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TURBINES and COMPRESSORS and TURBOEXPANDER and PUMP



A. Rotating Equipment scope of work

Scope of work

- 1. Design
- 2. Management including coordination with Purchaser, package suppliers/Vendors, and Other subsystem vendors
- 3. Process design
- 4. Material supply
- 5. Assembling
- 6. Transportation
- 7. Inspection and test(site & shop)
- 8. Wiring and Tubing of Junction Box within Base plate
- 9. Painting
- 10. Packing
- 11. Preparation for shipment
- 12. Erection at site
- 13. Piping & appurtenances
- 14. All other accessories which required for safe operation of packages
- 15. Performance guarantee and warranty
- 16. Mechanical guarantee and warranty
- 17. Running test at site
- 18. Minimum two weeks training course for 5 people of purchaser emplo
- 19. Supervision for commissioning
- 20. Supervision for installation
- 21. Foundation calculation and drawing



COMPRESSORS & TURBINES CONTROL SYSTEM

Our sophisticated electronic control systems are designed and maintained by a team of highly qualified electrical engineers using CAD systems and other computer-based programs.

Compressors & Turbines are equipped with such systems, which include programmable logic controls, display panels, annunciators and overall pressure control logic.

Also telephone modems and IP iterfaces are a part of the equipment to facilitate service activities all over the world.



B. Engineering, Procurement & Construction (EPC) PROJECTS

- High engineering content EPC Contracts
- Strategic alliances with OEMs
- Planning, schedule and logistics management
- Contracting risk management
- Open market procurement
- Construction supervision and management
- QA/QC, Inspection and safety management
- Commissioning, training and handover



ASA is qualified and fully equipped to carry out projects on (EPC) basis and has the appropriate certification from the "management and planning organization" to this effect.

The experience of our personnel in their relevant field of work ensures quality and timely implementation of all phases of the project.



Current Project : Providing Compressed Air for Assaluye Metering

Client : Iranian Oil Terminals Company (IOTC)

C . Offshore Offering



fixed platforms .

Modules

Turboexpanders





Water Injection



D. Steam Turbine & Gas Turbine

ASA co. service specializes in highly-engineered solutions to the most challenging problems in Steam & Gas Turbines .

- Rigorous testing capabilities
- Finite Element Analysis (FEA)
- Computational Fluid Dynamics analysis (CFD)
- Review and interpretation of high speed rotor photographs
- Selecting & sizing
- As part of refinery overhaul
- turbine modifications

1 Casing

Horizontally split

2 Supports

Fixed at compressor end Flexible at turbine end

3 Rotor

- Disk-type hollow shaft
 Combined thrust and journal bearing at compressor end
- Journal bearing at turbine endCompressor and turbine disks
- interlocked via Hirth serrations
- Compressor and turbine disks axially fixed via one central tie bolt

4 Compressor

- 15-Stage axial
- Variable-pitch inlet guide vanes

5 Combustion

 Annular chamber with ceramic and metallic heat shields
 24 hybrid burners
 Dry low-NO_x technology
 Operation with gaseous and liquid fuels

6 Turbine

- 4-Stage
- Thermal barrier blade coatings
- Convection and impingement
- cooling of blade interior Film cooling of blade airfoil surface

7 Exhaust

Axial flow

8 Generator coupling At cold end drive





Finite Element Analysis (FEA)

Utilizing ANSYS[®] and ProMechanica[®] tools, we optimize new designs and can safely push the design boundaries of your existing equipment. Areas of review range from transient heat transfer analysis of casings to steady state stress analysis of rotor blades and discs.

Computational Fluid Dynamics analysis (CFD)

We use CFD to design more efficient flow paths while decreasing the effects of erosion and deposition. In conjunction with hot erosion testing, CFD enables us to predict flow path erosion and correlate it to field data. Optimizing the flow path allows for increased performance, reduced erosion, reduced flow path deposition, and increased reliability. In addition to our own equipment,



E. Turboexpander

Performance-driven engineering

1. Outer Casings

- Designed and manufactured in accordance with ASME pressure vessel codes
- Full solution and stabilization heat treatments performed for optimum structural margins and corrosion resistance
- Designed to withstand greater piping loads, and enable single lift capability for the entire outer casing assembly
 Upgraded fastener design and materials

2. Integral/Stator Shroud

- Increases expander efficiency by 2–6% over cantilevered stator designs
- Significant reductions in nose cone stress levels (typically 40–60%)
- Easy removal from the back of the expander, eliminating the need to disassemble inlet or exhaust piping
- Improved metallurgy reduces the effects of in-service aging and welding problems
- Most current chromium carbide coatings over the full pressure side and leading edge of stator vanes
- Various materials available to accommodate different high temperature requirements
- Designed to minimize flow-path erosion and deposition

3. Rotor Blades

- Optimized airfoil aerodynamic designs for efficiency and erosion through the use of three-dimensional Computational Fluid Dynamics (CFD) software
- Increased structural and vibration margins due to
 reduced steady state and gas bending stress levels

4. Nose Cone

- Improved aerodynamic design provides smoother acceleration of flue gas and more uniform distribution of catalyst into stator blades
- New inlet strut design improves aerodynamic losses, catalyst distribution and structural integrity
- Increased structural margins with weld neck support flanges in optimum locations
- Full radiographic quality welds

5. Exhaust Diffuser

- More efficient designs through Computational Fluid Dynamics (CFD) analysis
- Elimination of diffuser cracking and failures through Finite Element Analysis (FEA) of transient and steady state stresses, including diffuser natural frequencies

6. Upgraded Shaft Design

- Increased stress margins and torque capacity from larger journal diameters and coupling
- Shaft extends beyond the bearing housing to allow coupling installation or removal without bearing disassembly



1. Expander casing

Designed and built under ASME specification Hydrostatic test at 1.5 times the MAWP Material selected as per the application

2. Expander wheel Open/closed 3D wheel

High efficiency up to 92% Milled from solid Heat treatment for maximum strength and durability Material : Aluminium alloy, SS or Titanium

3. Inlet guides vanes

Aerodynamically efficient design Erosion resistant materials Wide operation range

4. Shaft / rotor

Special attachment for best moment transmission

5. Labyrinth seals

/ery safe and reliable system

6. Bearings

Combined radial tilting pad and axial tapere land bearing Maximum stability and reliability

7. Compressor casing

Designed and built under ASME specification Hydrostatic test at 1.5 times the MAWP Material selected as per the application

8. Compressor wheel

Open 3D wheel High efficiency Milled from solid Heat treatment for maximum strength and durability Material : Aluminium alloy, SS or Titanium

F. Compressors

Optional equipment: The best value proposal.

- centrifugal type
- screw type
- reciprocating type

compressors, designed to meet the needs of people like you.

The Maintenance Engineer

- · Operator and service friendly
- Low maintenance requirements

The Financial Manager

- Easy and low cost installation
- Low energy consumption

The Safety and Environment Manager

- No condensate management problems
- Silenced package

The Quality Manager

- No product spoilage
- Consistent performance over the lifetime

The General Manager

- Proven reliability
- The most cost effective solution

VSD – Variable Speed Drive for the lowest cost compressed gas

Variable Speed Drive – compressor, your energy bill and the stability of your process will show a major difference.











G. Pump

Centrifugal Pumps

for process, refinery, water injection, oil pipeline, boiler feed and water cooling services We supply complete solutions including engineering, equipment, turnkey units and contractual maintenance services.

- Centrifugal Pump Design •A Short History •Bernoulli's Principle & the Venturi Effect Centrifugal Pump Design
- Pump Parts and Identification •Wetted End Parts •Dry End Part •Pump Tree Drivers

Bearing Failure Analysis •Disassembling a Bearing for Inspection Troubleshooting Bearing Failures

Simple Vibration Measurement

•History of Vibration as a Condition Testing Tool

•How to Read a Vibration Meter

- •Measurement of Vibration Velocity A Check of Forces on the Pump
- •Troubleshooting of Common Pump Problems Using a Vibration Meter

Acoustical Measurement of Pump Bearing Condition

•Creation of a Pothole Index •Spalling and How to Determine When It Occurs •Pump Bearings Condition Guide

Pump Shafting Inspection and Repair Shaft Condition & Drawings •Stub Shaft Techniques Bowed Shafts Diameter Corrections

Pump Case Repair Spray Metalizing •Epoxy Repair •MIG & TIG Repair

Suction and Discharge Ends Repair Piping •End Suction Pump Rebuilding Procedures & Techniques-

Dynamic Balancing

•When is Balancing Required? •How Balancing is Done Affects of Balancing on Bearing & Seal Life



Downstream

Rotating Direction Indicator Pump Casing

Suction Side

Pipe Flange

Driveshaft Flange

Volute Chamber

•• Impeller Upstream Pipe Flange

H. Projects

Revision		03								47	
Date		Nov-12	ASA CO.						1	ARTL -	
Document No. ASA-RL-001		PROJECTS (DESIGN & MANUFACTURING PROJECTS)								Anna and	
		TECHNICAL SPECIFICAT			AL SPECIFICA	TION					
PROJECT		PRE (B	SSURE ARG)	FLOW (m3/min)		CLIENT	EMPLOYER	QTY.	DESCRIPTION	
	NAME YEAR		INLET	OUTLET	DISPLASMENT	NORMAL CONDITION	INSTALLATION SITE				
							GAS COMPRESSOR P	ROJECTS			
	CNG	1385	3	300	3.5	11	GERMAN COUNTRY / SCHWELM COMPANY	GERMANY COUNTRY	SCHWELM CO.	100	WITH API CERTIFICATE
	CNG	1389	17	250	2.3	38.6	IRAN CNG STATION	GAS KHODRO		12	WITH API CERTIFICATE
HYI	DROCARBON	1388	2	18	30	63	ABADAN REFINERY	ABADAN REFINERY		2	WITH API CERTIFICATE
HYI	DROCARBON	1377	2	18	3	6.7	NARGES E SHIRAZ	NARGES E SHIRAZ		2	
P	URGE GAS	1389	2	16	3	6.4	GHAENAT STEEL	PCK CO.	BAR SO		WITH API CERTIFICATE
	CO2	1383	1	16	1	1.3	ABALI			2	
	CNG	1389	17	250	2.4	39	IRAN CNG STATION	HESA	HESA	30	ACCORDING ARIEL CO. TECHNOLOGIC
	CO2	1389	4	17	5	20.3	VEZARATE NIRO	GAS CARBONIC SHAHRKORD	GAS CARBONIC SHAHRKORD	3	
	CO2	1384	2	18	10	21	GOLNAZ KERMAN	GOLNAZ KERMAN		1	
REW	24-C-01 A/B		1.05	2.857	25.2	26	CHESHMEH KHUSH	AZARAB CO.			
sc	24-C-02 A/B		2.21	11.43	31	69	CHESHMEH KHUSH	AZARAB CO.			
TING	24-C-03 A/B		10.9	35.53	34	378	CHESHMEH KHUSH	AZARAB CO.			
toca.	24-C-04 A/B		35	92.01	11	377	CHESHMEH KHUSH	AZARAB CO.			
CIPR	24-C-05 A/B		91.5	179.9	4.2	387	CHESHMEH KHUSH	AZARAB CO.			
RE	24-C-06 A/B		174	350	2.2	387	CHESHMEH KHUSH	AZARAB CO.			
ШС		1005		550	2.5	0.0	AIR COMPRESSOR PH				
HIG	H PRESSURE	1385	at.	550	3.5	3.8	PORTABLE		SANAYE DEFA	20	
HIG	H PRESSURE	1389	at.	550	3.5	3.8	PORTABLE	SHAHID HEMAT	SANAYE DEFA	2	
HIGH PRESSURE 1389		1389	at.	550	3.5	3.8	PORTABLE	SHAHID KALHOR	SANAYE DEFA	2	
LOCOMOTIVE		1384	at.	35	3.8	4.1	PARCHIN	SHAHID FASIHI	SANAYE DEFA	12	
COMPRESSOR		1389	at.	18	2.2	2.5	LOCOMOTIVE			20	
MEDIUM PRESSURE		1307	al.	30	14	10 5	ESEALIAN			2	WITH API CERTIFICATE
AIR	INSTRUMENT	1384	ai.	12	10	10.5	ESFAHAN			2	
AIR	INSTRUMENT	1382	al.	7	5	5.2	ESEAHAN			2	
AIR	INSTRUMENT	1385	at.	7	5	5.2	ESFAHAN	NIROGAH E BARGH	NIROGAH E BARGH	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1385	at.	7	3	3.3	ESFAHAN	SHIR E DALANKO	SHIR E DALANKO	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1385	at.	7	5	5.0	YAZD	SHIR E PASTORIZE	SHIR E PASTORIZE	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1375	at.	10	10	10.5	TEHRAN	DOJHPAD CO.	DOJHPAD CO.	2	
AIR	INSTRUMENT	1376	at.	10	1	1.3	KISH	ELIZE	ELIZE	2	
AIR	INSTRUMENT	1389	at.	10	8	8.5	BAHREGAN SAR	FALAT GHAREH	PIDEC CO.	1	WITH API CERTIFICATE
AIR	INSTRUMENT	1389	at.	10	12	12.6	ABOZAR OFFSHORE	FALAT GHAREH	PIDEC CO.	1	WITH API CERTIFICATE
AIR	INSTRUMENT	1385	at.	10	13	13.6	KHARK	FALAT GHAREH	FALAT GHAREH	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1388	at.	10	10	11	KHARK/LAVAN	FALAT GHAREH	FALAT GHAREH	12	WITH API CERTIFICATE
AIR	INSTRUMENT	1385	at.	10	3	3.2	NAR KANGAN	NAFT ZAGROS E JOUNOB	NAFT ZAGROS E JOUNOB	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1389	at.	10	12	12.5	DEHLORAN	OEID	OEID	2	WITH API CERTIFICATE
AIR	INSTRUMENT	1389	at.	10	5	5.5	DANAN AHVAZ	NAFT MARKAZI	NAFT MARKAZI	2	WITH API CERTIFICATE
DESICCANT DRYER PROJECTS											
HIG	HIGH PRESSURE 1385		5	550	3	.8	PORTABLE	SHAHID FASIHI	SANAYE DEFA	20	
HIGH PRESSURE 1389		1389	550 3		.8	PORTABLE	SHAHID HEMAT	SANAYE DEFA	1		
HIGH PRESSURE 1389		1389	Ę	550 3.8		.8	PORTABLE	SHAHID KALHOR	SANAYE DEFA	1	
MEDIUM PRESSURE 1384		1384	35		4	.1	PARCHIN	SHAHID FASIHI	SANAYE DEFA	12	
MEDIUM PRESSURE 138		1387	35		1	6	LAVAN	FALAT GHARE	FALAT GHARE	1	
AIR INSTRUMENT 1389		1389	10		5.5		DANAN AHVAZ	NAFT MARKAZI	NAFT MARKAZI	1	
AIR INSTRUMENT 1389		10		8	.5	BAHREGAN SAR OFFSHORE	FALAT GHAREH	PIDEC CO.	1		
AIR INSTRUMENT 1389			10 12.6		2.6	ABOZAR OFFSHORE	FALAT GHAREH	PIDEC CO.	1		
AIR INSTRUMENT 1385			10	13	9.6	KHARK	FALAT GHAREH	FALAT GHAREH	2		
AIR	INSTRUMENT	1388		10	1	1	KHARK/LAVAN	FALAT GHAREH	FALAT GHAREH	12	
AIR INSTRUMENT 1385			10 3.2		.2	NAR KANGAN	NAFT ZAGROS E JOUNOB	NAFT ZAGROS E JOUNOB	1		

Revision	03								
Date Nov-12		ASA CO.							ARTL
Document No.	ASA-RL-001		TEOUNUO	(-					
PROJECT		PRESSURE	EL OW (AL SPECIFICA	IION				
NAME YEAR		(BARG)	DISPLASMENT	NORMAL	INSTALLATION SITE	CLIENT	EMPLOYER	QTY.	DESCRIPTION
AIR INSTRUMENT	1389	10	12		DEHLORAN	OEID	OEID	1	
				REFRIGERATOR DRYER	PROJECTS				
STEEL RIZAN	1385	12 20		GHOM	STELL RIZAN	STELL RIZAN	1		
DOJH PAD	1375	10	1	0	TEHRAN	DOJHPAD CO.	DOJHPAD CO.	1	
RAIN	1384	10	3		TEHRAN	RAIN CO.	RAIN CO.	1	
KISH ELIZE	1385	10	1	I	KISH	ELIZE	ELIZE	1	
					TURBINE PROJE	CTS		-	
BLADES	1370-1374		RESEARCH	H & DEVELOPN	/ENT	TAVANIR CO.		10	AWARDED
TURBINE BLADES	1374-1378		DESIGN A	ND MANUFAC	TURE	TAVANIR CO.		15	
BLADES	1374		RESEARCH	H & DEVELOPN	MENT	JAHAD RESEARCH CENTER		3	
BLADES CENTAR TURBINE	1375	RE		ERING & MAN		IOPTC		1	
BLADES GAS TURBINE	1376	RE						10	
DIRECTINAL FREEZING GE-F 5 GAS TURBINE	1376-1377		RESEARCH		/ENT	REV POWER STATION	TAVANIK CO.	3	
GE-F 9 GAS TURBINE	1377-1378	RE		ERING & MAN	UEACTURING	TAVANIR CO.		10	
AROMATIC PLANT PILOT	1379		EN	GINEERING		PUYESH REFINERY CO.			
DIESEL OIL SYSTEM	1381	RE	VERSE ENGINE	ERING & MAN	UFACTURING	SADRA CO.		2	
SOLAR CENTAR GT	1382-1384	RE	VERSE ENGINE	ERING & MAN	UFACTURING	KALA NAFT CO.		3	
RASTON 1750 GT ROTOR TURBINE	1382-1382	RE	VERSE ENGINE	ERING & MAN	UFACTURING	KALA NAFT CO.		3	
AVEN ROLLS ROYS GT ROTOR TURBINE	1383-1385	ENGINEERING				KALA NAFT CO.		3	
SOLAR CENTAR GAS TURBINE	1383-1384	OVERHALL AND REPAIR				IOPTC		2	
RASTON 1750 GT ROTOR TURBINE 1385		REPAIR				MAVADKARAN	GSOGPC	1	
TB-400 GAS TURBINE 1385				REPAIR		KALA NAFT CO.			
DRESSER RAND COMP. IMPELLER	1386	REPAIR				GSOGPC		5	
ELIOT COMP. REDESIGN	1387	REPAIR & REDESIGN				GSOGPC		1	
GT10B TURBINE BLADES	1389	RE	VERSE ENGINE	ERING & MAN	UFACTURING	TAK KHAVARMIANE CO.		1	
C-251 TURBINE BLADES	1391			REPAIR		IKORC		1	
Aromatics Patro	chomistry	Engineering	and Proparation	of Technical D	Mechanical Proje	Eanavany o Potroshimi		1	
Research, for tur	bine blades	Engineering	ineering, Resear	ch. Prototyping	Manufacturing	Tavanir Co	NISOC Co		IOPTC Co
Research, for tur	bine blades	Reverse Engineering			l	KALA NAFT TEHRAN	11000 00		
Feasibility of producing	Car Compressor	Engineering, Technical/Economical study			, nical study	Sard Saz Khodro Co.	Tayko Co		
Manufacturing Rote	or of Turbines	Prototyping and Quality Controlling			trolling	KALA NAFT TEHRAN	· ·		
Diesel Oil syste	m filtration	Diesel Oil system filtration - South Pars Phases 4,5(offshore)				SADRA Ind. Co.			
Foulad Air Sepa	aration Unit	Design, Inspection of Manufacturing Compresso Engineering Documents			essors, Preparation of	National Foulad Co.		8	
CNG Station - Ma	halati Tehran	Preventive Maintenance			ce	NIOPDC			
					Process Projec	ts			
HAFTKEL & NAFT SE	FID DESALTING	Desalting Unit,Waste water treatment package				NIOSOC			
GACHSARAN DES	ALTING UNIT	D	esalting Unit,Wa	ste water treatm	nent package	NIOSOC			
Wellhead Fa	acilities	Well heads and related flow lines				ICOFC			
Detail Design of Phas	es15-16 offshore	Wellhead and wellhead control panel				POGC			
Renovation of Siri Island C&D Oil Fields		Water injection systems			IS	IOOC			
Maroun 3 Desalting plant		decreasing of salt in oil and water treatment of produced water.			nt of produced water.	NISOC			
Maruon 1-6 multiphase Pump Station		Gas transmission pipelin			n or Anvaz, Omidien, Gureh	NISOU			
ABADAN Refinery Metering System		Turbine Flow Meter-TE			M	NISOC			
Gas Compressor Station of IGATIV		Detail Design				NIGC		4	
Electrical & Control Projects									
Kharg Isl	land		Instrument mai	intenance and c	alibration				
Abozar & Bahregan sar (offshore project)		LCP & MCC & UCP (redundancy type of PLC)			type of PLC)	PIDEC		2	
Air instrument package (onshore project)		LC	CP & MCC & UC	P (redundancy	type of PLC)	IOOC , NIOSOC , ICOFC , NISOC		12	
High pressure compr	ressor (500 bar)		PLC C	ONTROL PANE	L	Shahid fasihi		23	

Revision	03				ASA	DO-	N. S. N.		A7 🔪
Date Nov-12		PROJECTS							
Document No.	ASA-RL-001	(DESIGN & MANUFACTU							Arrens and
		TECHNICAL SPECIFICATION							
		PRESSURE (BARG)	FLOW (m3/min)		INSTALLATION SITE	CLIENT	EMPLOYER	QTY.	DESCRIPTION
NAME	YEAR		DISPLASMENT	NORMAL CONDITION					
NIOTC - Kha	irg Island		Gas Turbine	Instrument and	Control	NIOTC		4	
POWER MON	NITORING	POWER	MONITORING E	BY DIGITAL CO	UNTER NETWORK	FZA CO.		17	
		1			Piping Project	S			
Dalan Refinery Waste	e Water tretment		Consulting in p	unches after co	nstruction	Arta Sanat			
Lavan refiner	ry Project		Piping	g system design		IGC			
Sharvand AS-Built d	drawings Project	-	Mana	iging team work		Shahrvand Pars Co			
Acrylonitrile Pet	trochemical		Pipin	g system design	1	FCC Co.			
Mansuri new produc	ction & desalting		Preparin	g PDMS catalog	gue	Petro Farayand energy			
Ghaenat steel	l complex	-	Preparing PD	MS Admin & Ca	atalogue	Rasam Engineering Group			
Sweet gas supplying for	or TANG-E-BIJAR		Pipeline &	Piping system d	esign	Satrap Jonoub Co			
Bandar Abbas	s Bitumen		Pipin	g system design	1	Mapna			
					Research Proje	ects			
Cheshme Khosh Con	mpressor Station		Engineering, Pr	ocurement & C	onstruction	Mehras Co. + AZARAB Co.			2010
Centrifugal Compre	essor Impeller		Desig	n & Manufacture	9	Turbine Machine Khavarmiane			2011
Bio Lar	mp		Rese	earch & Design		JAHAD RESEARCH CENTER			2011
Turbo-Expander	Compressor	RE	VERSE ENGINE	ERING & MAN	UFACTURING	JAHAD RESEARCH CENTER			2011-2013
Turbo-Expander	r Generator	RE	VERSE ENGINE	ERING & MAN	UFACTURING	JAHAD RESEARCH CENTER			2011-2013
Hydrogen S	Storage	F	Research, Comm	ercial Expanation	on & Desgin	JAHAD RESEARCH CENTER			2011-2013
Energy Saving a	& Monitoring		Engineering, Pr	ocurement & C	onstruction	JAHAD RESEARCH CENTER			2011
Photo Bio R	Reactor		Engineering, Pr	ocurement & C	onstruction	JAHAD RESEARCH CENTER			2011-2013
Helium Liqu	uifection	F	Research, Comm	ercial Expanation	on & Desgin	JAHAD RESEARCH CENTER			2011-2013
					Reverse Engineering	Projects			
Turbo-Expander Sh	haft & Impeller	RE	VERSE ENGINE	ERING & MAN	UFACTURING	Shazand Refinery			2011
Labyrinth	Ring	RE	VERSE ENGINE	ERING & MAN	UFACTURING	Shazand Refinery			2011
Steam Tu	Irbine	Repair	r of damaged bla	ides of SIEMEN	SE steam turbine	Shazand Refinery			2011 - 2012
Centrifugal	I Pump		Rese	earch & Design		Shazand Refinery			2012
Turibine Dia	aphragm	REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012
Recip.Compresso	or Valve Plate	REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012-2013
Hot Tap C	Cutter	REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012
Centrifugal Co	ompressor	RE	VERSE ENGINE	ERING & MAN	UFACTURING	Isfahan Refinery			2012-2013
Compresso	or Liner	REPAIR OF DAMAGED LINER, MANUFACTRUING AND ASSEMBLING				Shazand Refinery			2012
Dresser Blow	ver Rotor	REVERSE ENGINEERING & MANUFACTURING				Refinery			2012-2013
Spring		REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012-2013
Stuffing Box		REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012-2013
Shaft		REVERSE ENGINEERING & MANUFACTURING				Shazand Refinery			2012-2013
Gas Outlet for Turboexpander		REVERSE ENGINEERING & MANUFACTURING			UFACTURING	Shazand Refinery			2012-2013
Spindle Set Pump		REVERSE ENGINEERING & MANUFACTURING			UFACTURING	Shazand Refinery			2012-2013
Diaphragm Valve		RE	VERSE ENGINE	ERING & MAN	UFACTURING	Shazand Refinery			2012-2013
					EPC Projects	S			
Assaluye Metering Compressor			Engineering, Procurement, Construction			IOTC			2012-2014
		To be Co	ontinue	No oto P		····			
9001				₩0.246, Beł	Tel: (+9821) 66047830- Fax: (+9821) 66047830- Fax: (+9821) 66048 info@asacomp	51, ronid Sq, Tehran, Iran 66033416 8041 .ir			

I. Machinery and Technical Equipments & Laboratory Equipments

Item	Machinery and Technical Equipments	Quantity
	Forging and metalworking shops :	
	Cutting	4
1	Flex Work	3
	Welding	10
	Machining shops :	
	Turning	4
	Milling	3
	Smoothing	2
2	CNC Turning	3
2	CNC Milling	3
	CNC Spark	1
	CNC Wire Cut	2
	Heavy Turning	1
	Medium Turning	2
	Heat Treatment shops :	
3	Vacuum Furnace	1
	Other Furnace	4
	Special Welding shops :	NO.
1 > 2	TIG Welding	1
4	MIG Welding	1
4	Resistance Welding	1
1111	Special Welding Fixture	2
- 147	Vacuum Casting shops :	
5	VIM Furnace System	1
	Accessories	1
	Construction of the local data and the local data a	

Personnel

Engineering Design Dept.

- 4 Mechanical Engineer
- 2 Metallurgical Engineer
- 2 Chemical Engineer
- 1 Electrical Engineer
- 2 Draftsman

Production Dept.

- 4 Mechanical Engineer
- 1 Weld Engineer
- 1 Erection Engineer
- 4 Technician
- 6 Machine Operator
- 2 Pipe Fitter
- 1 Sand Blasting
- 3 Assistant

Quality Control Dept.

- Engineer
- Technician
- Administration & Clerical
 - 2 Financial
 - 2 Sales
 - 2 Administration

tem	Laboratory Equipments	Quantity
	Mechanics of Material Lab :	
1	Mechanical Strength Test	2
	Creep Test	2
	Fatigue Test	1
	Impact Test	1
	Chemical Analysis Lab :	
2	Quantum Analysis	1
	Single Element Analysis	1
	Non-Destructive Test Lab :	
3	X-RAY Test	3
	Ultrasonic Test	1
	Eddy Current Test	1
	Metallographic Lab :	
4	Optic Microscope	2
	Microscope	1
	Image Analysis	1
	Material Analysis Lab :	
5	Complete System	1
	Balancing up to 47000 RPM	1
1	Accurate Measurement Lab :	
6	• CMM	1
	Profile Projector	1
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