





SH PAC

GROWING WITH CUSTOMERS
THROUGH IMPROVEMENT &
INNOVATION



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Global Major, SH PAC!

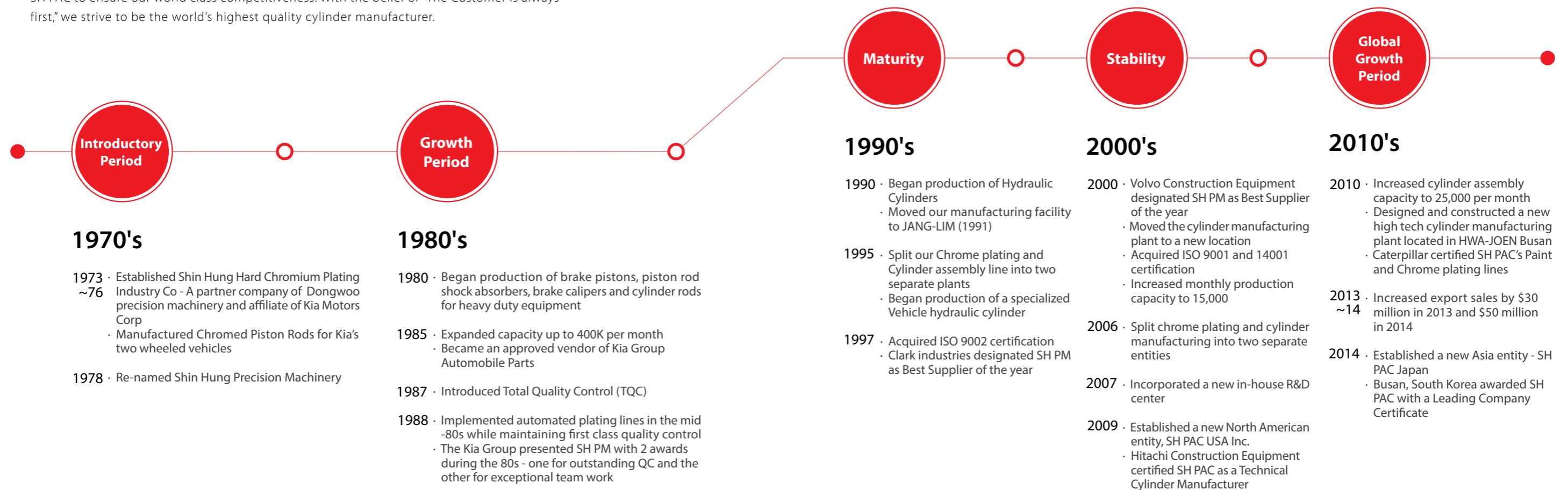
With dedication and innovation, SH PAC - now proudly a Global Major - is executing its highest effort for customer satisfaction. SH PAC continues to grow as a hydraulic cylinder company from the efficiency built over its 40 years of technical knowledge and hands on experience.

Rod Since **1973** ↑↑↑

Cylinder Since **1990** ↑↑↑

Challenge of SH PAC, Since 1973

SH PAC is modeled after the concept of a quality first policy that is constantly challenging SH PAC to ensure our world class competitiveness. With the belief of "The Customer is always first," we strive to be the world's highest quality cylinder manufacturer.



**SH PAC,
The First
&
The Best**

innovation

PRODUCTS

Customer oriented and is known as a World Class leading High-Tech company

advance

quality

technology

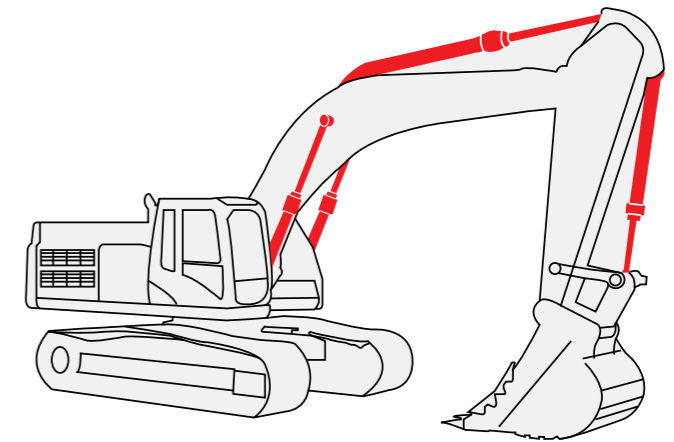
leader

SH PAC

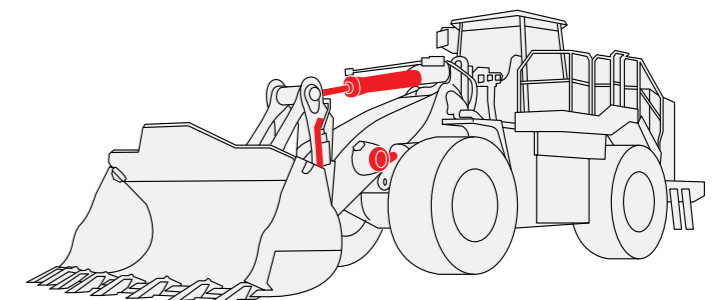


Developing Innovative Products for Customers

Excavator (2.5t~120t Class)

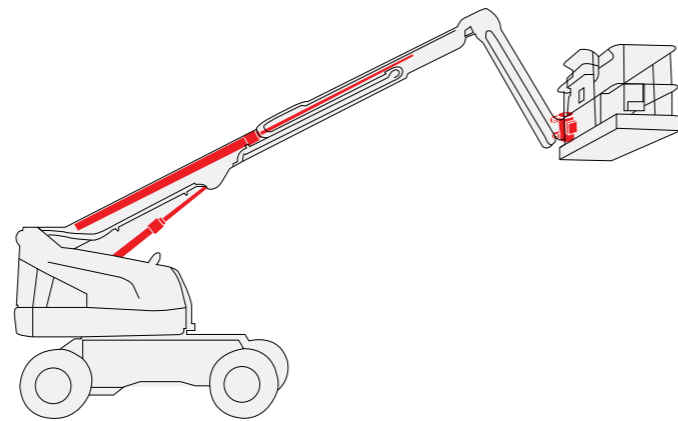


Wheel Loader (2.5t~45t Class)



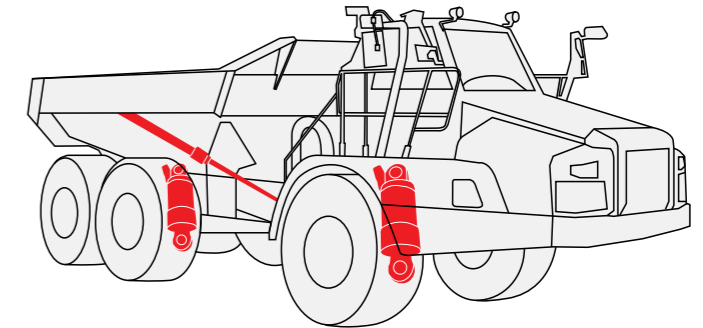
Delivering out **Trust** to Customers

Aerial Work Platform (2.5t~45t Class)

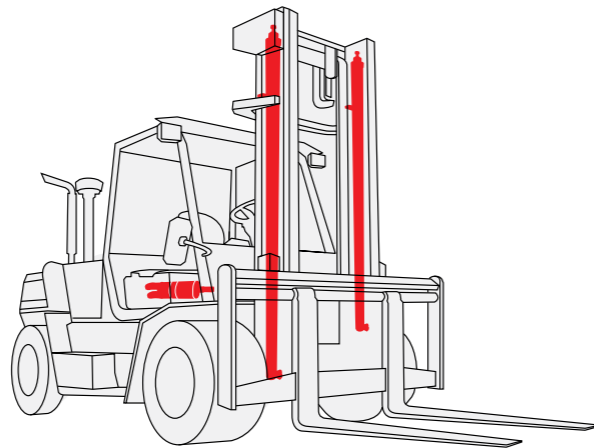


Providing the **Superlative Quality and Value**

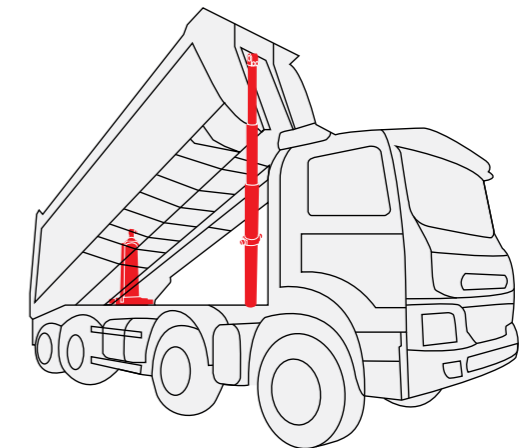
Articulating Dump Truck (30t~40t Class)



Fork Lift (1t~25t Class)



Commercial Vehicle & Dump Truck (2.5t~24t Class)



Production Equipment

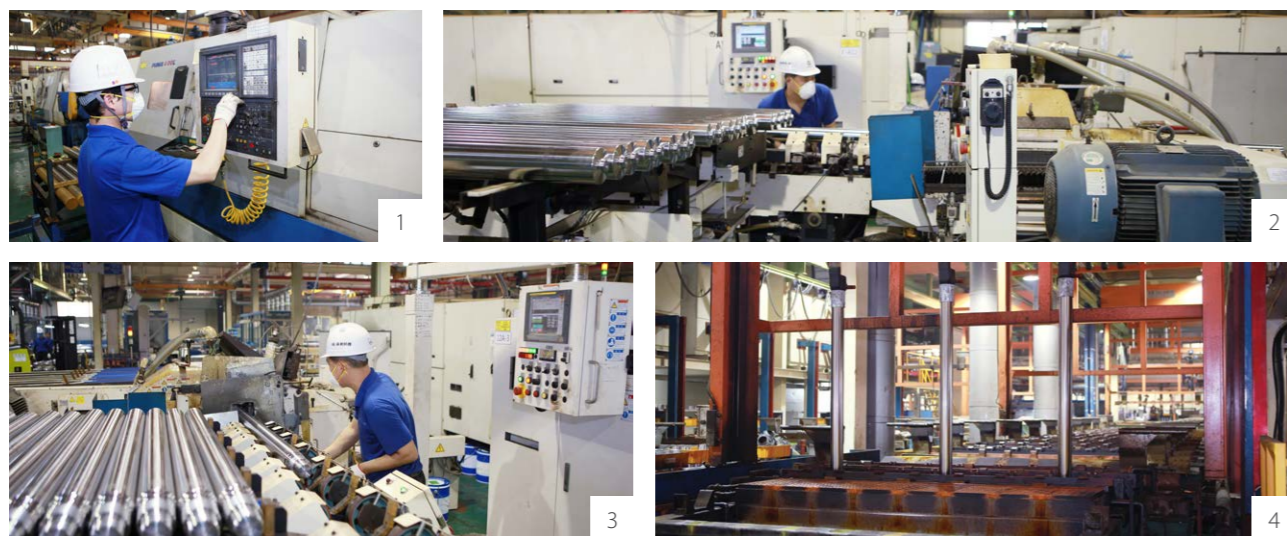
Hydraulic Cylinder Production Facilities



SH PAC

- 1. Friction Welding
- 2. Friction Welding
- 3. Tube Cutting
- 4. Auto Assembly Machine
- 5. Auto Assembly Machine
- 6. Performance Test

Hydraulic Cylinder Rod Production Facilities

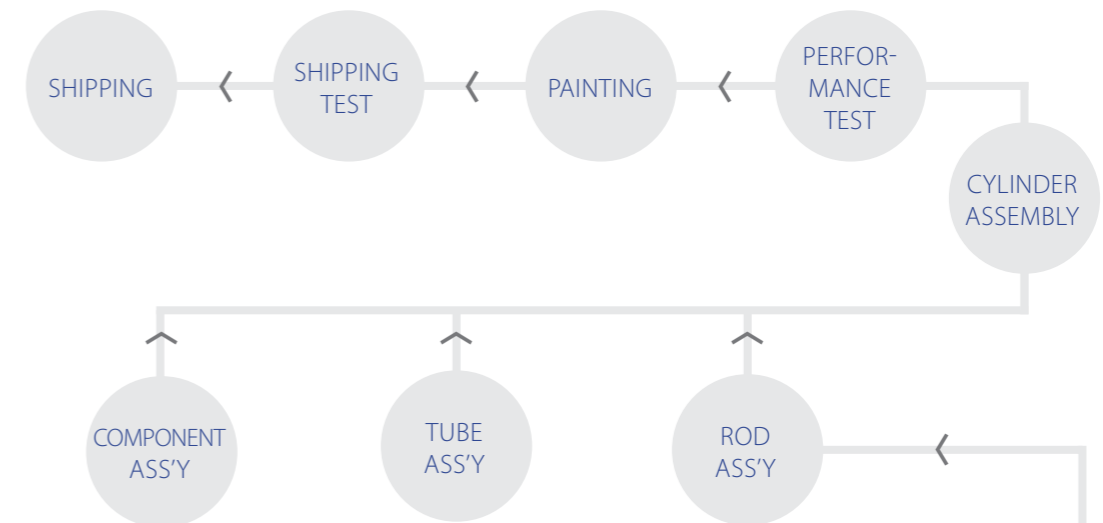


Shinhung Precision Machinery

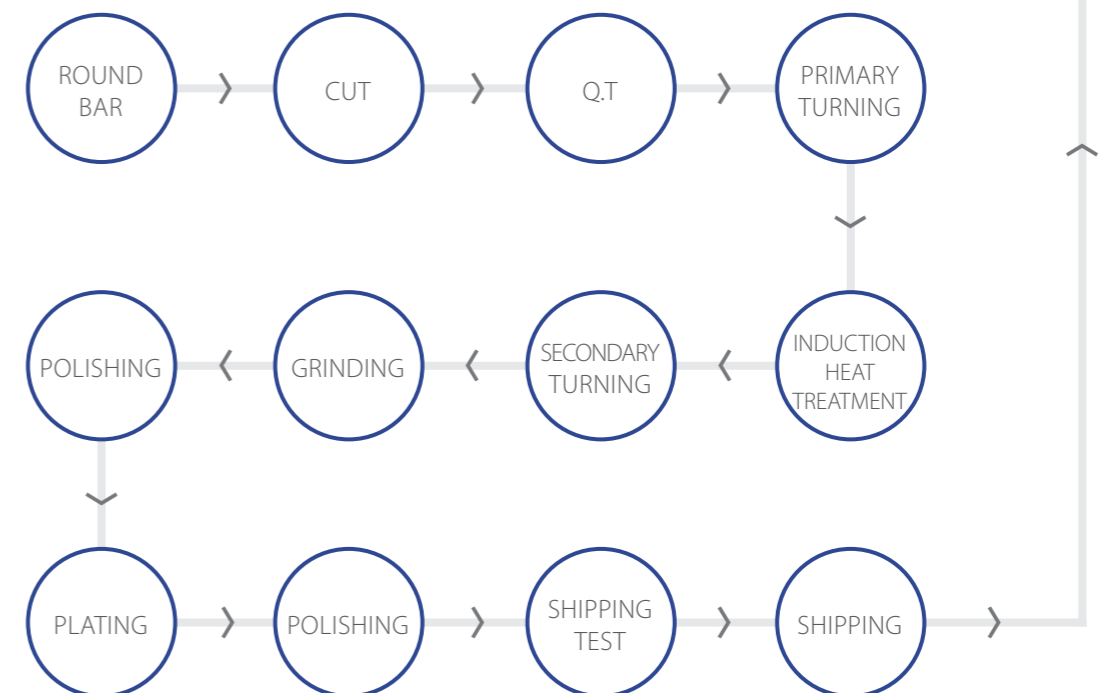
- 1. Machining Line
- 2. Grinding Line
- 3. Buffing Line
- 4. Hard Cr Plating Line

Manufacturing Process

• Cylinder manufacturing process (SH PAC)

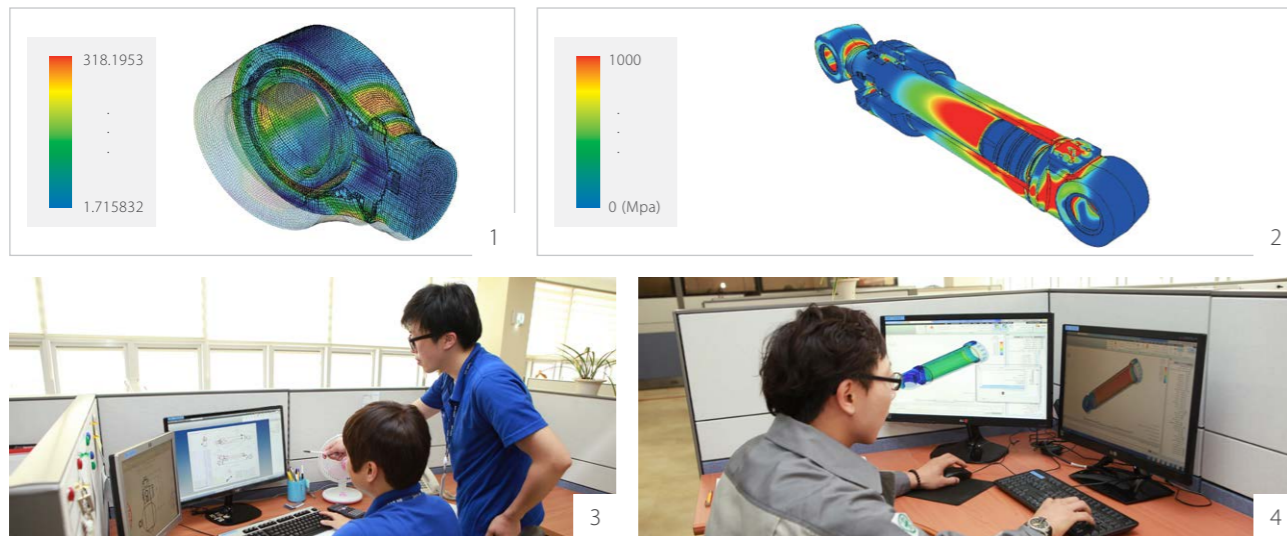


• ROD manufacturing process (Shinhung Precision Machinery)



Research & Development

FEA Stress Analysis



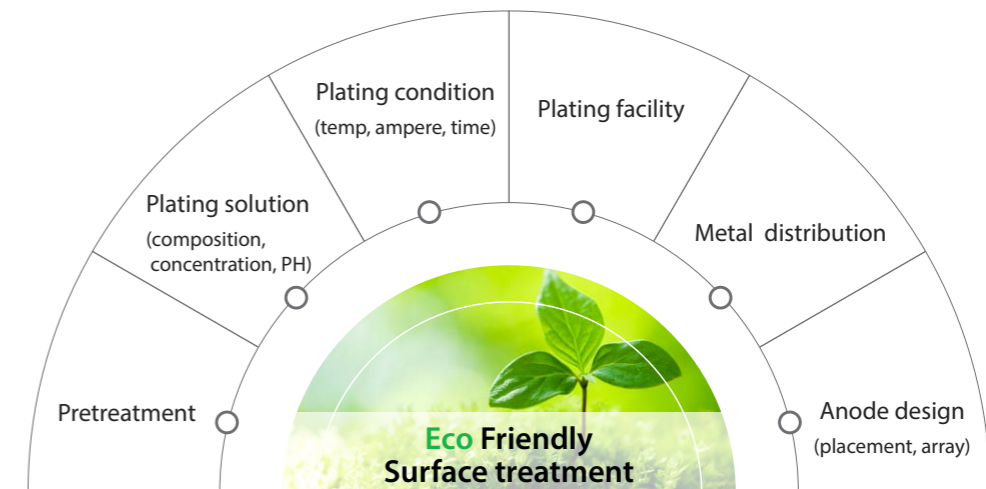
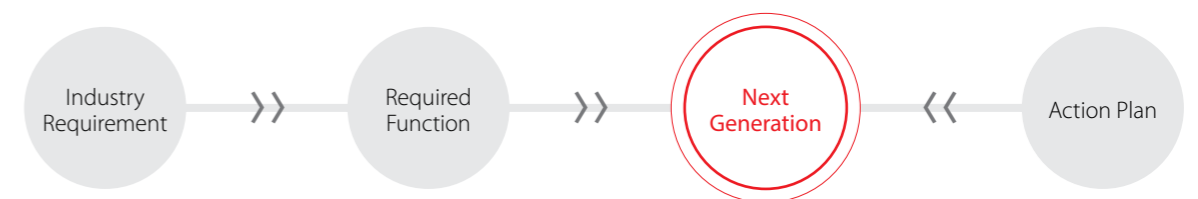
1. FEA on Components
2. FEA on Components Assemblies
3. 2D CAD Drawing
4. 3D Solid Modeling

Inspection Equipment

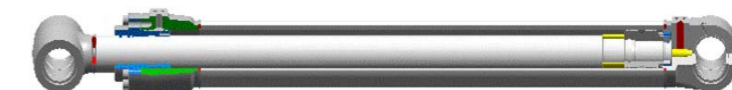


1. Sliding Test
2. Structure Test
3. Impulse Test
4. Performance Testing

Design Concept



Material	Design & Fabrication	Evaluation
<ul style="list-style-type: none"> · Replacement of hexavalent chrome · High strength material 	<ul style="list-style-type: none"> · Coating process · New material machining process · Connect in technics between different materials 	<ul style="list-style-type: none"> · Evaluation of corrosion resistance · Simulation of suitability & compatibility · Performance test



- ROD : replacement of hexavalent chrome, high strength, weight reduction, long rod
- To reduce the weight of rod, lighter weight, high corrosion resistance, high fuel efficiency by using the new materials (EP, CFRP, high strength steel)
- To achieve the higher fuel efficiency, the weight reduction with advanced materials and higher corrosion resistance are being investigated

SH PAC'S GLOBAL NETWORK

The world's Leading Company in Hydraulic Cylinders



Europe	China	Korea	Japan	North America
<p>GERMANY</p> <ul style="list-style-type: none"> · CATERPILLAR <p>BELGIUM</p> <ul style="list-style-type: none"> · OSHKOSH · JLG EU <p>UNITED KINGDOM</p> <ul style="list-style-type: none"> · JCB · TEREX 	<ul style="list-style-type: none"> · VOLVO · HYUNDAI · OSHKOSH · JLG Tianjin · GENIE · HAULOTTE 	<ul style="list-style-type: none"> · VOLVO · HYUNDAI · CLARK 	<ul style="list-style-type: none"> · CATERPILLAR · KOMATSU · HITACHI · SUMITOMO · KOBELCO 	<p>Chambersburg PA Pooler GA</p> <p>OSHKOSH/JLG US JCB</p> <p>St. Joseph MO Guelph CANADA</p> <p>Creedmoor SC SKYJACK</p> <p>ALTEC</p> <p>Seattle WA</p> <p>GENIE</p>

Global

Achieving Global Success through Leading Innovation

SH PAC



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