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HAIMO

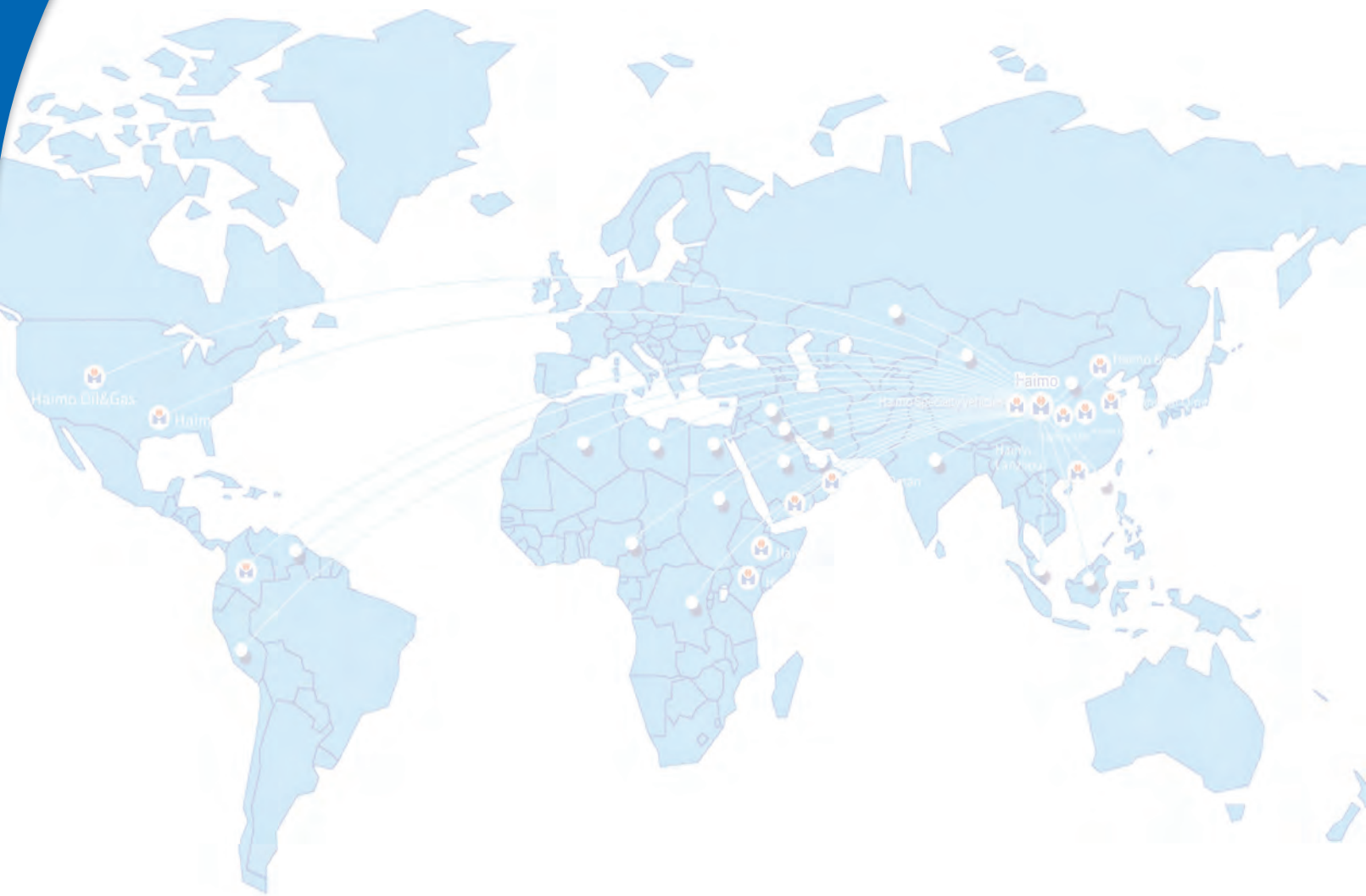
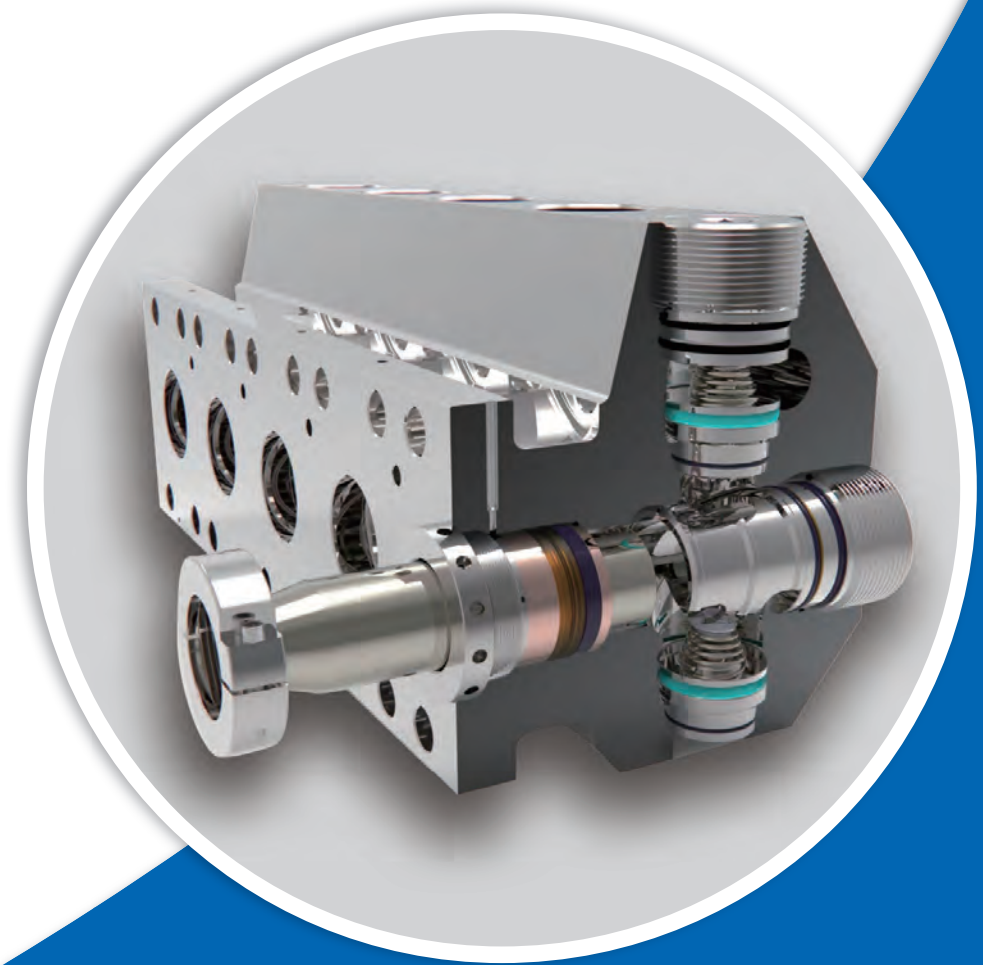


清 河 机 械
QINGHE MACHINERY

DEDICATED IN SUPPLYING OF

ADVANCED FLUID ENDS

FOR WELL SERVICE PUMPS AND FRAC PUMPS



Shanghai Qinghe Machinery Co., Ltd.
A Haimo Group Company



V2024.08

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Shanghai Qinghe Machinery Co., Ltd.

Group Profile

Haimo Technologies Group Co., Ltd. is a multinational company dedicated to providing innovative technologies, products, and services for oilfield production enhancement, production optimization, and oil and gas reservoir management. We offer comprehensive solutions for the digital transformation of oilfields and related industries. Founded in 1994 and restructured into a joint-stock company in 2000, Haimo was listed on the Growth Enterprise Market of the Shenzhen Stock Exchange in May 2010 (stock abbreviation: Haimo Technologies, stock code: 300084).

As a member of Shanghai New Energy Holding Group, Haimo has 17 wholly-owned subsidiaries and 6 holding subsidiaries domestically and internationally, with nearly a thousand employees conducting business worldwide. The Haimo Research Institute is responsible for the company's technology development, high-end talent training, technology introduction and absorption, and the conversion of scientific and technological achievements, providing technical support for various business segments. Our products and services are sold to many countries in regions such as the Middle East, North Africa, Central Asia, South Asia, Southeast Asia, North America, and South America.

Focusing on niche segments within the oil and gas industry, Haimo is an international leader in multiphase metering and production optimization solutions for oilfields, the only domestic manufacturer of subsea multiphase flow meters, a manufacturer with core competitiveness in hydraulic ends of fracturing pumps, a leading domestic manufacturer of downhole measurement/testing tools and production enhancement instruments, and a technological leader in the digitalization of oilfields in China.

Since its establishment, Haimo has adhered to the path of "independent research and development, Made in China," holding a series of independent intellectual property rights in multiphase flow metering, intelligent completion, logging, and hydraulic ends of fracturing pumps. Over 130 of our R&D personnel hold bachelor's degrees or higher, with rich experience in electromechanical design, nuclear physics, mathematics, mechanics, petroleum engineering, and mechanical engineering.

Haimo has a high-quality, professional, and capable marketing and after-sales team, with 8 overseas branches or offices and 17 domestic offices, providing timely and attentive service to our customers.

Leveraging the resource advantages of Shanghai New Energy Holding Group, Haimo will continue to deepen its focus on the oilfield sector, actively explore the integration of new energy with oilfield equipment applications and strengthen the development and utilization of new energy. We aim to advance the integration of oilfield and new energy businesses, promoting diversification and continuously enhancing our comprehensive energy supply capability and green, low-carbon development level.



30

+30 years of experience in the oil and gas industry



17

Wholly-owned subsidiary companies



6

Holding subsidiaries



25

Offices in China & overseas



Development History

1994-2023



Innovation Driven
Intelligent Manufacturing

Company Profile

Production System

Product Portfolios

Service & Support

COMPANY PROFILE

Established in 2000, Shanghai Qinghe Machinery Co., Ltd. and the predecessor has been devoted to the oil and gas industry for more than 40 years. And now has been recognized as a leading engineering and manufacturing company of fluid ends for both well service pumps and fracturing pumps since 2004. In this field, besides more than 15000+ pcs of fluid ends to be shipped to the clients worldwide, Qinghe Machinery also has been accepted and awarded as the best supplier from the top International Oil Service company for the superior quality and excellent service in Original Equipment Manufacturing as per the customer specifications.

Qinghe Machinery is also actually playing the roles as

precise manufacturing center in Haimo Group for subsea products and forged modules.

Our innovative solutions for fluid ends combined with our patented cutting edge technology, experience, expertise such as solid modeling and Finite Element Analysis ensure great fatigue life and less downtime for the change-out of the parts. For now Qinghe Machinery is capable to provide top of the range for most major models and types of the fluid ends in series including Fluid End modules, triplex and quintuplex Fluid End blocks and performing direct-fit experience.

2023

Innovative SlimFrac®
Fluid End Launched

2014

As a Haimo Company

2004

Int'l Cooperation & Fluid End
OEM for IOS Companies

2000

Established in Shanghai

1983

Originated in Zhejiang



PRODUCTION SYSTEM

Qinghe Machinery in one place production system ensures the design, engineering, heat treatment, machining, assembly, inspection and testing, painting and shipment as consolidated one resulting more efficiency and quality work for the whole team and entire facility.



Manufacturing Area
40000 Square Meter



Fluid Ends Shipped
15000+ pcs To Worldwide



CNC Machine Tools
80+ In Operation



I&T Equipments
20+ In Use



Skilled & Qualified Manpower
80+ As One Team



Fluid End Capability
800+ pcs Annually



Inspection & Test Equipment

Metallographic microscope, Metal analysis spectrometer, Brinell hardness tester, Charpy impact testing machine, Universal testing machine, NDT equipment (UT, MT, PT), Hydraulic (water & oil) pressure tester, leak test facility, PR2 test facility, Coordinate Measuring Machine (CMM) and etc.

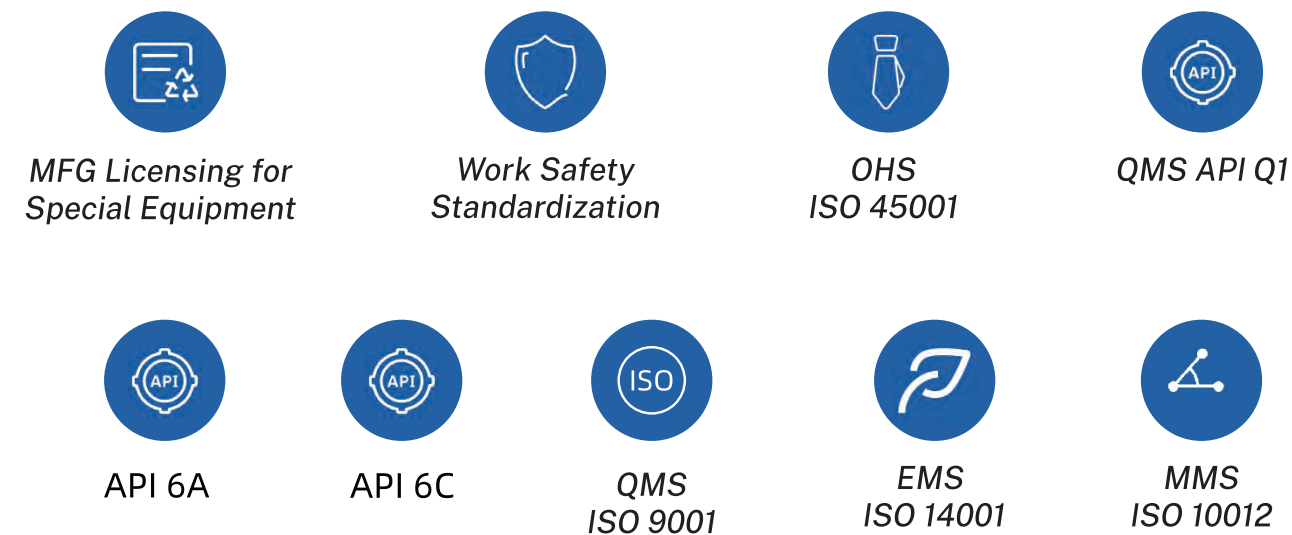
R&D, Patents, Qualifications

Qinghe Machinery insists research and development focusing on fluid end and relative products. All owned IPs enhanced Qinghe engineering team and production system strongly improves the reliability and working life by joint efforts and endeavors starting from the metallurgy and best material, engineering experience, processes to the shipment protection.

PATENTS



QUALIFICATIONS



QINGHE MACHINERY PRODUCT PORTFOLIOS

Qinghe Machinery provided products enrich including direct-fit fluid end, FE assembly, wide variety of parts interchangeable such as valves and seats, plungers, most metal parts and etc.

- **Fluid Ends**
- **Pump Consumable Parts**
- **Frac Goat Head**
- **Ball Injector**



FEATURES AND BENEFITS OF QINGHE FLUID END AND CONSUMABLES

- Metallurgical expertise for the proprietary material process resulting in the highest quality forges from carbon steel to stainless steel (e.g. 4330V, 4330M, 17-4PH, 15-5PH & as per customer specification)
- Conventional valve-over-valve design and configuration reduces the maintenance time conveniently during on site consumable changes
- Specified optimized geometry reduces stress concentration at the intersecting cavity
- Both fluid end and consumable direct fit from both form and function with typical original pump in the industry or as original equipment manufacturing specification
- All products are built in accordance with highest quality management system (API Spec Q1 & ISO9001) and standards ensuring consistency in quality and performance

Model and type compatibly available for:

- | | | |
|---------|-------------------|-------|
| • SPM | • Gardener Denver | • FMC |
| • OPI | • OFM | • SJS |
| • Jereh | • | |

1 Fluid End QH-400TWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description Compatible in form and function with: HT400

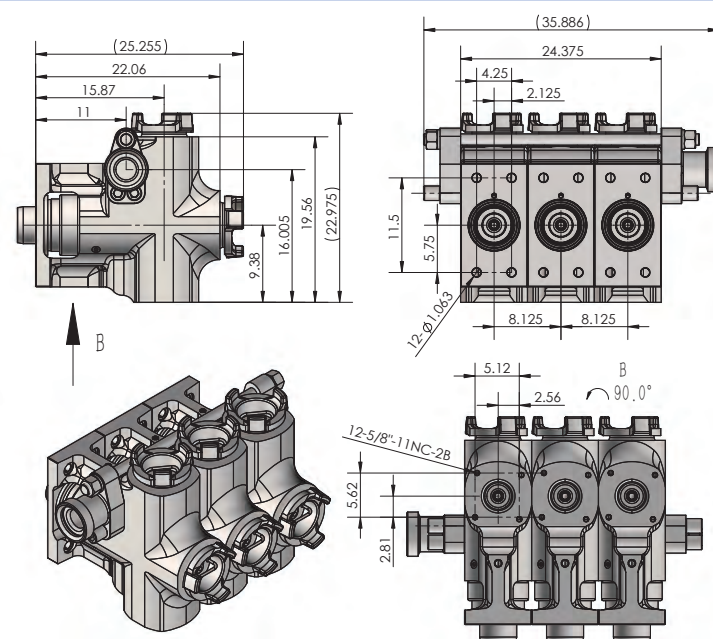
Stroke 8 Inches

Materials Materials: Carbon Steel

Plunger size available at 3.375"/4"/4.5" or TBD by client.

PLUNGER SIZE	PSI
3.375	20000
4	14000
4.5	11200
5	9000

Specification



2 Fluid End QH-600TWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description Compatible in form and function with: SPM TWS600S

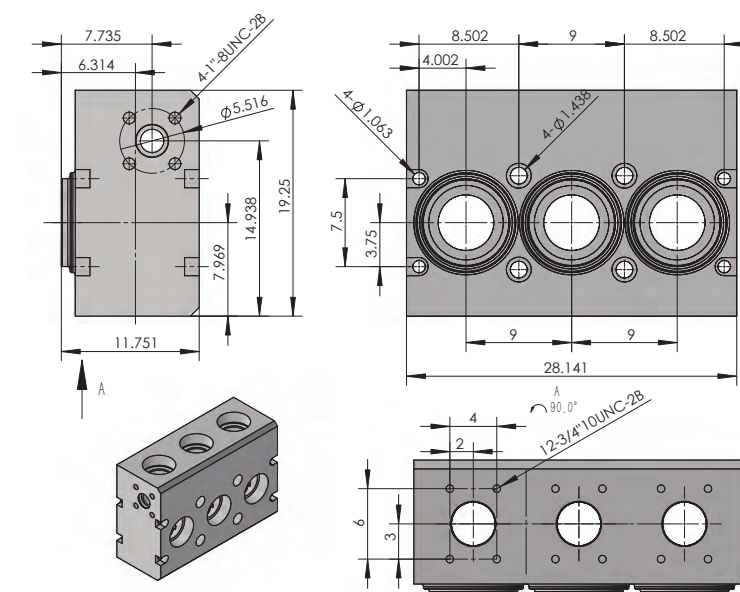
Stroke 6 Inches

Materials Materials: Carbon Steel

Plunger size available at 3"/3.5"/4"/4.5" or TBD by client.

PLUNGER SIZE	PSI
3	14141
3.5	10399
4	7962
4.5	6295

Specification



3 Fluid End QH-2000TWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description Direct-fit with: SPM2250, GD2250, OFM2000, OPI1800 & equivalent

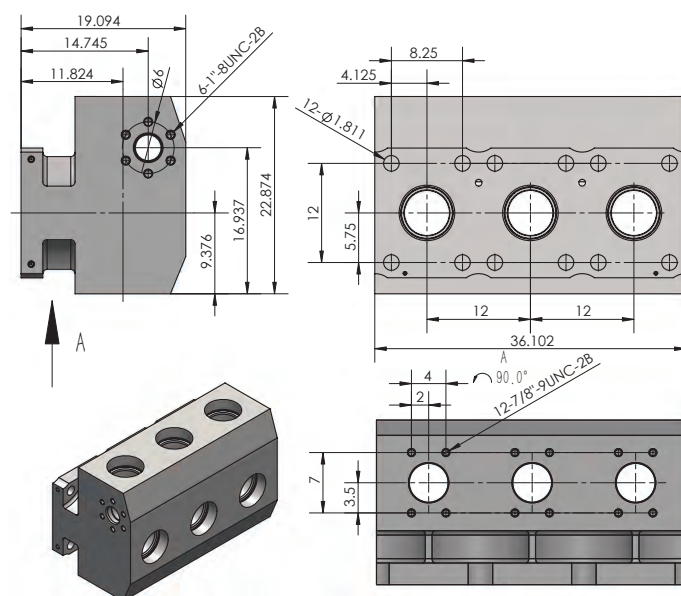
Stroke 8 Inches

Materials Stainless and Carbon Steel for option

Plunger size available at 3.75"/4"/4.5"/5" or TBD by client

PLUNGER SIZE	PSI
3.75	20372
4	17905
4.5	14147
5	11459

Specification



4 Fluid End QH-2500QWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description Direct-fit with SPM/GD/SJPetro/Jereh and/or equivalent frac pump.

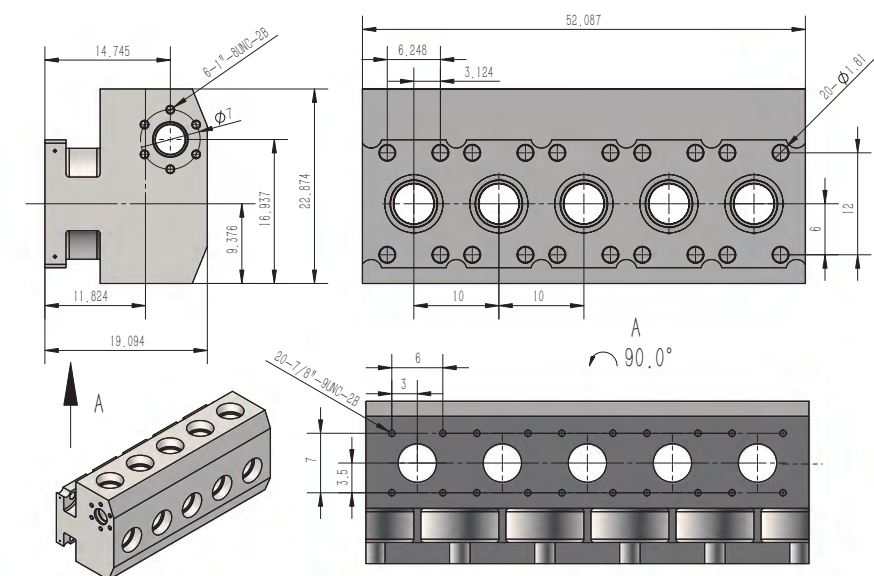
Stroke 8 Inches

Materials Stainless and Carbon Steel for option

Plunger size available at 3.75" / 4" / 4.5" / 5" or TBD by client.

PLUNGER SIZE	PSI
3.75	17420
4	15315
4.5	12100
5	9800

Specification



5 ▶ Fluid End QH-2700QWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description Compatible in form and function with: WQ2700、FWQ3000、QPI-2800A frac pump

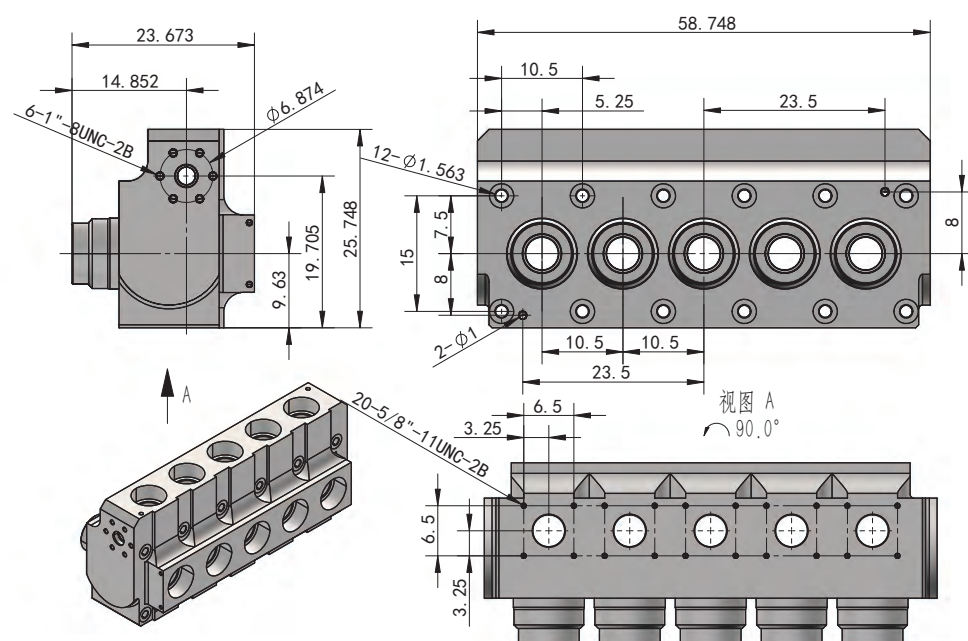
Stroke 10 Inches

Materials Stainless and Carbon Steel for option

Plunger size available at 4"/4.5" or TBD by client.

PLUNGER SIZE	PSI
4	20000
4.5	18129

Specification



6 ▶ Fluid End QH-2800QWS

COST-EFFECTIVE

RELIABLE & DURABLE

FIELD PROVEN



Description	Compatible in form and function with SJ2800, JR2800, SANY2800
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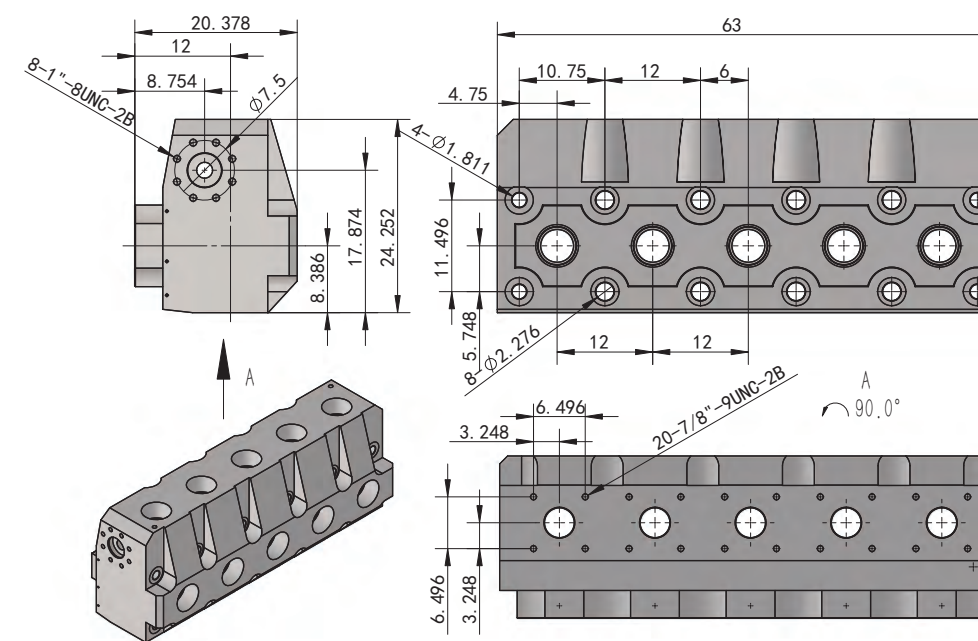
Stroke 8 Inches

Materials Stainless and Carbon Steel for option

Plunger size available at 3.75" / 4" / 4.5" or TBD by client.

PLUNGER SIZE	PSI
3.75	20000
4	17900
4.5	14143

Specification





QINGHE FLUID END AS PER DEDICATED CLIENT SPECIFICATION (OEM AND/OR ODM)

- As per client design and specification
- Material available for both carbon steel, stainless steel or higher grade



HQ-2000QWS

HQ-3300QWS



HQ-5000QWS

HQ-6000QWS



QINGHE **SLIMFRAC®** FLUID END NEW TECHNOLOGY LAUNCHED



- *Lightweighted*
- *Modularized*
- *Fitting in General*
- *Long Design Life*

Embedded innovative patented stress distraction intelligence & know-hows in, by applying with solid modeling and Finite Element Analysis as well as specified geometry engineering, a brand new serial SlimFrac® fluid ends has been launched to the market expecting par excellence performance from the filed application. The new technology including QH-B structure, geomtry optimization and stress elimination technology ensures less in weight and stronger in fatigue effectiveness and provides customer with long pump run life.

CONSUMABLE PARTS

Valve and Seats

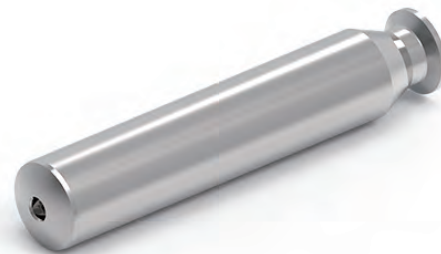
Fracturing Pump & Mud Pump
Insert - Conventional (Yellow)
Unconventional (Green)



High Performance Plunger Packing Assy.

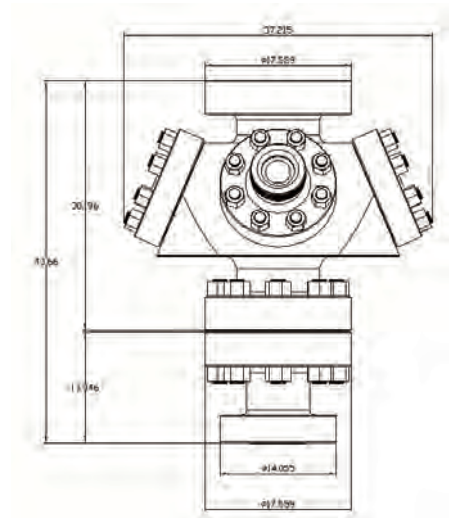
Plunger

Nickle-base alloy or
Tungsten Alloy.



FRAC GOAT HEAD (FRACTURING HEAD)

Whether it is for ball drop, plug and perf, coil fracking, or conventional fracking, Or OEM configuration, Qinghe is capable to provide API 6A frac head, goat head, fracturing wellhead for fracturing tree as per the required specification to accommodate customer's needs.



Typical Specification and parameters

- Connecting size: 4-1/16"---7-1/16"
- Pressure: 20000psi (140Mpa)
- Temperature: P-U
- Material Grade: BB, EE or as customer requirementPerformance Rating: PR1
- or above
- Production specification level: PSL3
- Main diameter: 103.2mm
- Side diameter: 75mm, 3-1/16" ×20000psi(BX154)

BALL INJECTOR

Description

designed for temporary plugging and diverting fracturing. Qinghe patented new design high pressure ball injector has enhanced performance with featured high efficient feed system and reliable feed and inject rate. Local and remote control model eases more convenient operation. Preset of the batches and ball quantities are functioned.



SPECIFICATION

Working Pressure	105Mpa
Maximum Torque	≤100N*m
Ball Diameter	as per customer requirement
Number of Balls Loaded	as per customer requirement
Control Model	local manual and/or remote control
Connecting Size	3"Fig 1502 M*F/as per customer requirement

SERVICES & SUPPORT

As a manufacturer of the pump fluid end, service pre-sales and after-sales is always part of the scope of our work and business. Our serving and servicing extends including and beyond the engineering of the great pump quality, delivery time, long-run pumping life and all what we can to the guarantee of the customer satisfaction.

Quality driven professionally technical supports is always available for 7/24 once you approach us by phonic or onsite checking with our technicians or engineers. Mostly, customized support is easily for all the clients not limited to OEM and ODM.

FE leasing service: Sale the pump hours by the contracting package rental services of the fluid end and consumables.