after-sales service and technical support • Products cover all aspects of *pneumatics*
CKD (Japan)	WFOE	1992	Shanghai	• Global leader in *pneumatic* industry • Manufacture and sales *of pneumatic valves, pneumatic cylinders, pneumatic auxiliary components, fine system components, fluid control components* and *other functional components* • Has manufacturing facility in *Wuxi* and sales offices in 22 cities

Camozzi (Italy)	JV	1993	Shanghai	• World's leader in producing *pneumatic* components • Establish Joint Venture with *Shanghai Automation Instrumentation Corp.* - the largest JV in China's *pneumatic* industry • Has manufacturing facility in *Shanghai* and sales network in 9 cities • Products covers all spectrum of *pneumatic* components
Guangdong Zhaoqing Fangda Pneumatic Co., Ltd.	Private	1975	Zhaoqing, Guangdong	• Formerly a State-owned company • One of the most well-known company in *pneumatic* industry – has large product portfolio of pneumatics • Mainly produce *pneumatic cylinders, pneumatic valves*, and *air components* • Some products export to Southeast Asia
Wuxi Huatong Pneumatic Company	Private	2001	Wuxi, Jiangsu	• Formerly *Wuxi Pneumatic Component Factory* • Larger scale, longer history in producing *pneumatic* components in China (backbone enterprise of China pneumatic industry) • A medium-sized company; wide range of *pneumatic* products
Ningbo Jiaerling Pneumatic Machinery Co., Ltd.	Private	1995	Ningbo, Zhejiang	• One of the leading manufacturer of *pneumatic* components in China • Key products include *solenoid valves, air cylinders, air preparation units, pneumatic fittings & components*

Key domestic & foreign players of sealing sector

- There are around 1,600 – 2,100 *sealing* manufacturers in China, including some that also produce *hydraulic* and *pneumatic* products

- Many well-known international *sealing* manufacturers have already established a presence in China, including *John Crane* (*UK*), *NOK (Japan), Freudenberg (Germany), Burgmann (*owned by *Freudenberg* from 2004*)*, etc.

- While small and medium size foreign *sealing* companies (e.g. *FT*) tend to established Representative Offices in China and utilized distributors

- Key domestic players include *AIG Industrial Group, Colossus Group, Anhui Zhongding Sealing Group Company,* and *Qingdao TKS Sealing Industry Co., Ltd.*

Table: Key domestic and foreign players of sealing sector in China

Company	Legal entity	Year established in China	Location (HQ)	Description
Key foreign players				
John Crane (UK)	WFOE	1987	Tianjin	• Leading *mechanical seal* provider • Has a production facilities in Tianjin and sales and service offices in 13 cities • Operates well-known brands such as *John Crane, Flexibox, Metastream, Sealol, Lemco, Safematic* and *ProTech* • Key products include *mechanical seals, other seals* and *power transmission couplings*
Freudenberg (Germany)	WFOE & JV	1980	Shanghai	• Businesses with China started as early as 1980; currently operates 9 subsidiaries in China (including *Burgmann*) and one JV with *NOK* (Japan) • This JV is specialized in seal products and solutions and has sales office in 6 cities • Production facilities and sales offices all over China • Key products are a variety of *mechanical seals* products
Burgmann. (Germany)	WFOE & JV	1995	Shanghai	• *Burgemann* belonged to *Freudenberg* from 2004 • Cooperated with *Eagle (Japan)* from 2004 to specialize in *sealing* products • *Eagle Burgemann has 2 JVs and 3 subsidiaries in* Dalian, Shanghai and Wuxi
NOK (Japan)	JV	1995	Shanghai	• NOK set up relationship early in 1960, and started their China's business in 1995 by setting up JV - *NOK-Freudenberg* • *NOK* and *Freudenberg* own 50% share of the Joint Venture • This JV is specialized in seal products and solutions and has sales office in 6 cities
FP Seals (Italy)	Rep. Office	2004	Shanghai	• Established Rep Office in Shanghai • Key products include *oil seals* and *other special sealing materials*
Key domestic players				

AIG Industrial Group	Private	1996	Nanjing, Jiangsu	• One of the largest and most advanced technology companies in China's industrial operation and maintenance technologies • Has 3 major business lines include *Sealing Device Division* • Their own brands include AIG, Enviro, SEAL-N-C, Reason; distributed brands include Arc, Eriks, Trico etc. • Service network of 20 offices all over China
Colossus Group	Private	1988	Dandong, Liaoning	• Largest manufacturer of *mechanical seals* in China • Key products are *mechanical seals* and supporting system; key application in the fields of fluid transpiration in petroleum, chemical and petrochemical industries • Has large scale production facilities and R&D center • Products also export
Anhui Zhongding Sealing Group Company	Private	1980	Ningguo, Anhui	• China's largest *rubber seals* manufacturer and exporter for automotive industries • Listed in *Shanghai Stock Exchange* in 2007 • Set up subsidiary in *US* in 2003 • Merged *HST* and *KA (South Korea)* in 2004, *Schmitter (Germany)* in 2007, *AB (US)* in 2008 and two rubber factories of *Miles Industrial Company (US)* in 2009
Qingdao TKS Sealing Industry Co., Ltd.	Private	1976	Qingdao, Shandong	• Leading specialized manufacturer of rubber and *plastic sealing* products • Products include *oil seals, valve stem oil seals, PTFE oil seals, gas spring oil seals* and *sealing gaskets* etc. • Serve mainly *automotive, hydraulic and pneumatic, agricultural industries* • Products export to *North America*, *Germany* and *Australia*

SNAPSHOT OF KEY CUSTOMER SEGMENTS

The following section gives a snapshot of the current situation of several key customer segments for the hydraulic, pneumatic, and sealing industry, which will heavily influence the market in the near future

Overview of key customer segments

- *Hydraulic, pneumatic* and *sealing* industry is an upstream industry to various machinery and manufacturing industries such as *construction*, *agriculture*, *metallurgical*, *plastic*, *auto-manufacturing* and *petrochemical*, etc.

- Though being only a small part of the value chain to the machinery sectors, the *hydraulic*, *pneumatic* and *sealing* industry is key to the success of industrial automation and thousands of infrastructure projects

- According to "*Plan for Modifying and Promoting the Equipment Manufacturing Industry*" and outline of the "*12th Five-Year Plan (2011-2015)*", machinery & equipments manufacturing industry will be the key industry that the state will mainly develop

Table: Key customer segments of hydraulic, pneumatic and sealing industry

Key customer industries		Description
Agriculture machinery		• *Hydraulic* products used for agriculture machines account for ~5% of *hydraulic* product sales (retail sales excluded) • Demand for *gear pumps, plunger pumps, multi-way valves*, and *cylinders* • Agriculture machinery enjoy subsidy of 30% of total cost; the industry has ~20% industrial value increase in 2010 • Great potential in agriculture machinery market; in particular, the products used for *small sized tractor, carts and combine-harvester*
Construction machinery		• Largest customer market for *hydraulic* products, accounting for 45-50% of industry sales • Demand for *hydraulic* parts of *excavators, bulldozers, loaders, levers, cranes, fork-lift trucks*, and *concrete mixers*, etc. • Great potential in construction machinery market due to industrial project, real estate and infrastructure construction; sales in 2010 have a >15% growth • In particular, excavator, concreting machinery, hoisting crane, forklift, loader, bulldozer will

		have better development
Metallurgical machinery		• *Hydraulics* and *pneumatic*s used for metallurgical machines account for 15% and 9% respectively (retail sales excluded) • *Hydraulic* and *pneumatic* products account for ~10% of manufacturing cost of metallurgical machines • Metallurgical and mining machines relies highly on imported *hydraulic*, *pneumatic* and *sealing* components; will recover gradually in 2010, but not as good as other machineries
Machine tool manufacturing		• Large demand for *high pressure, high volume plunger pumps, cartridge valves, electro-magnetic valves, proportional valves, low noise vane valves* and *lighter plunger pumps* • Driven by downstream (e.g. automotive and construction machinery) industry, machine tool recovered greatly in 2010 with 15% growth • Increasing demand for high efficiency, high accuracy, and automatic machine tools, especially for *CNC (Computerized Numerical Control)* and *casting & forging machines*
Plastic machinery		• *Hydraulic* and *pneumatic* technology will continue to be the major technology for plastic machinery manufacturing • Plastic machinery is demanded for *mid - high pressure variable plunger pumps, vane pumps, cartridge valves, electro-magnetic valves, proportional valves* and *server valves* • Driven by downstream industries development, plastic machinery will have a great potential market; in particular, products of *precise injection machine, High Power single screw extrusion machine*, and *blow molding machine*
Automobile and motorcycle manufacturing		• Domestic annual production of automobile reached 13 million in 2009 and is expected to reach 15 million by 2010 • Although purchase tax decreased from 15% to 7.5%, demand for manufacturing and maintenance of automobiles will still increase and dive *hydraulic*, *pneumatic* and *sealing* products / components

Oil and petrochemical industry		• Many important oil, gas and petrochemical projects are under construction, resulting in demands for large, highly efficient *oil & gas exploitation, drilling machines* and *petrochemical equipment* • *Hydraulic, pneumatic* components, *mechanical seals, static seals* used for oil, gas and petrochemical equipment have greater demand

IMPORT AND EXPORT ANALYSIS

- During the previous 10 years, the market share of Italy is consolidated at around 5-6% in Chinese market, but it decreased to 4.15% in 2010 with the affection of finance crisis in Europe

- However Italy consistently ranks the no.5 export country to China. It achieved around 161 millions of USD in 2010 with an increase of 5.64% compare to 2009.

- For the first eight months of 2011, the total export from Italy to China broke through USD 150 million of USD, up 40.4% on the last year's same period. The market share returned around 5%

- The product category "841229 - Hydraulic Power Engines & Motors" China import from the world achieved 1078 million of USD, Italy ranked 7th position as the supplier country with 4.12% market share in 2010

- The product category "841229 - Hydraulic Power Engines & Motors" China import from Italy has the biggest market share 27.48% compare to other category and achieved about 44.5 million of USD in 2010. It has 36.7 million of USD in the previous 8 months in 2011 with 20.8% increase compare to the same period of 2010

- The product category "84136032- Rotary Positive Vane Pumps, Hydraulic" China import from Italy has the biggest increase 188% compare to 2009, but only with 0.14% market share in 2010.

ITALIA

Italian Trade Commission
Government Agency

Import Statistics

China Total Import from the World

Millions of US Dollars

		Jan-Dec			% Share			%Change
Rank	Country	2008	2009	2010	2008	2009	2010	- 10/09 -
0	-- World --	2940.89	2905.40	3890.94	100	100	100	33.92
1	Japan	677.02	715.79	1119.73	23.02	24.64	28.78	56.43
2	Germany	709.69	615.61	700.34	24.13	21.19	18	13.76
3	United States	396.73	377.53	506.09	13.49	12.99	13.01	34.05
4	Korea, South	235.56	239.52	458.75	8.01	8.24	11.79	91.53
5	***Italy***	***163.08***	***153.02***	***161.64***	***5.55***	***5.27***	***4.15***	***5.64***
6	Sweden	115.08	106.93	150.33	3.91	3.68	3.86	40.59
7	France	87.30	78.09	110.49	2.97	2.69	2.84	41.48
8	Netherlands	40.78	105.09	91.36	1.39	3.62	2.35	-13.06
9	Finland	37.26	45.56	68.33	1.27	1.57	1.76	49.98
10	United Kingdom	69.55	66.08	64.29	2.37	2.27	1.65	-2.7

China Total Imports from Italy

Millions of US Dollars

		Jan-Dec			% Share			%Change
HS	Description	2008	2009	2010	2008	2009	2010	- 10/09 -
	Total of the sector	163.08	153.02	161.64	100	100	100	5.64
841229	***Hydraulic Power Engines & Motors Nes***	***39.21***	***44.45***	***44.42***	***24.04***	***29.05***	***27.48***	***-0.07***
848110	Valves, Pressure Reducing	22.51	26.03	29.47	13.8	17.01	18.23	13.25
841221	Hydraulic Power Engines & Motors Linear Acting (Cy	35.59	34.57	21.72	21.82	22.59	13.44	-37.16
848140	Valves, Safety Or Relief	13.10	12.93	17.37	8.03	8.45	10.75	34.38

8484	Gaskets & Sim Joints Of Met Sheeting Combined W/Ot	19.34	14.13	15.48	11.86	9.23	9.58	9.55
841231	Pneumatic Power Engines & Motors Linear Acting (Cy	15.63	7.60	11.54	9.58	4.97	7.14	51.78
84135039	Other Reciprocating Positive Pumps, Hydraulic	3.66	2.89	7.89	2.25	1.89	4.88	172.57
841239	Pneumatic Power Engines & Motors Nes	7.52	4.47	5.45	4.61	2.92	3.37	21.73
84135031	Reciprocating Positive Plunger Pumps, Hydraulic	2.37	3.73	5.19	1.45	2.44	3.21	38.99
84136022	Rotary Positive Gear Pumps, Hydraulic	2.99	1.56	2.10	1.83	1.02	1.3	34.91
84135010	Pneumatic Reciprocating Positive Displacement Pump	0.89	0.57	0.78	0.55	0.37	0.49	37.38
84136032	***Rotary Positive Vane Pumps, Hydraulic***	***0.28***	***0.08***	***0.22***	***0.17***	***0.05***	***0.14***	***188.17***

Source of Data: China Customs

“841229” China Total Imports from the World

Millions of US Dollars

		Jan-Aug			% Share			%Change
Rank	Country	2009	2010	2011	2009	2010	2011	- 11/10 -
	-- World --	582.63	684.70	832.86	100	100	100	21.64
1	Japan	134.63	199.90	196.91	23.11	29.2	23.64	-1.49
2	Korea, South	41.42	92.79	179.51	7.11	13.55	21.55	93.46
3	Germany	155.14	108.21	165.45	26.63	15.8	19.87	52.9
4	United States	43.28	43.81	72.14	7.43	6.4	8.66	64.67
5	Sweden	44.47	52.90	51.78	7.63	7.73	6.22	-2.11
6	Finland	23.59	36.32	37.81	4.05	5.31	4.54	4.1
7	***Italy***	***31.37***	***30.35***	***36.68***	***5.39***	***4.43***	***4.4***	***20.85***
8	United Kingdom	6.87	6.98	12.00	1.18	1.02	1.44	71.86
9	Norway	25.94	25.67	11.64	4.45	3.75	1.4	-54.64
10	France	9.52	15.65	9.76	1.63	2.29	1.17	-37.68

Source of Data: China Customs

"84136032" China Total Imports from the World

Millions of US Dollars

		Jan-Dec			% Share			% Change
Rank	Country	2008	2009	2010	2008	2009	2010	- 10/09 -
	-- World --	3.06	9.33	18.25	100	100	100	95.59
1	Japan	0.21	5.26	11.64	6.86	56.37	63.77	121.26
2	United States	0.62	1.60	2.03	20.1	17.1	11.11	27.13
3	Germany	1.35	1.36	1.98	44.15	14.6	10.87	45.63
4	Taiwan	0.23	0.21	1.18	7.67	2.26	6.44	457.66
5	France	0.04	0.05	0.40	1.33	0.5	2.2	758.85
6	India	0.03	0.09	0.23	1.01	0.99	1.28	153.35
7	***Italy***	***0.28***	***0.08***	***0.22***	***9.15***	***0.82***	***1.2***	***188.17***
8	Korea, South	0.05	0.05	0.20	1.73	0.54	1.1	303.2
9	Austria	0.00	0.01	0.13	0.07	0.11	0.71	1216.12
10	Hungary	0.00	0.03	0.06	0	0.27	0.33	142.25

Source of Data: China Customs

Practical options for Italian players approaching the market

Possible market entry strategies

- There are several possible market entry options for Italian *hydraulic*, *pneumatic* and *sealing* manufacturers, and can be seen by Italian companies already present in the market

- Entry mode would depend on the company's business objectives, and it is often the case that there is no perfect solution to a specific company's objectives

- The four (plus one) main entry options for entry into the China market (more details provided later) include:

  1. *Use of distributors / agents* – simplest of all methods, if the company sells products

  2. *Representative Office* (RO) – the most simple legal setup format; it requires minimal capital investment but is also limited in business scope

  3. *Joint Venture* (JV) – cooperative or equity Joint Ventures with local company

4. *Wholly Foreign Owned Enterprise* (WFOE) – multiple types exist and is determined by business scope

5. *[Acquisition of local company* – generally not suitable for Small and Medium Enterprises as it requires significant resources and M&A experience to conduct proper due diligence]

Table: Examples for each entry mode

Entry Models	Examples
Distributors/agents (if sell in China)	• *SKF* entered into China in 1912 through a local distributor in *Shanghai* • *Air Torque* still sell products through distributor today without any presence
Rep. Office (RO)	• *Atos* firstly entered China by setting up RO in *Shanghai* • *Bosch Rexroth* entered China mainland by setting up RO in *Shanghai* at 1992
Joint Venture (JV) with a local partner	• *Camozzi* firstly entered China in 1993 through establishing Joint Venture with *Shanghai Automation Instrumentation Corp.* - the largest JV in China's *pneumatic* industry • *Eaton* entered China in 1993 firstly through setting up JV with *Shandong Hydraulic Co., Ltd.;* the JV mainly produced hydraulics for equipments used for agriculture and construction • *Parker* entered China in 1980's through JV with a Hubei local company
WFOE	• *FESTO*, firstly setup a manufacturing WFOE in *Shanghai* in 1993

Table: Description of entry options for Italian players

Entry Option	Reason for Choosing Option	Description/Activities	Pros	Cons
1. Use distributors / agents	Sell / Distribute products in China through agent	• Use distributor to import and sell components or product in China; need one with strong network • No legal entity needed	• Requires no direct investment in China • Relatively low risk • Use distributors' network to develop brand awareness	• May be challenging to identify a committed distributor • Results may be uncertain
2. *Set up a Rep. Office (RO)*	Manage distributors, conduct market research and business development activities	• Manage distributors • Network, conduct business development and support activities • Note: Rep. Office cannot issue Fapiao (invoices) or directly receive payment for goods or services	• Simplest way of establishing direct China presence • Low investment • Allows company to learn local market conditions • May develop business / client network first	• Still a "light" presence (RO cannot conduct commercial transaction or issue invoice) • RO mainly limited to marketing function
3. Establish a Joint Venture (JV) with a local partner – Equity or Cooperative JV	Can be several: time to market, technology fit, sales channels, local network, etc	• Joint venture with a local machinery or product manufacturer • Equity or cooperative JV • Must check if product category is restricted or prohibited	• May provide cost advantage from manufacturing or assembling locally • Faster time-to-market • Leverage China knowledge and distribution network of	• May be risky; takes time and effort to find an appropriate partner • Chinese partner may have little to offer in terms of technology, but may provide market access

				local partner • Low initial investment than WFOE • Be able to offer better after-sales service and technical support	• Potential IP issues • Need to manage relationship with JV partner - conflicts not uncommon, difficult to maintain control
4. Set up a Wholly Foreign Owned Enterprise (WFOE)	Manufacturing WFOE	Manufacture products in China	• Set up factory and manufacture *hydraulic*, *pneumatic* and *sealing* products • May use distributors to sell within China	• Full control and ownership of the company • Be able to offer better after-sales service and technical support • Highest return and most sustainable in the long run • Increasingly popular choice for many foreign players committed to China • Greater control of IP	• Higher investment and commitment required • Significant time to setup / develop the business
	FICE	Sell / distribute products in China	• Trade and sell/distribute *hydraulic*, *pneumatic* and *sealing* products within China		
5. [Acquisition of local company]		Reasons for acquisition may vary	• Alternative to WFOE or JV	• May acquire local channels / knowledge quickly • Mitigate issues associated with having JV partner	• Potentially highest investment required • Difficult to conduct proper due diligence • Existing distribution network may not be suitable for distributing high-end products

SUMMARY AND CONCLUSIONS

1. Industry general situation

- This industry is divided into six main sub-industry: HYDRAULIC, HYDRODYNAMIC, PNEUMATIC, RUBBER & PLASTIC SEALING, MECHANIC SEALING, FILLING SEALING. Nowadays, there are more than 3000 companies working in Hydraulic, Pneumatic and Sealing industry. Inside, there are 500 big ones.

- In the Year 2010, the gross value of PTC industrial output reach 637.3 billion RMB, 33.29% increasing than last year. For the total import and export, it reached 4.716 billion USD. Inside, the import cover 3.81 billion USD, 32.06% increasing than last year; the export cover 0.906 billion USD, 28.33% increasing than last year.

- According to the figure from ISC, the market share of Chinese hydraulic products takes the first in the world, instead of US. And the world fluid drive produce market share range the second in the world. Now China is a big country for the need of fluid drive, but not a strong country.

2. Government policy bring the opportunity to development

Since December 25, 2009, Chinese Government open the policy to promote PTC industry, which bring big opportunity for development. In the year 2011, the relative companies who get technical permission reach 32 items, with the total investment of 3 billion RMB.

3. Market need increase

- In the Year 2010, it's right the period for China to enlarge internal demand, and the fundamental development require big opportunity for PTC industry. With the better situation for Chinese equipment manufacturer after world economic crisis, the industry value of mechanical field increase 33.9% than last year., inside the farmer machinery, automotive, heavy industry, machine tool, plastic machinery etc develop so rapidly, which support the development of PTC industry.

- Compare with the bad situation in the year 2009 caused by the world economic crisis, the export of PTC industry increase 28.3%, much better than the same period of 2008.

4. Top-level conflict

- With the quick development of equipment manufacture, there is a big demand for the high level PTC products.

- There is high-level demand, but the local market can not offer; in local market, there are too much media-low level products, and import high level products from abroad; in international market, the high technology develop so fast, but in China, the basic is too poor, for the management, and also for the research capability; the capability of competition in international market is too weak.

APPENDIX

A.1 – Import tariffs by HS code

- Import of *hydraulic*, *pneumatic* and *sealing* machinery and components are subject to an import tariff rate (2-14%) and an additional import VAT (13-17%)

- The VAT is calculated as follows:

TAX Payable = VAT Rate × [Dutiable Value + Customs Duty]

- The dutiable value of imported goods includes the purchase price plus the transportation and insurance costs

HS code, customs duties and VAT for hydraulic, pneumatic and sealing sectors

Table: Tariff and VAT for imports of hydraulic, pneumatic, and sealing machinery

HS Code	Description	Tariff	VAT rates
Hydraulic			
841221	Hydraulic power engines and cylinders, linear acting	12%	17%
841229	Hydraulic motors, hydraulic power engines used for wind turbine and others	7% / 10% / 14%	17%
84135031	Hydraulic reciprocating positive plunger pumps	6%	13% / 17%
84135039	Other hydraulic reciprocating positive pumps	6%	13% / 17%
84136022	Hydraulic rotary positive gear pumps	3% / 6%	13% / 17%
84136032	Hydraulic rotary positive vane pumps	6%	13% / 17%
848140	Safety or relief valves	5%	17%
Pneumatic			

841231	Pneumatic power engines & cylinders, linear acting	5% / 7% / 14%	17%
841239	Other pneumatic power engines & motors	14%	17%
84135010	Pneumatic reciprocating positive displacement pumps	6%	13% / 17%
848110	Pressure-reducing valves	2% / 5%	17%
Sealing			
8484	Gaskets & similar joints of metal sheeting combined with other material, mechanical seals	5%	17%

A.2 – Key trade shows and exhibition in China

The 14th China International Power Transmission & Control Technology (Jinan) Exhibition
Location: Jinan, Shandong Province
Date: March 1-3, 2012
Website: www.jn-ptc.com

The 8th China International Power Transmission and Automatic Control 2012 (CIPTC 2012)
Location: Beijing
Date: June 28-30, 2012
Website: *www.ciptc.org*

PTC ASIA 2012
Location: Shanghai
Date: Oct 29-Nov 1, 2012
Website: www.ptc-asia.com