

江阴万恒机械制造有限公司
JIANGYIN ETERNAL HEAVY INDUSTRY CO.,LTD

PRESENTATION

公司介绍

江阴万恒机械制造有限公司成立于2008年4月， 国家高新技术企业， 创新型中小企业。我们的主要产品包括特殊钢锻件和重型液压油缸。

我们的特殊钢锻件按照材料分类，包括合金钢锻件，模具钢锻件，不锈钢锻件等。按照形状分，包括锻造轴，锻造辊子，锻造环，锻造套筒，锻造板，锻造圆钢等。我们可以提供的产品尺寸，外径从100-1000mm，长度可以达到12米，产品应用于石油机械，工程矿山机械，冶金机械，电力设备等。

我们公司也专业生产各类重型液压油缸，主要配套于液压机,挤压机,工程机械等。我们的油缸单缸压力可以达到3600吨，行程可以达到12米。

我们公司拥有2000吨快锻生产线，热处理调质炉，6米立式中频感应淬火机床,500吨矫直机，配套各类数控车床,长度从2米到11米,龙门式加工中心，各类质量检测设备，包括拉力试验机,无损检测设备等。

目前，我们的产品已经出口到欧盟，美国，南非，俄罗斯，墨西哥，巴西，秘鲁，智利，韩国，越南，印尼，中东等80多个国家，我们的质量得到了客户的充分肯定。

未来，我们将继续加大技术研发力度，更好的为客户服务；同时我们期待和更多的客户加大合作，为客户创造更多的价值。

Company Brief

Jiangyin Eternal Heavy Industry Co. Ltd was established in 2008, it is National high-tech enterprise, innovative small and medium-sized enterprise. Till now our main products including all kinds of special steel forgings and heavy duty hydraulic cylinder .

Our special steel forgings include all kinds of alloy steel forging , mould die steel forging , stainless steel forgings etc . They are made for forging roll , forging shaft , forging ring , forging sleeve , forging plate , forging round bar etc . Its size is from OD150mm to OD1000mm , length up to 12000mm . They have been applied on petroleum machinery, mining machinery, metallurgical equipment, power equipment, etc.

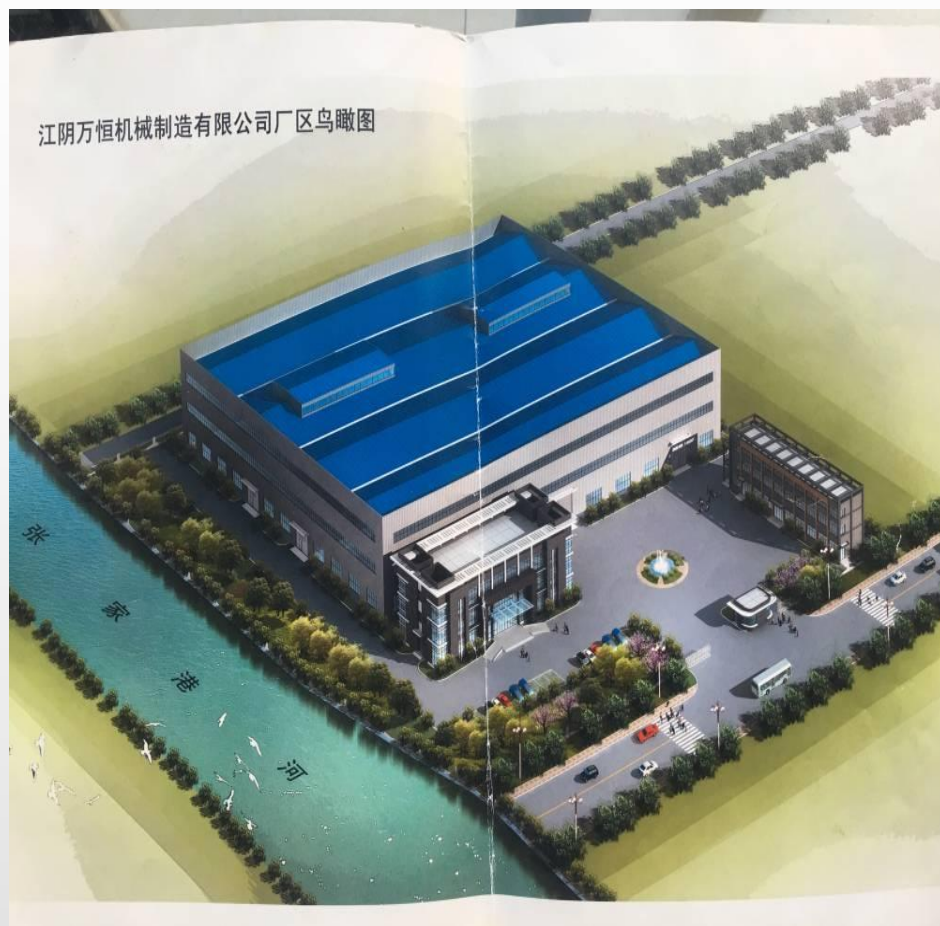
We also make all kinds of heavy duty hydraulic cylinders they are installed on hydraulic press , extrusion press , and all kinds construction machinery etc . Our hydraulic cylinder pressure could reach 3600 tons , max length could reach 12 meters .

Our company owns 2000 tons fast speed forging production line , heat treatment quenching and tempering furnace , middle-frequency induction surface hardening machine with 6 meter standing height , 500 tons straightening machine , all kinds of CNC lathe machine , CNC frame type machining center , all kinds of quality inspection equipment , such as mechanical property test machine , non-destructive test machine etc .

At present, our products have been exported to Europe, U.S.A , South Africa, Russian, Mexico, Brazil, Peru, Chile, Korea, Vietnam, Indonesia , Middel East etc more than 80 countries , our quality is accepted by customers.

In future we would devote ourselves to deep research and new market, and we expect to make a better co-operation with our customer .

工厂图 • Factory photo



产能 • Capacity

产品 • Product		吨数 • Ton	
液压缸 hydraulic cylinder		3000	

产能 • Capacity

产品 • Product		吨数 • Ton	
锻件 forgings		10000	

加工设备清单 • Facilities



13m lathe



10m lathe



6m CNC lathe



3m CNC lathe



Vertical CNC machining center



Gantry machining center



Grinding machine



Quenching and tempering heating furnace



Quenching and tempering pool



2000 tons fast forging press production line



Medium frequency quenching machine



500 tons straightening press

检测设备 • Inspection Facility



Coating thickness test



Hydraulic test platform



Magnetic Test



Surface hardness



Surface roughness test



Tensile strength test machine

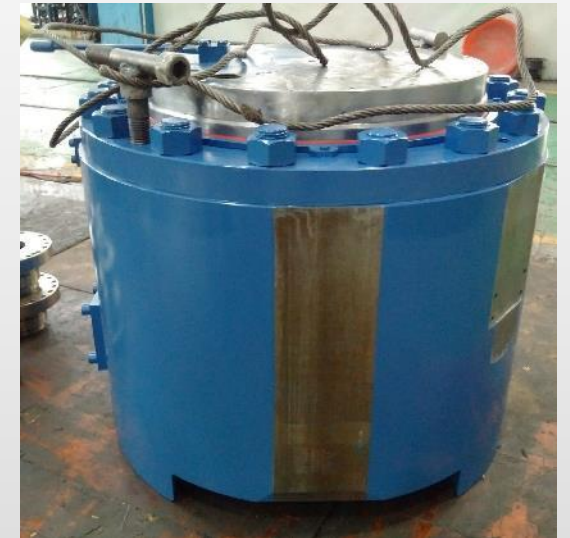


Ultrasonic test

油缸图 • Hydraulic Cylinder Photo

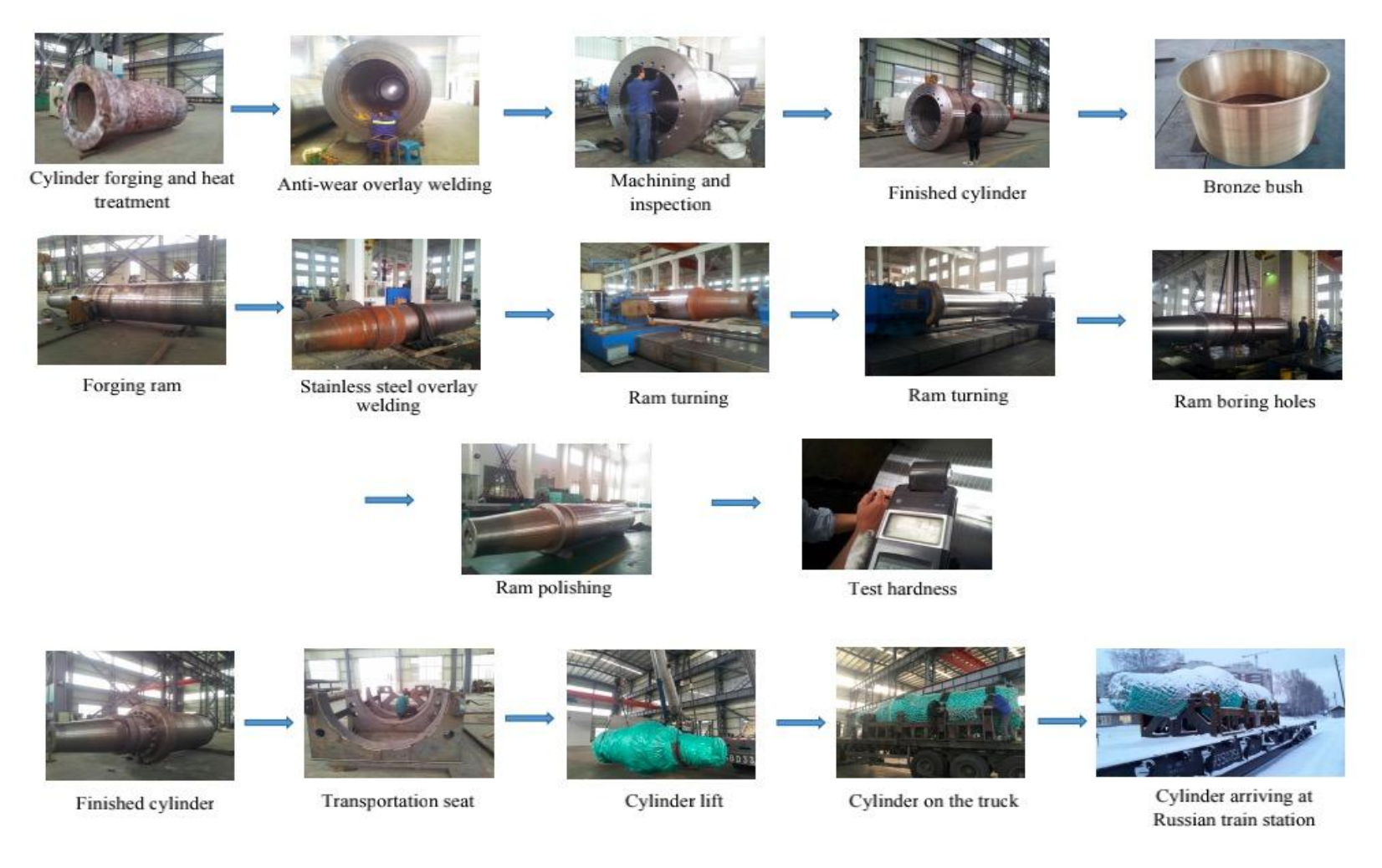






大型液压缸加工流程图

Big Type Hydraulic Cylinder Production Procedure



小型液压缸加工流程图

Small Type Hydraulic Cylinder Production Procedure



Cylinder Honing



Weld Seam UT/MT



Assembling



Material



Machining



Rod



Pressure Test

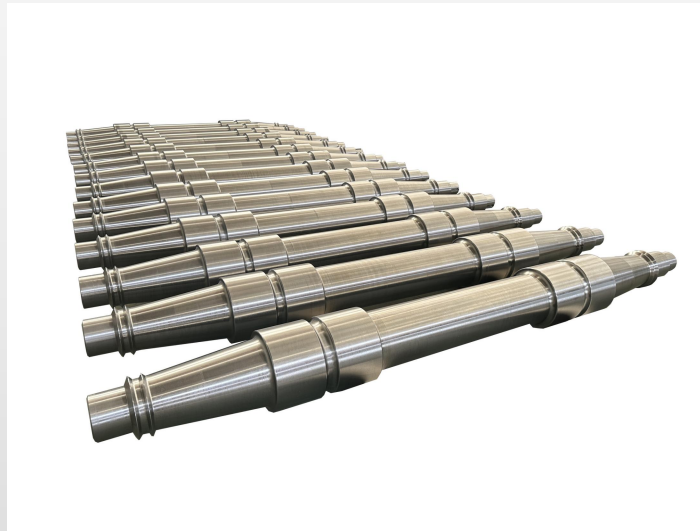


Pressure Test

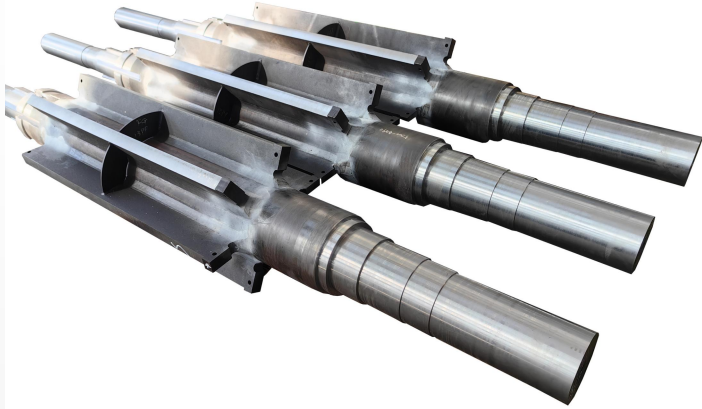


Painting and Packing

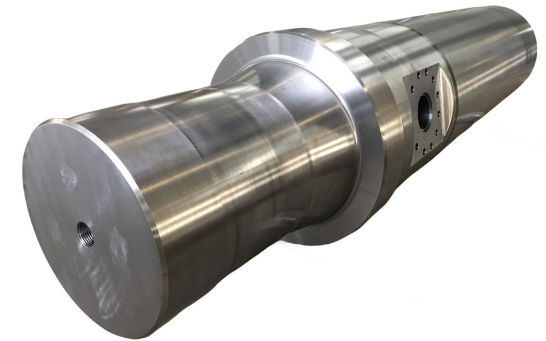
锻钢传动轴 • Forging Shaft Photo



锻钢传动轴 • Forging Shaft Photo



ETERNAL



锻造轴钢号 • Forged shaft steel grade

GB	ГОСТ	EN	DIN	W.N.	JIS	AISI/SAE
15CrMn		16MnCr5	16MnCr5	1.7131		5115
20CrMn		20MnCr5	20MnCr5	1.7147		5120
12CrMo	12XM		13CrMo44	1.7335		4119
15CrMo	15XM		15CrMo5	1.7262	SCM415	
20CrMo	20XM		20CrMo5	1.7264	SCM420	4118
25CrMo	30XM		25CrMo4	1.7218		
30CrMo					SCM430	4130
35CrMo	35XM		34CrMo4	1.722	SCM435	4135
42CrMo		EN19	42CrMo4	1.7225	SCM440	4140
			50CrMo4	1.7228		
40Cr	40X		41Cr4			
	38XC					
25Cr2MoV	25X2M1Φ		24CrMoV55	1.7733		

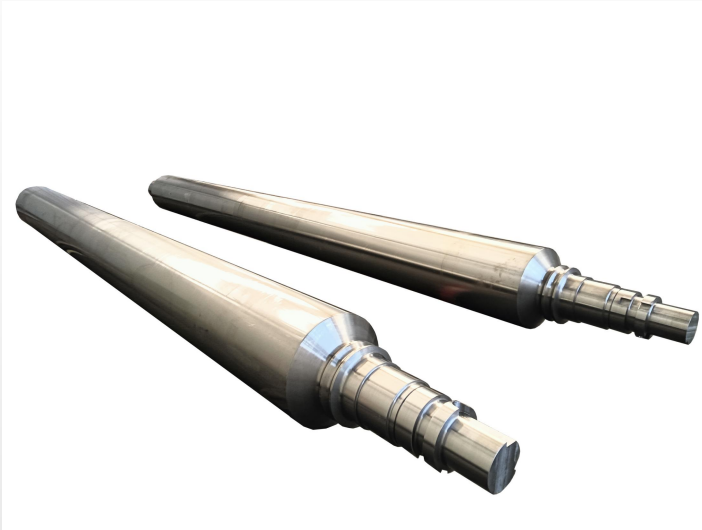
锻造轴钢号 • Forged shaft steel grade

GB	ГОСТ	EN	DIN	W.N.	JIS	AISI/SAE
50CrVA			50CrV4	1.8159	SUP10	
			31CrMoV9	1.8519		
GCr15		100Cr6	100Cr6	1.3505		52100
20CrNiMo	20XHM	20NiCrMo2-2	21NiCrMo2	1.6523	SNCM220	8620
	20XH3A					
	20X2H4A					
			17CrNiMo6	1.6587		
			18CrNiMo7-6	1.6587		
			34CrNiMo6	1.6582		VCN150
		34NiCrMo16	35NiCrMo16	1.2766		
			30CrNiMo8	1.658		VCN200
			39NiCrMo3	1.651		
			34CrAlNi7	1.855		

锻造轴钢号 • Forged shaft steel grade

GB	ГОСТ	EN	DIN	W.N.	JIS	AISI/SAE
38CrMoAl	38X2MOA		41CrAlMo7	1.8509		
40CrNiMo		EN24	40NiCrMo8-4	1.6562	SNCM439	4340
40CrNi		40XH	40NiCr6	1.5711		
20CrMnMo	18XTM				SCM421	
40CrMnMo	40XTM				SCM440	
	30XTCA					
	38XTH					
	40XH2MA					
	40X2H2MA					
	38XH3MA					
	38XH3MΦA					

锻钢冷轧辊 • Forging cold roll photo



锻造冷轧工作辊钢号

Forged steel work roll for cold rolling steel grade

牌号 steel grade	质量分数 Chemical composition /%									
	C	Si	Mn	Cr	Mo	V	Ni	Cu	S	P
9Cr2	0.80-0.95	≤0.40	≤0.40	1.30-1.70	—	—	—	—	≤0.030	
8Cr2MoV	0.80-0.90	0.15-0.40	0.30-0.50	1.80-2.40	0.20-0.40	0.05-0.15	≤0.25		≤0.025	
9Cr2Mo	0.85-0.95	0.25-0.45	0.20-0.35	1.70-2.10	0.20-0.40	—				
9Cr2MaV					0.20-0.30	0.10-0.20				
9Cr3Mo				2.50-3.50	0.20-0.40	—				
8Cr3MoV	0.78-1.10	0.40-1.10	0.20-0.50	2.80-3.20	0.20-0.60	0.05-0.15	≤0.80	≤0.25	≤0.025	
8Cr5MoV	0.78-0.90	0.40-1.10	0.20-0.50	4.80-5.50	0.20-0.60	0.10-0.20			≤0.020	

锻造冷轧工作辊钢号

Forged steel back up roll for cold rolling steel grade

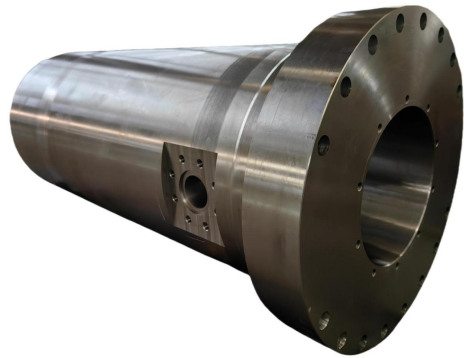
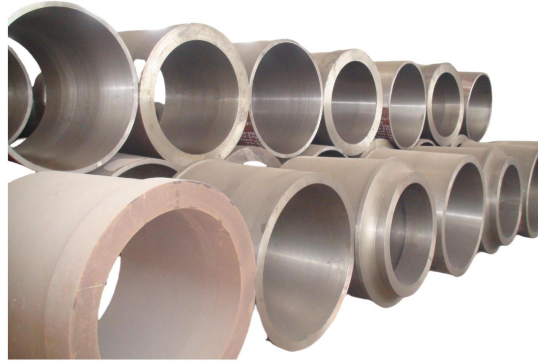
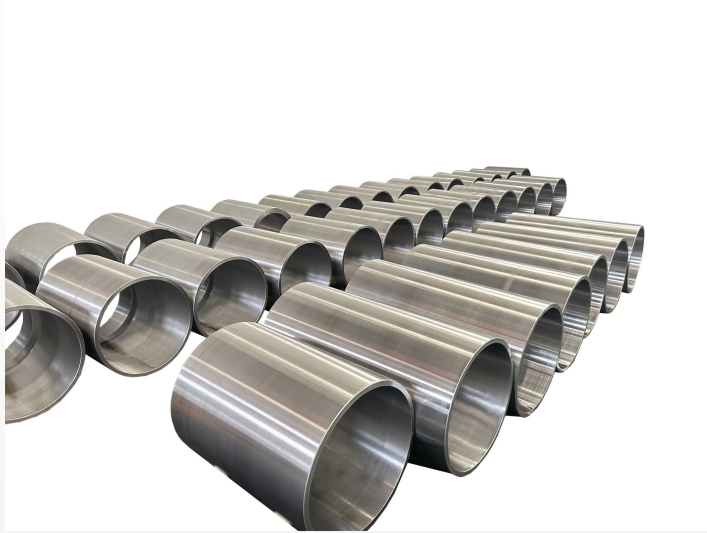
Steel grade	C	Si	Mn	P	S	Cr	Ni	Mo	V	Cu
45Cr4NiMoV	0.40-0.50	0.40-0.80	0.60-0.80	≤0.025	≤0.025	3.50-4.50	0.40-0.80	0.40-0.80	0.05-0.15	—
50Cr5MoV*	0.40-0.60	0.40-0.80	0.50-0.80	≤0.025	≤0.025	4.50-5.50	≤0.60	0.40-0.80	≤0.30	—
40Cr3MoV	0.35-0.45	0.40-0.80	0.50-0.80	≤0.025	≤0.025	3.00-4.00	≤0.30	0.50-0.80	≤0.30	
9Cr2Mo	0.85-0.95	0.25-0.45	9.20-0.40	≤0.025	≤0.025	1.70-2.10	—	0.20-0.40	—	≤0.25
70Cr3NiMo	0.65-0.75	0.40-0.70	0.50-0.90	≤0.025	≤0.025	2.00-2.70	0.40-0.60	0.40-0.60	—	≤0.25
70Cr3Mo	0.58-0.75	0.40-0.70	0.50-0.80	≤0.025	≤0.025	2.00-3.50	≤0.60	0.25-0.60	—	≤0.25
55Cr	0.50-0.80	0.20-0.40	0.35-0.65	≤0.025	≤0.025	1.00-1.30	—		—	≤0.25
35CrMo	0.32-0.40	0.20-0.40	0.40-0.70	≤0.030	≤0.030	0.80-1.10	—	0.15-0.25		≤0.25

注1:45Cr4NiMoV、50Cr5MoV、40Cr3MoV、9CY2Mo、70Cr3NiMo、70Cr3Mo用于整锻支承辊与镶套支承辊。
Note 1: 45Cr4NiMoV, 50Cr5MoV, 40Cr3MoV, 9CY2Mo, 70Cr3NiMo, and 70Cr3Mo are used for monolithically forged backup rollers and nested backup rollers.

注2:55Cr、35CrMo用于镶套支承辊芯轴。
Note 2: 55Cr and 35CrMo are used for inserting the support roller core shaft.

*50Cr5MoV的Ni可进行调整。 *50Cr5MoV Ni can be adjusted.
当采用VOD时，Si≤0.1%。 When using VOD, Si≤0.1%.

空心套筒类锻件 • Forging hollow sleeve



空心套筒类锻件模具钢牌号

Forging hollow sleeve die steel steel grade

GB	JIS	ASTM	UNS	DIN	W-Nr.	ГОСТ	SS
9SiCr	—	—	—	90CrSi5	1.2108	9XC	2092
8MnSi	—	—	—	~ C75W	1.1750	—	—
Cr06	SKS8	—	—	140Cr3	1.2008	X05	—
Cr2	SUJ2	L3	T61203	102Cr6	1.2067	X	—
9Cr2	—	—	—	90Cr3	1.2056	9X1	—
W	~ SKS21	F1	T60601	120W4	1.2414	B1	2705
4CrW2Si	~ SKS41	—	—	—	—	4XB2C	—
5CrW2Si	—	S1	T41901	~ 45WCrV7	1.2542	5XB2C	~ 2710
6CrW2Si	—	—	—	~ 60WCrV7	1.2550	6XB2C	—
Cr12	SKD1	D3	TR30403	X210Cr12	1.2080	X12	—
Cr12MoV	SKD11	—	—	X165CrMoV12	1.2601	X12M	2310

空心套筒类锻件模具钢牌号

Forging hollow sleeve die steel steel grade

GB	JIS	ASTM	UNS	DIN	W-Nr.	ГОСТ	SS
Cr12Mo1V1	—	D2	T30402	X155CrVMo12-1	1.2379	—	—
Cr5Mo1V	SKD12	A2	T30102	X100CrMoV5-1	1.2363	—	2260
9Mn2V	—	O2	T31502	90MnCrV8	1.2842	—	—
CrWMn	SKS31	—	—	105WCr6	1.2419	XBΓ	—
9CrWMn	SKS31	O1	T31501	100MnCrW4	1.2510	9XBΓ	2140
5CrMnMo	—	—	—	~ 40CrMnMo7	1.2311	5XΓM	—
5CrNiMo	SKT4	L6	T61206	55NiCrMoV6	1.2713	5XHM	~ 2550
3Cr2W8V	SKD5	H21	T20821	X30WCrV9-3	1.2581	3X2B8φ	2730
8Cr3	—	—	—	—	—	8X3	—
4Cr3Mo3SiV	—	H10	T20810	~ X32CrMoV3-3	1.2365	3X3M3φ	—
4Cr5MoSiV	SKD6	H11	T20811	X38CrMoV5-1	1.2343	4X5MφC	—
4Cr5MoSiV1	SKD61	H13	T20813	X40CrMoV5-1	1.2344	4X5Mφ1C	—

空心套筒类锻件不锈钢牌号

Forging hollow sleeve stainless steel steel grade

	GB/T	UNS	AISI/ASTM	ID	Trademark	JIS	W.Nr
奥氏体不锈钢 Austenite Stainless Steel	06Cr25Ni20	S31008	310S			SUH310S	1.4845
	06Cr19Ni13Mo3	S31700	317	F317		SUS317	
	022Cr19Ni13Mo3	S31703	317L	F317L		SUS317L	1.4438
	06Cr18Ni11Ti	S32100	321	F321		SUS321	
	06Cr18Ni11Nb	S34700	347	F347		SUS347	1.455
	07Cr18Ni11Nb	S34709	347H	F347H		SUS347H	1.4912
		S20910	XM-19	Fxm-19	Nitronic50		
		S21800	ALLoy218		Nitronic60		
		N08020	Alloy20	F20			
	015Cr20Ni18Mo6CuN	S31254	254SMo	F44			1.4547
	RS-2						
	015Cr21Ni26Mo5Cu2	N08904	904L	F904L			1.4539
	015Cr24Ni22Mo8Mn3CuN	S32654	645SMO				1.4652
		S30185	253Ma				

空心套筒类锻件不锈钢牌号

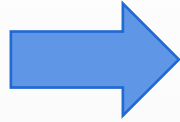
Forging hollow sleeve stainless steel steel grade

	GB/T	UNS	AISI/ASTM	ID	Trademark	JIS	W.Nr
双相型不锈钢Duplex Stainless Steel	022Cr22Ni5Mo3N	S31803		F51	AL2205	SUS32953L	1.4462
	OCr26Ni5Mo2	S32900	329			SUS32951	1.446
		S32950		F52			
	022Cr25Ni7Mo4N	S32750	2507	F53			1.441
		S39274		F54			
	022Cr25Ni7Mo4WCuN	S32760		F55			1.4501
	022Cr23Ni5Mo3N	S32205	2205	F60			
	03Cr25Ni6Mo#Cu2N	S32550	255	F61		SUS32954L	1.4507
沉淀硬化型不锈钢 Precipitation Hardening Stainless Steel	05Cr17Ni4Cu4Nb	S17400	630,17-4PH			SUS630	1.4542
	07Cr17Ni2Al	S17700	631,17-7PH			SUS631	1.4568
	07Cr15Ni7Mo2Al	S16700	632,15-7MoPH				1.4532
	06Cr17Ni7AlTi	S17600	635				
	05Cr15Ni5Cu4Nb	S15500	XM-12,15-5PH				1.4545
	04Cr13Ni8Mo2Al	S13800	XM-13,13-8MoPH				

锻造轧辊加工流程图 • Forging Roll Production Procedure



Steel ingots



Forging



Normalizing



Rough turning



Quenching



(Optional: Overlay welding)



Finish turning



Grinding



Milling key slot



Finished product inspection



Packing

液压缸证书 • Hydraulic Cylinder Certification



锻件证书 • Forging Certification



Page 1 of 2
Report no.: 08-6101-SQ-01 Project no.: 1925081 Report date: May 21, 2008 Office: Shanghai China

REPORT OF ACTIVITY

General scope of activity: Third party inspection services on Couplings	Dates of all related activity: May, 21, 2008 and subsequent dates
Client: Company name: Jiangyin Eternal Metal Industry Co., Ltd. Address: No.111 Gangxi Road, Zhouzhuang Town, Jiangyin City, Jiangsu Province, China Contact(s): Mr. Frank Zhang PO/shop/contract or job no:	Supplier / Manufacturer: Company name: Address: Contact(s): PO/shop/contract or job no:
Subvendor - 1: N/A Company name: Address: Contact(s): PO/shop/contract or job no:	Subvendor - 2: N/A Company name: Address: Contact(s): PO/shop/contract or job no:
Component description(s): Name: SKF Coupling Systems AB Model: YOMCA 360 S/N:	Results: Meets requirements ☒ Subject to condition(s) noted ☐ Does not meet requirements ☐

This is to certify that the undersigned did at the request of Jiangyin Eternal Metal Industry Co., Ltd, attend their facilities located at No.111 Gangxi Road, Zhouzhuang Town, Jiangyin City, Jiangsu Province, China, on May 21, 2008 to carry out inspection services of the scope described as follow:

1.0 Scope of service activity:

- 1.1 Witness of specimen sampling;
- 1.2 Witness of mechanical test and chemical analysis, and review of test reports thereof;
- 1.3 Witness of nondestructive test, and review NDT report thereof;
- 1.4 Witness of visual inspection;
- 1.5 Review of Manufacturer Certificates of Compliance;

2.0 Inspection Details:

2.1 The sampling and preparation of test specimen were witnessed by the undersigned, and found that the preparation of product chemical analysis fully complied with EN ISO 14284, location and orientation of samples and test pieces for mechanical tests were in accordance with Clause 9.2 of EN10083-1:2006.

Material Designation	Heat number
42CrMo4	07120704 & 08010111

2.2 Chemical composition was analyzed at the presence of the undersigned and reported as follow

This Report is granted subject to the condition that it is understood and agreed that nothing herein contained shall be deemed to relieve any designer, manufacturer, seller, supplier, repairer or operator of any warranty, express or implied and the liability of ABS Consulting Inc. (hereinafter referred to as ABS Consulting) shall be limited to the acts or omissions of its employees, agents or subcontractors. Under no circumstances whatsoever shall ABS Consulting be liable for any injury or damage to any person or property occurring by reason of negligent operation or any defect in materials, machinery, equipment or other items other than such defects ascertainable by normally accepted testing standards and only upon those items actually inspected by ABS Consulting and which are covered by this Report.

Form IS-2
Reporting, SZ-102-99-P02

Attachment B - Rev. 1



Page 2 of 2
Report no.: 08-6101-SQ-01 Project no.: 1925081 Report date: May 21, 2008 Office: Shanghai China

Heat number	Chemical Composition (%) by Product						
	C	Si	Mn	P	S	Cr	Mo
07120704	0.40	0.28	0.62	0.024	0.006	1.03	0.16
08010111	0.39	0.27	0.67	0.021	0.005	1.03	0.16

2.3 Tensile test and impact test were witness by the undersigned and reported as follow

Heat number	Mechanical Test			
	Tensile Strength Rm (MPa)	Yield Strength Re (MPa)	A (%)	Impact Test @RT
07120704	527	568	15.5	58/38/40
08010111	575	718	14.8	50/48/40

Note: The acceptance of these values shall be the matter of agreement between the Supplier and their Clients.

2.4 Ultrasonic tests were witnessed by the undersigned, and UT reports thereof were reviewed.

2.5 Final visual inspection performed by the Manufacturer QC inspector was witnessed by the undersigned.

2.6 Manufacturer's Certificates of Compliance were reviewed by the undersigned without any comments.

3.0 Conclusion

Inspections of these Forgings were performed within the confine of the scope of inspection indicated herein and with the issuance of this report deem these forgings satisfactorily manufactured and tested.

Report prepared and submitted without prejudice.


Cai Jianfang May 21, 2008
Technical Representative
ABS Consulting

This Report is granted subject to the condition that it is understood and agreed that nothing herein contained shall be deemed to relieve any designer, manufacturer, seller, supplier, repairer or operator of any warranty, express or implied and the liability of ABS Consulting Inc. (hereinafter referred to as ABS Consulting) shall be limited to the acts or omissions of its employees, agents or subcontractors. Under no circumstances whatsoever shall ABS Consulting be liable for any injury or damage to any person or property occurring by reason of negligent operation or any defect in materials, machinery, equipment or other items other than such defects ascertainable by normally accepted testing standards and only upon those items actually inspected by ABS Consulting and which are covered by this Report.

Form IS-2
Reporting, SZ-102-99-P02

Attachment B - Rev. 1

Industry & Facilities Division		Page: 1/4
INSPECTION REPORT Nr IR IDD/S-09/055		☐ Interim ☒ Final
BV Job nr: IDD/S-09/055		

PROJECT: TPI for FORGED FRINGS	Ref: IDD/S-09/055
BV Client:	P/o nr: (client to BV)
Manufacturer: JIANGYIN ETERNAL METAL INDUSTRY CO. LTD.,	P/o nr: (client to Manufacturer) 2207
Inspection requested by: JIANGYIN ETERNAL METAL INDUSTRY CO. LTD	

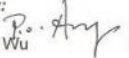
SUPPLY / SUBJECT OF INSPECTION			
PRODUCT NAME	MATERIAL	Heat No.	PCS
Forged ring A	42CrMo4	08082205	1
Forged ring B	42CrMo4	08082205	1

DOCUMENTS OF REFERENCE : See continuation sheet for additional documents: ☐ Yes ☒ No				
Title	Reference n°	Rev.	Approved by	Date
Quenched and tempered steels	EN10083-3	1996	EN	
Drawing	M27453-0300-1	2008-11-20	P.O	
Mechanical properties	MSC 001-11 Ver.5	2008-08-29	P.O	
General specification	TSC 001 Ver.4	2008-08-15	P.O	
Ultrasonic test	KFC 100 Ver.11	2007-11-29	P.O	

INSPECTIONS : <u>Inspection place & Date or Period:</u> JIANGYIN ETERNAL METAL INDUSTRY CO. LTD., Jiang Su, PRC Dec. 30th to 31th, 2008 <u>Stage of inspection :</u> ☐ Before manufacturing ☐ During manufacturing ☒ Final ☐ Packing <u>Kind of inspection:</u> ☐ Pre-inspection meeting ☒ Witnessing tests ☐ Final inspection ☒ Document review ☐ Expediting & vendor assessment ☐ Packing (for details see continuation sheet) <u>Stamping :</u> ☐ No ☒  ☒ 	Results of inspection : ☒ Satisfactory ☐ Unsatisfactory Non Conformities Reports (NCR): o NCR's issued during reported period : None o List of outstanding NCR's : None Main Conclusions & Remarks: (for details see continuation sheet) As EN10083-3 and relevant specifications, as well as the PO. Forged rings listed above were inspected by BV surveyor at the workshop of JIANGYIN ETERNAL METAL INDUSTRY CO. LTD., from Dec. 30 th to 31 st , 2008 and found the result was acceptable. Next visit scheduled: None
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Industry & Facilities Division		Page: 4/4
INSPECTION REPORT Nr IR IDD/S-09/055		☐ Interim ☒ Final
BV Job nr: IDD/S-09/055		


 ANNEXES ☐ Yes (Total number of pages:) ☒ No

Inspected by: Name: Yiqing Wu Signature:  Date of issue: Jan.9th .2009 Inspection centre: BV SHANGAI	Checked by: Name: Shiting Zhu Signature: 
Distribution: ☒ CLIENT ☐ MANUFACTURER ☐	



中国船级社
CHINA CLASSIFICATION SOCIETY
试验证书
TEST CERTIFICATE



证书编号/Certificate No. JY08PP0004

证书格式号/Form: PPC201

兹证明应 江阴浩天机械设备有限公司 的申请, 本证书所述产品所进行的下列试验项目经本社署名验船师见证。

This is to certify that, upon the request of Jiangyin Eternal Metal Industry Co., Ltd., the following items for the products stated in the Test Report are witnessed by the undersigned surveyor to the Society

产品名称 Product	Steel forging	制造厂名 Manufacturer	Jiangyin Nangong Forging Co., Ltd.
订货方 Purchaser	Jiangyin Eternal Metal Industry Co., Ltd.	产品编号 Product Serial No.	Refer to the particulars
试验地点 Place of Test	Jiangyin, Jiangsu, P.R.C.	试验时间 Date of Test	Aug.18, 2008

产品明细/Particulars					
DWG. No.	Quantity	Material	Heat treatment	Lot No.	Heat No.
M27382-0340-1	2Pcs	42CrMo	Quenched+Tempered	08-18-01	07110502
M27382-0340-1	2Pcs	42CrMo	Quenched+Tempered	08-18-02	07120603

试验标准/Test Standards

Specification and drawings supplied by the proposer.

试验项目及结果/Scope of Testing and the result

1. Mechanical property of the specimen heat-treated with the body

Lot No.	σ_s (MPa)	σ_b (MPa)	δ_5 (%)	ϕ (%)	Charpy V-notch impact test(J)(20°C)
08-18-01	715/679	874/836	18/16	60/50	108/108/100, 94/100/82
08-18-02	718/721	856/860	17/18	51/62	78/92/92, 84/102/103

2. Chemical composition re-check confirmed, UT and visual inspection carried out with satisfaction after rough machined.

产品检验标志/Marking

位置/Position : 每件产品本体上/ On the body of every piece of the product

标志样式/Type of Marking :  钢印标志/Steel Stamp

JY08PP0004

发证日期
Date of Issue Aug.20, 2008

验船师
Surveyor  (Wang Hongbin)

This Certificate is issued pursuant to the related procedures of the Society. When the certificate consists of more than one page, all pages of the certificate are taken as a whole and are valid simultaneously. No certificate page is valid without bearing the stamp of the Society and no expiry term of the certificate is regarded as valid. Any part of the certificate is not to be re-issued or amended by any party or individual in any form. This approval certificate does not constitute the final confirmation of the Society about the quality of the actual product. Related parties who are doubtful about the authenticity of the certificate may inquire of the Society or its offices.

Rev. 200701

6. 02/Ref.: 00-10-20112200 11. 01/Ref.: 00-10-20112201

地址/Address: 北京/Beijing 100007, P.R. CHINA

网站/Website: <http://www.ccs.org.cn>

第 1 页, 共 1 页 / Page 1 of 1



Certificate no: SH0815137/1
Page 1 of 1

Project:

Client: Jiangyin Eternal Metal Industry Co., Ltd

Office: Shanghai

Client's Order Number: RF5 No. Q08-0337 rev. 1-HZ
PO No. 1688 and 1689

Date: 9 May 2008

Order Status: complete

Inspection Dates:

First: 11 April 2008

Final: 21 April 2008

This certificate is issued to Jiangyin Eternal Metal Industry Co., Ltd to certify that the undersigned inspector did at their request attend Jiangyin Nangong Forging Co., Ltd at Jiangyin Nanzha Jinnan Industrial Zone for the purpose of inspection of forgings below:

Description:

- 8 forged rings in Gr 42CrMo4 to specification MSC001-11 Ver. 4, TSC001 Ver. 3, KPC100 Ver. 10 and EN10083-3 as following:

PO	Drawing No.	Heat No.	Qty(pcs)
1688	M27435-0280-1	08021109	4
1689	M27436-0240-1	08021109	4

Scope of Inspection:

- Review the basic material test data;
- Review heat treatment records;
- Select the mechanical test pieces and witness the mechanical testing;
- Review the chemical analysis report;
- Witness UT test;
- Visual, dimensional and marking inspection;
- Hard stamp on the parts as
- Endorse MTC as per EN10204 3.2;

Based on the above scope of inspection, the forgings were found to be satisfactory.


Inspector to Lloyd's Register Industry Technical Service (Shanghai) Co. Ltd.
A member of the Lloyd's Register Group

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Form 1123 (2005.02)



**DET NORSKE VERITAS
VERIFICATION REPORT
(Report No.:SHA/870386/0810-206)**

Verified Product : Forged rings in steel grade 42CrMo4
Purchaser :
Supplier : Jiangyin Eternal Metal Industry Co.,Ltd
Supplier Location : No. 111, Gangxi Road, Zhouzhuang, Jiangyin City.
DNV Project No. : 870386
Inspector : Yahoo Tian

Scope of Verification:

Upon the request of Jiangyin Eternal Metal Industry Co.,Ltd, DNV's undersigned inspector had attended the premise of manufacturing of forged rings in steel grade 42CrMo4 in the period from Aug 13 to Oct 13, 2008, and performed the following verification activities for above-mentioned products:

1. Sampling for the mechanical properties test and chemical composition analysis from the products with paint markings:

Product	Heat No.	Drawing No.	Quantity
forged rings	08061101	M27275-0420-1	2
forged rings	08061104	M27275-0420-1	2
forged rings	08031710	M26816-0370-1	2
forged rings	1080530	M27317-0390-1	1
forged rings	8T364	M27317-0390-1	1
forged rings	8T364	M27462-0340-1	1
forged rings	4-7-1826	M27462-0340-1	1

2. Witnessed the dimensional inspection according to the relevant drawings.
3. Witnessed the mechanical properties test of the forged rings of heat 08031710 with order number 1914 according to MSC 001-8 ver.4 & TSC 001 ver.3.
4. Witnessed the mechanical properties test of the forged rings of heat 1080530 with order number 1916 & heat 8T364 with order number 1916 & heat 4-7-1826 with order number 1921 & heat 8T364 with order number 1921 & heat 08061104 with order number 1958 & heat 08061101 with order number 1958 according to MSC 001-11 ver. 4 & TSC 001 ver.3, where the elongation 11.5% of test specimen for heat 08061101 with order number 1958, where the elongation 12.7% of test specimen for heat 08061104 with order number 1958 were found unsatisfied with the requirement of min. 13% in MSC 001-11 ver.4, and where the Rel 675MPa and the average impact value 27.7J for heat 08061104 with order number 1958 are unsatisfied with the requirements of min Rel 700MPa and min average value 30J in MSC 001-11 ver.4.



5. Witnessed the ultrasonic test according to KFC 100 ver.10.
6. Document review of the material test certificate of the forged rings:

Product	Heat No.	Drawing No.	Order No.	Ref. No.
forged rings	8T364	M27317-0390-1	1916	2008-09-26-3
forged rings	8T364	M27462-0340-1	1921	2008-09-26-4
forged rings	1080530	M27317-0390-1	1916	2008-09-26-2
forged rings	08031710	M26816-0370-1	1914	2008-09-26-1
forged rings	08061101	M27275-0420-1	1958	2008-09-26-6
forged rings	08061104	M27275-0420-1	1958	2008-09-26-5
forged rings	4-7-1826	M27462-0340-1	1921	2008-10-13-1

Conclusion:

1. The ultrasonic test was performed according to the required specification of KFC 100 ver.10 and the test result was found satisfactory with the specified acceptance criterias.
2. The dimensions were found satisfied with the relevant drawings.
3. The material test certificate to EN10204/3.2 was stamped with the inspector's endorsement with comments.

For **DET NORSKE VERITAS**
DNV Shanghai

Tom Wang 

Issued in Shanghai
On Oct 23, 2008



GL-NO: 0830-08-00310-202
GLIS-SH-08-120-270

Inspection Report

No. 02 Rev. 01

Client :
Order No. : 1956, 1957
Supplier : Jiangyin Eternal Metal Industry Co., Ltd.
Manufacturer :
Place of Inspection : Jiangyin, Jiangsu, China
Date/Period of Inspection : 4th August, 2008

Items:

Order No.	Description	Drawing No.	Quantity (PCS)		Heat No.
			Ordered	Inspected	
1956	Forged Rings in steel grade 42CrMo4	M27572-0400	2	1	07071604
1957		M400821-0550		1	08041406
			2	2	08042611

Base of Inspection:
MSC 001-8-Spec SKF Couplings ver.4. Date 2004-10-19
Drawing M27572-0400
Drawing M400821-0550

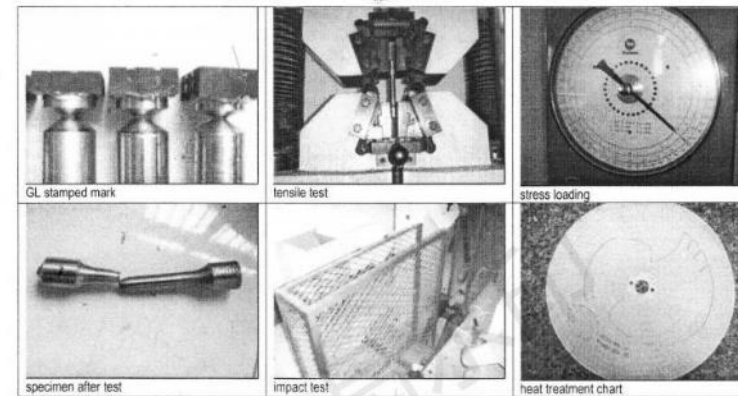
Inspection Documents:

acc. to
☒ Client- Scope of Inspection Rev. O. dated 2008-06-03
☒ GL O Scope of Inspection Rev. dated 2008-7-25
☐ Inspection & Test Plan No. Rev. dated

Managing Directors: Lutz Wittenberg (Spokesman) - Hans Berg
Germanischer Lloyd Industrial Services GmbH, Registered Office Hamburg, HR B86854, Amtsgericht Hamburg
Place of performance and jurisdiction is Hamburg. The latest edition of the General Terms and Conditions of Germanischer Lloyd Industrial Services GmbH is applicable. German law applies.



GL-NO: 0830-08-00310-202
GLIS-SH-08-120-270



Result of Inspection: ☒ There were no reasons for objection
☐ With some objection, see Highlight of outstanding list.
Status of Items (acc. to P.O.): ☒ complete ☐ not complete
☐ released for export packing ☐ ready for shipment
Purchase Order Status: ☒ complete ☐ not complete
Further Inspections: ☐ yes, probably on: ☒ no

Shanghai, China /5, August 2008
Place, Date:



Feng Fuhe
Inspector to Germanischer Lloyd

Managing Directors: Lutz Wittenberg (Spokesman) - Hans Berg
Germanischer Lloyd Industrial Services GmbH, Registered Office Hamburg, HR B86854, Amtsgericht Hamburg
Place of performance and jurisdiction is Hamburg. The latest edition of the General Terms and Conditions of Germanischer Lloyd Industrial Services GmbH is applicable. German law applies.



Inspection Order No.: IN07016NJ
Page No.: 1 of 5
Date of issue: Nov.28th, 2007

INSPECTION REPORT
(Non-Negotiable)

- Description and Quantity of Commodity: 1. 34pcs 31CrMoV9 forged bars
2. 34pcs 31CrMoV9 forged rings

- Name & Address Of Buyer: Derol Import & Export

- Name & Address Of Seller: JIANGYIN ETERNAL METAL INDUSTRY CO.,LTD

- Inspection Date & Place: NOV. 26~27, 2007
No. 15 Kaijin Road, Jinnan Development Zone, Nanza town, Jiangyin city, Jiangsu province, P.R.China

- P/O No.: 07-767

- Nature Of Inspection: 1. Witnessed 100% UT test
2. Witnessed the mechanical property test
3. Quantity check
4. Marking & Packing check
5. Document review
6. Dimension check

- Inspector: James Yang

This is to report that we, SGS-CSTC Nanjing Branch on Nov. 26-27, 2007 at the request of JIANGYIN ETERNAL METAL INDUSTRY CO., Ltd. conducted the following inspection:

Inspection Finding:

1. **Witnessed 100% UT test**
- ◇ At site, total there were total 34pcs forged bars and 34pcs forged rings were found. As per applicable specification (Doc No: 07-767), 34pcs forged bars and 34pcs forged rings were required to perform 100% UT test respectively.
 - ◇ Before writer arrival, some bars and rings had already been completed rough machining, so the lathed awl part of forged bars and rings couldn't be performed UT test due to restriction location.
 - ◇ Manufacturer submitted calibration records for UT detector for review. Verified that 2pcs used UT test machines which were calibrated by government verification bureau is valid, and their validity to April 3, 2008.
 - ◇ The test process was witnessed and confirmed conforming to applicable standard as far as visual check. Manufacturer had submitted the related reports after testing. The evaluation of UT report complied with SEP1921C/C. The detailed process please refer to photo 1~2.

Important Note
All orders are accepted and all reports and certificates issued subject to the General Conditions of Service
(copy available upon request)

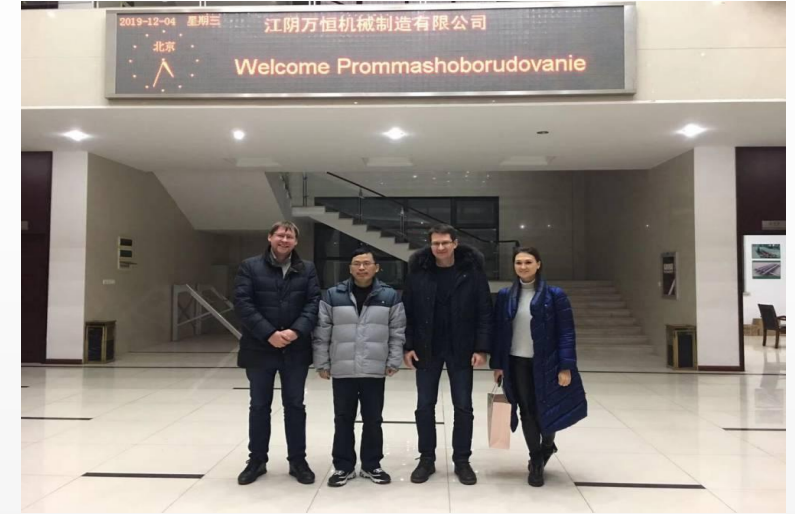
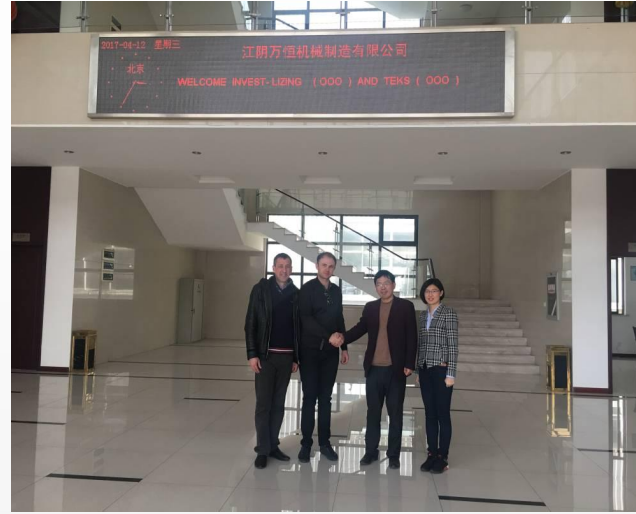
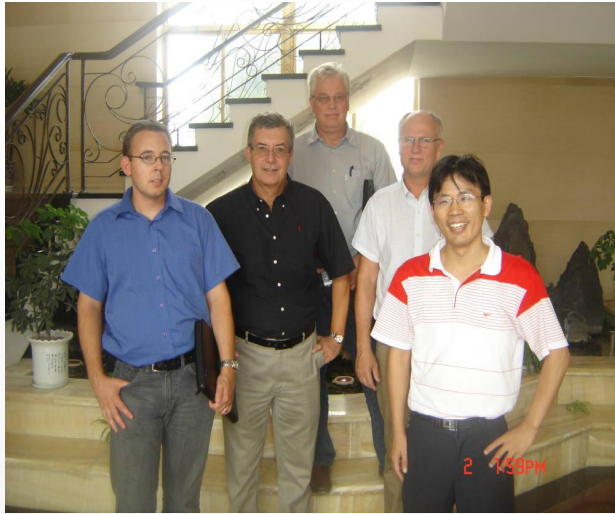
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Member of the SGS Group (Société Générale de Surveillance)

客户合照

Our clients come from more than 80 countries



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