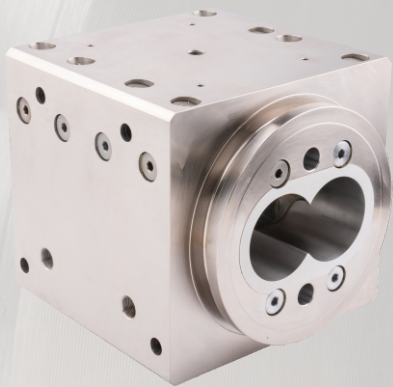




GLOBAL but LOCAL



Cutting Rotor



Extruder Barrel

WHO ARE WE ?

Raya Energy Engineering Group was formed to enhance the supply chain by providing products to various domestic industries, including oil, petrochemicals, steel, and cement. This is achieved by leveraging a team of skilled, experienced professionals. The company has a strong track record of delivering high-quality services in these sectors. In terms of international presence, Raya Energy has strategically positioned itself with active foreign commercial offices, such as Raya Onyx Energy in Istanbul, Turkey, Raya Golden Five General Trading LLC in Dubai, UAE, and Raya Energy Ltd in Toronto, Canada, all of which function under the guidance of the main company. The company significantly emphasizes manufacturing and localization efforts through its workshop complex, which specializes in reverse engineering parts for the aforementioned industries. This ensures the provision of active services to its clients. Over the years, Raya Energy has catered to a diverse clientele and stands out as a specialized manufacturer and supplier of numerous products, including:

- Twin Screw Extruder & Replacement Parts
- Pumps
- Compressors
- Turbines
- Gearbox & Couplings
- Mechanical Seals & Dry Gas Seals
- Instruments
- Valves
- Electro Motors

Raya Energy Engineering Company is in the AVL of Ministry of Petroleum and member of:

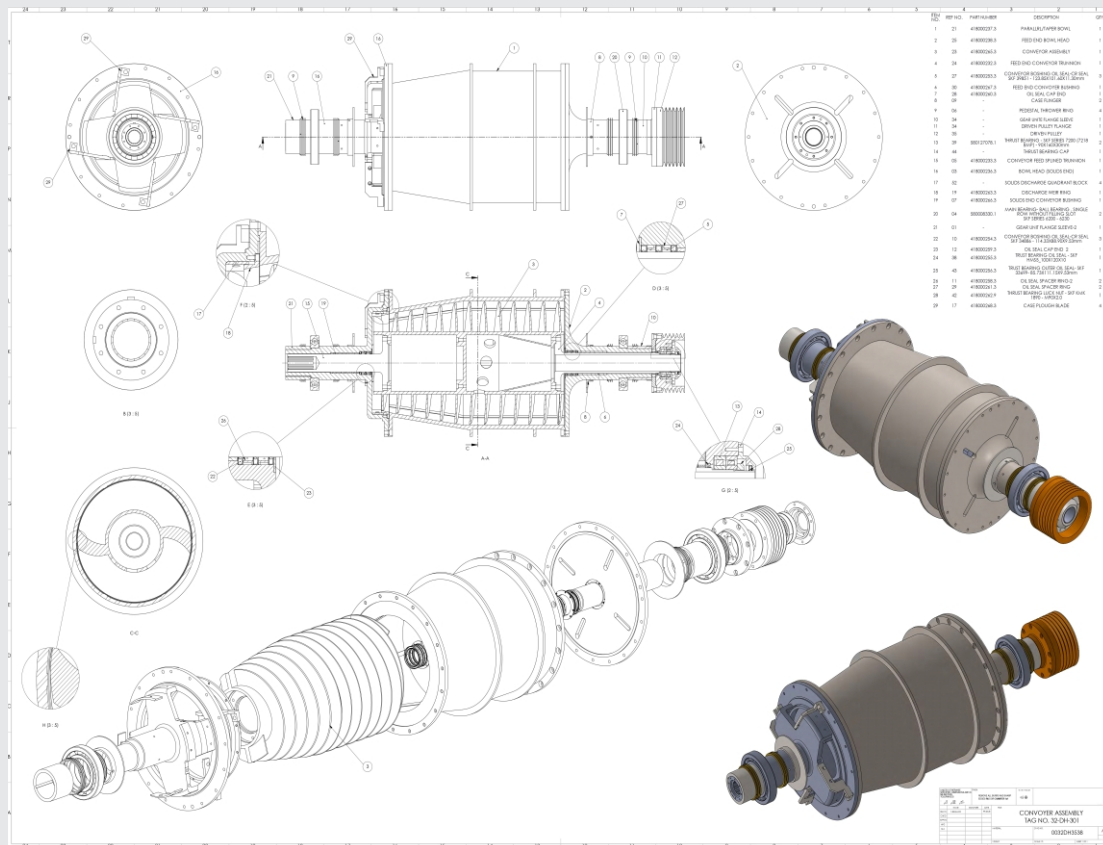
- S.I.P.I.E.M
- Iran Turkey Joint Chamber of Commerce
- Iran and Russia Chamber of Commerce



MANUFACTURING DEPARTMENT

With a team of expert engineers and the latest equipment, this company offers replacement parts and systems for Iranian industry production lines, ensuring top quality and competitive pricing. The Raya Energy Engineering Group has become a renowned option for its specialized methodology in manufacturing components and machinery for its clientele. Recognizing the rising demand for localization, homegrown production of parts, and reverse engineering, the group has successfully delivered pivotal services in these domains, as detailed below:

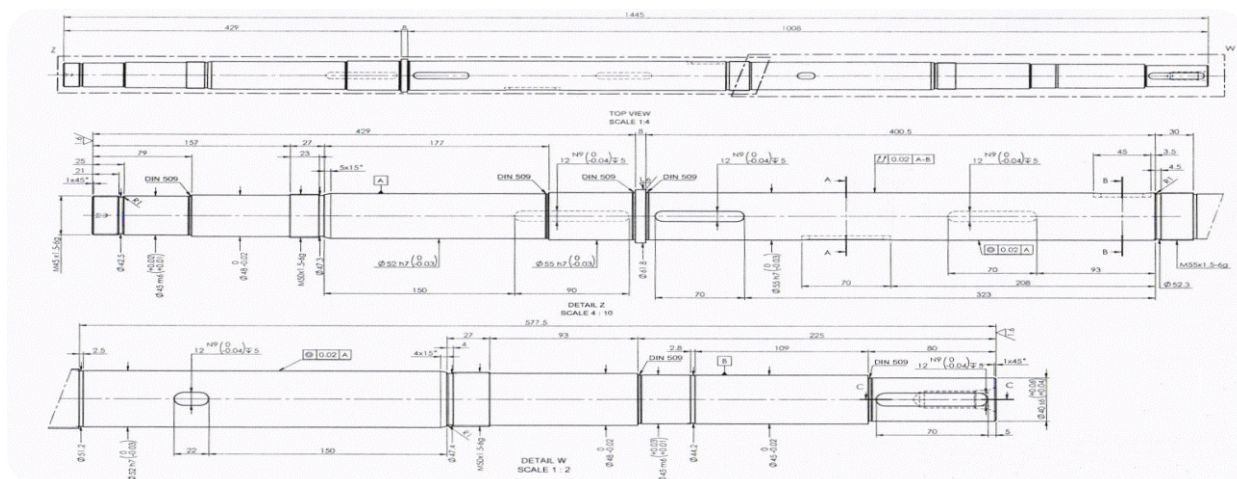
1. MANUFACTURING OF HOMAS BROADBENT DECANTER SPARE PARTS, TYPE CC-709-710 Tabriz Petrochemical Co.



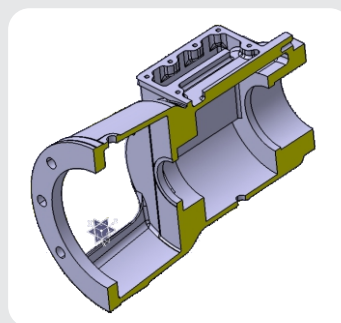
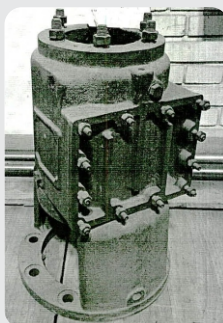
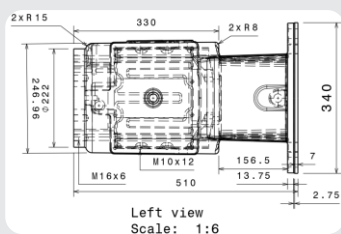
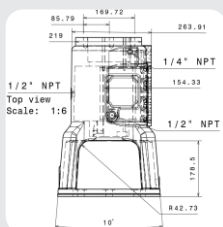
Our Clients

MANUFACTURING DEPARTMENT

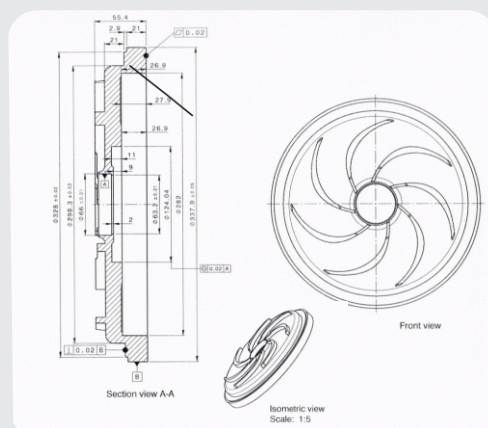
2.MANUFACTURING OF RUHRPUMPEN CENTRIFUGAL PUMP, TYPE 3 Ov4, TORC



3.MANUFACTURING OF RUHRPUMPEN CENTRIFUGAL PUMP BEARING HOUSING, TORC



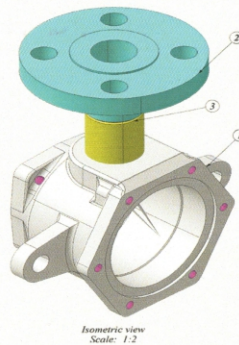
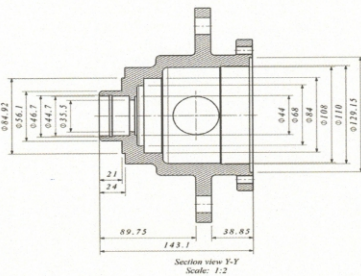
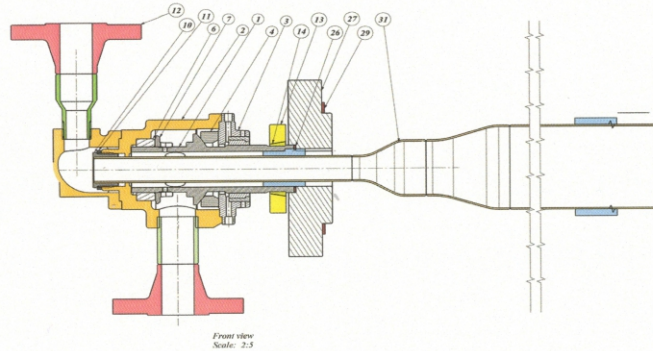
4.MANUFACTURING OF FLOWSERVE CENTRIFUGAL PUMP TYPE ECPJ 32, 160R TORC



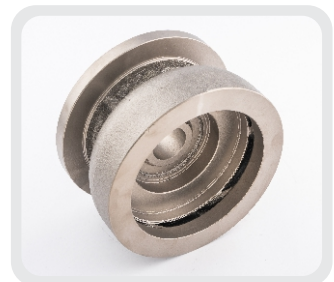
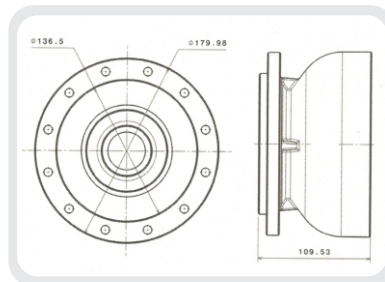
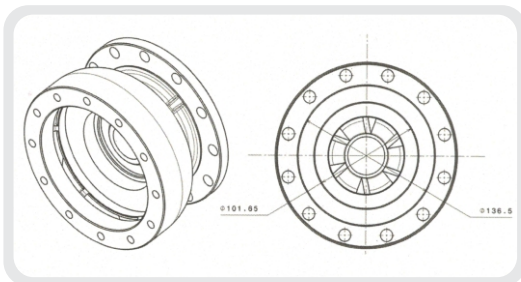
MANUFACTURING DEPARTMENT

5. PEARL ROTARY JOINT - SHOWA GIKEN - MODEL 25-50 A, INSTALLED ON JSW EXTRUDER MAHABAD PETROCHEMICAL Co.

Number	Part Number	Part Name	Material
1	01-556	(ROTOR)	S45C
2	01-560	(Casing)	FCD450 STPG370 A105
3	01-559	(Cover)	FCD450
4	01-561	(Seal Ring)	CARBON
6	01-562	(Carbon Bearing)	CARBON
7	01-563	(Washer)	S45C
10	-	Packing Gland	C3604B
11	-	Lock Nut	C3604B
12	-	Elbow	FCD450 S25C A105
13	01-558	(Rotor Flange)	SS400
14	01-564	(Split Ring)	STKM13A
26	-	Gasket	M/#8121
27	01-557	(Journal Flange)	SS400
29	-	Gasket	M/#8851
31	01-579	(Internal Pipe)	SUS304TP



6. PRODUCING OF SHIN NIPPON CENTRIFUGAL PUMP BOWL, KHARG PETROCHEMICAL Co.

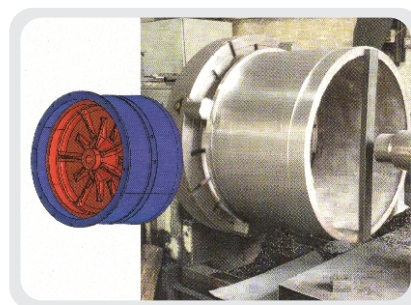
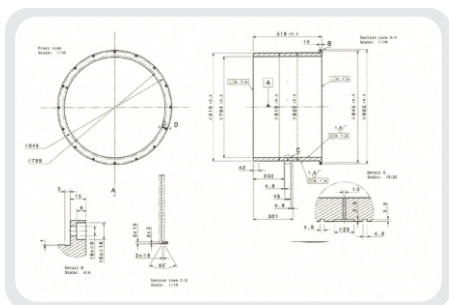


Our Clients

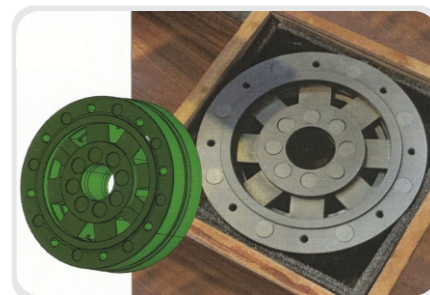
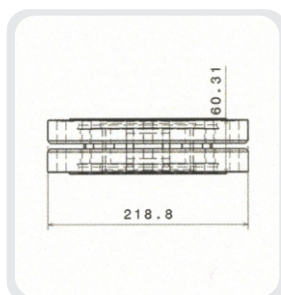
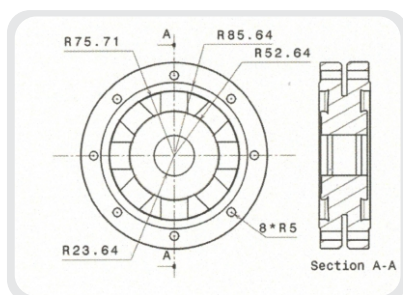


MANUFACTURING DEPARTMENT

7. LINER FOR MDU UNIT COMPRESSOR IRANOL OIL Co.

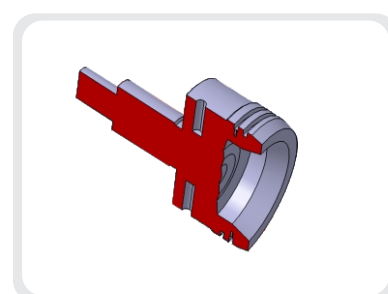
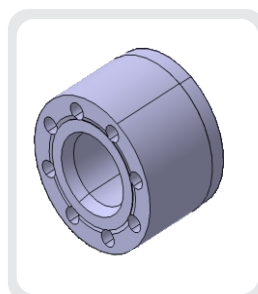
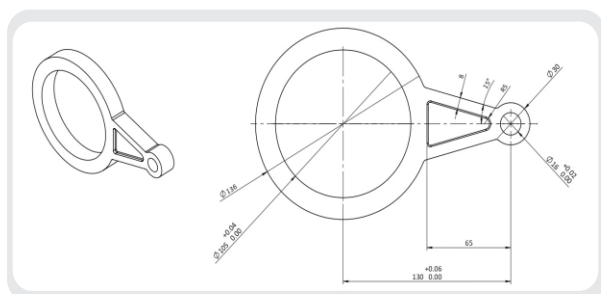


8. METASTREAM FLEXIBLE COUPLING, M SERIES ABADAN OIL REFINERY Co.



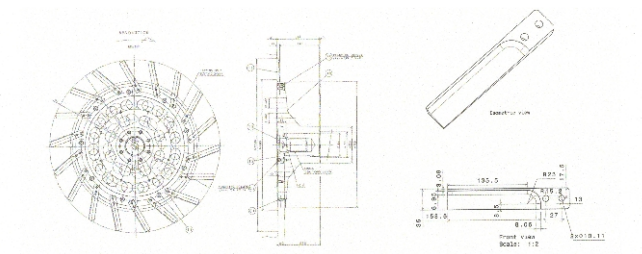
Raya Energy 07

9. LEWA DOUBLE DIAPHRAGM METERING PUMP, TYPE LDD2-M910S-2 MAHABAD PETROCHEMICAL Co.

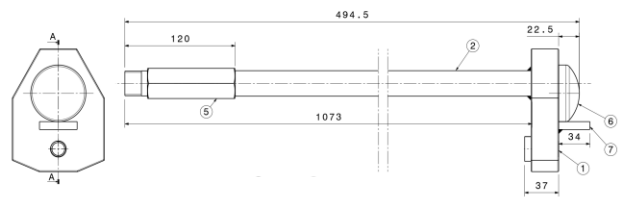
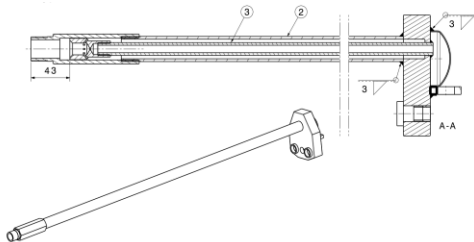


MANUFACTURING DEPARTMENT

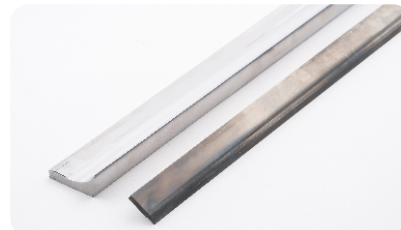
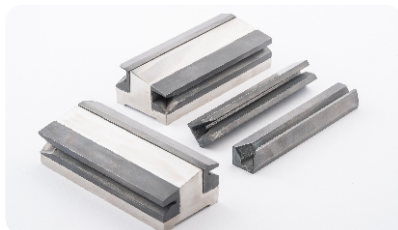
10. CUTTER BLADES OF JSW EXTRUDER MODEL CIM 460 MAHABAD PETROCHEMICAL Co.



11. MANUFACTURING of I.C.E GAS and OIL BURNER SPARE PARTS, MODEL ND 6, FUEL OIL STEAM SPRAYER TORC.



12. TUNGSTAN CARBIDE FLEXER WEDGE, IRANOL OIL Co.



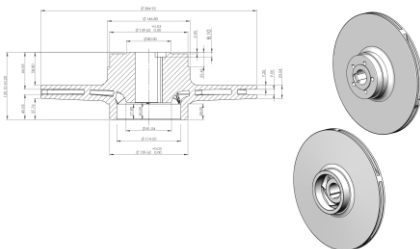
Our Clients

MANUFACTURING DEPARTMENT

14. FLENDER COUPLING, TYPE ARPEX ARP and ARS, KHARK PETROCHEMICAL Co.



15. GABBIONETA CENTRIFUGAL PUMP TYPE R 430 100 GM3 KHORASAN PETROCHEMICAL Co.



16. WORTHINGTON COMPRESSOR Discharge Valve Abadan Refinery



Our Clients

SUPPLY SECTION

The Raya Energy Group, with its expert commercial team stationed in locations such as Tehran, Istanbul, Dubai, and Toronto, has adeptly secured multiple agency agreements aimed at the Iranian market. These partnerships include:

JESCO Agent in Turkey with the permission to support Iran's market

COMER TEK Sole agent in Iran, Turkey, the UAE and Iraq

SAPAG VALVES Sole agent in Turkey

CTD Sole agent in Turkey

MILTON ROY

YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	MOBIN ENERGY	9831007	PUMP SPARE PARTS
1403	AMIRKABIR	340071	COMPLETE PUMP
1402	AMIRKABIR	9740093	DIAPHRAGM PUMP
1402	TABRIZ	0142086	DIAPHRAGM PUMP
1402	MOBIN ENERGY	9931466	COMPLETE PUMP
1402	FAJR PC	243411	PUMP SPARE PARTS
1402	TABRIZ	0242054	DIAPHRAGM PUMP
1402	TABRIZ	0242065	DIAPHRAGM PUMP
1402	SPEC	0242079	DOSING PUMP
1401	TABRIZ	0052024	Dosing pump
1400	FAJR ENERGY	0033403	DIAPHRAGM-O-RING
1400	FAJR ENERGY	0033407	METERING PUMP
1400	ACPC	69498	DOSING PUMP
1400	MOBIN	9930424	DOSING PUMP
1399	FAJR ENERGY	9933414	PUMP SPARE PART
1399	FAJR ENERGY	9933413	COUPLING



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	MAHABAD PC	40310387	MECHANICAL SEAL
1402	TABRIZ	0232019	MECHANICAL SEAL
1400	IRANOL	99202100613	COUPLING MEMBRANE
1400	IRANOL	99202100366	COUPLING MEMBRANE
1400	IRANOL	1400202100029	COUPLING MEMBRANE
1400	MAHABAD PC	9510086	MECHANICAL SEAL
1400	MAHABAD PC	9810872	MECHANICAL SEAL
1400	TABRIZ	0032029	MECHANICAL SEAL
1400	TABRIZ	9735030	MECHANICAL SEAL COMPLETE
1399	MAHABAD PC	9510208	DRY GAS SEAL
1399	IRANOL	98102100593	BELLOWS ASSY.
1399	IRANOL	98102100592	FLEXIBOX MECH. SEAL
1399	IRANOL	99202100012	VALVE SEAT JOINS
1399	IRANOL	99102100117	FLEXIBOX MECH. SEAL

SUPPLY SECTION

FLowsERVE

YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	FAJR PC	343103	CENTRIFUGAL PUMP
1403	FAJR PC	335812	MECHANICA SEAL
1403	FAJR PC	333103	SPARE PART PUMP
1403	AMIRKABIR	140043	CENTRIFUGAL pump
1402	PARS PC	140140378	VALVE
1401	JAM	952342	CENTRIFUGAL PUMP
1401	JAM	951481	MECHANICAL SEAL
1401	JAM	941226	CENTRIFUGAL PUMP
1401	JAM	900110	CENTRIFUGAL PUMP
1401	TABRIZ	0142013	CENTRIFUGAL PUMP
1401	JAM	950346	PNEUMATIC ACTUATOR
1401	S.P.G.C	0140015	O-RING
1401	AMIRKABIR	9940104	CENTRIFUGAL PUMP
1401	MARUN	970815	BALL VALVE
1400	TABRIZ	9942112	CENTRIFUGAL PUMP
1400	AMIRKABIR	9840424	PUMP SPARE PART

Gardner Denver

YEAR	CLIENT	INDENT NO	DESCRIPTION
1401	MOBIN	ENERGY	0130231, ATOMIZING
1401	MOBIN	ENERGY	ATOMIZING
1399	MOBIN	ENERGY	9830588, COMPRESSOR-BLOWER
1399	POGC	9950474	FILTER

PEARL JOINT

YEAR	CLIENT	INDENT NO	DESCRIPTION
1401	MAHABAD PC	9910360	ROTARY JOINT
1401	MAHABAD PC	40010262	ROTARY JOINT
1400	MAHABAD PC	9710525	ROTARY JOINT
1400	MAHABAD PC	9710513	ROTARY JOINT
1400	MAHABAD PC	40010301	PEARL ROTARY JOINT
1400	KHARG	05449	SPARE PARTS FOR COMPRESSOR

Our Clients

SUPPLY SECTION

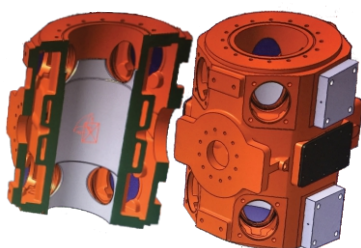
Eagle Burgmann Mechanical Seal
Tabriz Petrochemical Co.



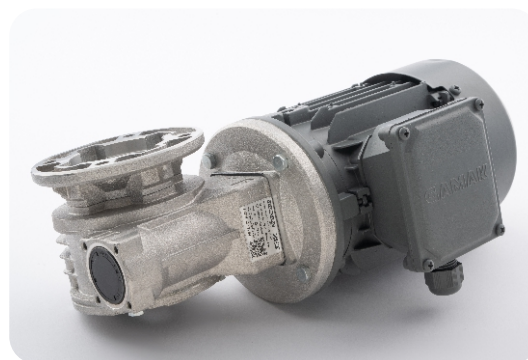
Aerzen Screw Compressor Mounting
Mahabad Petrochemical Co.



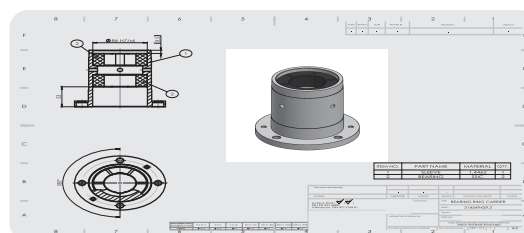
DRESSER-RAND Receptrocating
Compressor type2DBCD12-liner
Amirkabir Co.



Part for Milton Roy Diaphragm Pump
PO no. 1504209
Fajr Petrochemical Co.



KSB MAGNOCHEM CENTRIFUGAL
PUMP TYPE MKP 50-315
Tabriz Petrochemical Co.



YEAR	CLIENT	INDENT NO	DESCRIPTION
1402	MAHABAD PC	40011020	COMPLETE PUMP
1402	LALEH PC	4020173	KSB SISTO PNEUMATIC ACTUATOR
1400	TABRIZ	0042003	ETACHROM PUMPS
1399	MAHABAD PC	9510005	SPARE PART FOR PUMP

SUPPLY SECTION



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	AMIRKABIR	140043	CENTRIFUGAL pump



YEAR	CLIENT	INDENT NO	DESCRIPTION
1399	FAJR ENERGY	9933105	MECHANICAL SEAL



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	GHADIR PC	PF-1705	Dosing Pump



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	MAHABAD PC	40211055	SPARE PARTS FOR PUMP
1401	ILAM PC	010500	DOSING PUMP

Our Clients



SUPPLY SECTION



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	RAZI PC	212080	DOSING PUMP
1402	RAZI PC	0131926	CHEMICAL INJECTION PUMP
1402	SHIRAZ PC	0141053	DOSING PUMP
1402	GHADIR PC	1102096946000509	Dosing Pump
1402	ILAM PC	010396	DIAPHRAGM DOSING PUMP
1400	KHARG	95058	DIAPHRAGM PUMP
1401	SHIRAZ	0040557	VACUUM CHLORINATOR



AERZEN

YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	AMIRKABIR	0130026	SCREW COMPRESSOR
1403	AMIRKABIR	1401043	BLOWER
1402	MAHABAD PC	40210364	SCREW COMPRESSOR



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	SPEC	79929	BATTERY
1402	LORESTAN PC	9820541	BATTERY



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	TABRIZ, 0243125	TEMPERATURE	REGULATOR
1401	TABRIZ, 0043165	TEMPERATURE	REGULATOR
1399	MOBIN ENERGY	9970074	TEMPERATURE REGULATOR

SUPPLY SECTION



YEAR	CLIENT	INDENT NO	DESCRIPTION
1402	ILAM PC	01-010	COMPRESSOR
1402	KAVIAN PC	021278	PARTS FOR COMPRESSOR
1402	TABRIZ	242006	DIAPHRAGM PUMPS
1401	TABRIZ	37134	DIAPHRAGM PUMPS



FLOWSERVE & WORTHINGTON

YEAR	CLIENT	INDENT NO	DESCRIPTION
1402	SPEC	0142088	CENTRIFUGAL PUMP
1401	TORC	0180056	COMPRESSOR
1401	FAJR ENERGY	9733104	CENTRIFUGAL PUMP
1401	TABRIZ	9835215	CENTRIFUGAL PUMP



YEAR	CLIENT	INDENT NO	DESCRIPTION
1401	MAHABAD PC	40110598	GASKET & ORING
1401	MAHABAD PC	40110597	BUSH



YEAR	CLIENT	INDENT NO	DESCRIPTION
1403	TABRIZ	0058679	COMPLETE PUMP

Our Clients



SUPPLY SECTION



YEAR	CLIENT	INDENT NO	DESCRIPTION
1402	AMIRKABIR	01401013	SHRINKAGE PACKAGE UNIT
1402	AMIRKABIR	0140823	PALLETIZING PACKAGE



YEAR	CLIENT	INDENT NO	DESCRIPTION
1400	TABRIZ	0042040	RECIPROCATING AIR COMPRESSOR
1400	TABRIZ	0042021	CENTRIFUGAL COMPRESSOR
1401	MAHABAD PC	40110769	SCREW COMPRESSOR



YEAR	CLIENT	INDENT NO	DESCRIPTION
1402	MAHABAD PC	9910354	OIL SEAL
1402	MAHABAD PC	40011002	OIL SEAL
1401	MAHABAD PC	9810285	OIL SEAL
1400	MAHABAD PC	40020834	OIL SEAL



YEAR	CLIENT	INDENT NO	DESCRIPTION
1401	LORESTAN PC	9520255	FLEXIBLE ELEMENT
1401	ARYASASOL	71674	COUPLING
1401	ASPC	73543	COUPLING HUB
1401	TABRIZ	0042042	GEAR BOX
1400	KHARG	05282	SPARE PART COUPLING
1399	FAJR ENERGY	9936401	GEAR BOX
1399	FAJR ENERGY	9935803	GEAR BOX
1399	FAJR ENERGY	9945812	COUPLING
1399	MAHABAD PC	9810477	COUPLING



SAPAG
SAPAG VALVES

Tel : +33 (0)3 23 81 43 00
Fax : +33 (0)3 23 81 43 23
2 rue du Marais
80400 HAM
FRANCE

Ham, February the 28th 2024

To:
ENERGY ONYX
Cevizli Mah. Saraylar Cad.
DAP Vazo Plaza,
Dis Kapi No: 6, C Blok,
Kat 2, Daire 12,
Postal Code: 34846,
Maltepe / Istanbul / TURKEY

To whom it may concern,

Object: Manufacturer's Authorization Letter.

Dear Customers,

We, SAPAG VALVES, situated, 2, rue du Marais – 80400 in France, hereby affirm that M/S ENERGY ONYX Turkey are authorized to import and sell our products in Turkey to supply the industrial market following Goods, manufactured by us. JMC Butterfly valves rubber seated type & JHP double eccentric butterfly valves, Ball valves, & specific valves for pressure and cavitation solutions.

Those valves are dedicated for market such as:

- Water industry
- Oil & Gas industry
- Food and beverage processing
- Dry bulk conveying
- Paper mills
- Slurry handling etc..

We sell to Energy Onyx according to General Conditions of our contracts, with respect to the Goods offered.

Should you wish to have further clarification please do not hesitate to contact the undersigned.

Yours Sincerely,



[Signature]
Jean-Luc NDIKUMAMA,
Managing Director IPI MEA

Gsm Dubai : +33 (0) 50.40.11.656
Gsm France : +33 (0) 6.09.35.84.26
jean-luc.ndikumama@sapag-valves.com

SAPAG Valves au capital de 1001€ - Siège social : 2, rue du Marais 80400 HAM (France)
RCS Amiens 823 261 540 - SIRET 823 261 540 00012 - NAF 3320 C - TVA FR FR23823261540



Lutz-Jesco GmbH • Postfach 10 01 84 • D-30891 Wedemark

To:

Whom it may concern

Lutz-Jesco GmbH
Am Bostelberge 19
30900 Wedemark
Deutschland
Telefon
+49 5130 5802 0
Telefax
+49 5130 5802 58
e-Mail
info@lutz-jesco.de
Internet
www.lutz-jesco.de
Sitz der Gesellschaft
Wettlin
Registergericht
Münster
HRB 513479
Geschäftsführer
Hans Lutz, Jürgen Lutz

Manufacturer's Authorization

Date: 27th October, 2020

WHEREAS

We **Lutz-Jesco GmbH**, who are official manufacturers of Dosing equipments, having factories at Am Bostelberge 19, 30900 Wedemark/Germany, do hereby certify:

Onyx Enerji Company
Mr. Ali Sakhaei
Keremboy Sok. No.11-13 7.Kat D.6
Istanbul Atasehir Atatürk Mah.

to be our authorized representation to promote dosing equipments and spare parts in Turkey and in the regional area.

The activities of Onyx Enerji Company on our behalf consist in the active promotion of these products, their sales and after sales service and support.

We hereby extend our full guarantee and warranty in accordance of our General Terms and Conditions, with respect to the goods offered by the above firm.

This authorization letter is valid until further written notice from Lutz-Jesco GmbH.

For any questions and information please don't hesitate to contact us.

Best Regards

[Signature]
Robert Hauschke
COO

Lutz-Jesco GmbH



Disclaimers / Freigabe
Förmlich / Formell
Regeln / Regeln



CTD N.V.
Banque/Bank
Avenue Albert 1^{er} 111 • B-4030 Liège - Grivegnée (Belgium) • N°1 (32) 4 342 01 48 • fax (32) 4 341 33 03
Belgium - IBAN BE69 0891 0197 1479 - BIC OKCCBEBB • BNP Paribas Fortis - IBAN BE43 2300 1093 0001 - BIC GEBABEBB
KBC - IBAN BE35 4354 2567 2137 - BIC KREDBEBB

PARTNERS IN HARD PRECISION

CTD NV
Avenue Albert 1^{er}, 111
B-4030 GRIVEGNEE
BELGIUM
Tel: +32 4 3420 148
Email Address: info@ctdsa.be
Website: www.ctd-carbide.com

October 16, 2024

Ms Sinem Soyer
ONYX ENERGY
Altayesme District, Cami Street no. 21
Esas Maltepe Ofspark 6th floor, Room no. 633
34843 MALTEPE
Istanbul
Turkey

Dear Miss Soyer,

We, CTD, NV hereby confirm that your company, **ONYX ENERGY** has been appointed as non-exclusive DISTRIBUTOR in the territory of TURKEY for all CTD products and services.

This appointment shall be for a period of 1 (year) effective from November 1, 2024 to November 1, 2025 and must be renewed in writing before expiration.

Thank you.

Yours faithfully,

[Signature]
Luc van Loon
Managing Director

CTD NV/SA Carbide Tools & Dies
Avenue Albert 1^{er}, 111
B-4030 GRIVEGNEE
Tel: +32 4 342 01 48 • Fax (32) 4 341 33 03
T.V.A. BE 430.627.254

Nos conditions de vente sont appliquées à tous nos contrats et conventions. Elles sont déposées au Tribunal de Commerce de Liège.
Our general terms of sale are referred for all our contracts and orders. They are registered with the Commercial Court of Liège.
Siège Social / Corporate Mateneel 14 bus 011 - 2018 Antwerpen (Belgium) - RPR Antwerpen - TVA BE 430.627.254



COMERTEK s.r.l.
36030 S.Vito di Leguzzano Vicenza - ITALY
P.IVA 03795830243
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TO WHOM IT MAY CONCERN

Dear Sirs,

Re: **Manufacturer's Authorization**

This is to confirm that the following company:

ONYX ENERJI COMPANY
Mr Ali Sakhaei
Merkez mah. Abide-i hürriyet
Cad. Black Out Ismerkezi No. 211 Ic
Kapi no. 64 Sisli
ISTANBUL
TURKEY

IS our Sole Representative in the areas of UAE, IRAN and TURKEY and are duly and fully authorized by us to collect any tenders/enquiries covering materials in our scope of supply, as well as to submit our quotations, to discuss and/or negotiate, on our behalf, any purchase order any estimated Company would like to place with us.

Onyx Enerji Company will promote our products :spares for chemical and petrochemical equipment related to machines supplied by us in the past.

We thank you very much in advance for the cooperation you will kindly reserve

and looking forward to improving our business relations with you.

This Authorization letter is valid for a period of 2 years, unless different written notice from one of the two parties for cooperation interruption.

San Vito di Leguzzano 02.03.2022

Yours Faithfully

[Signature]

COMERTEK s.r.l.
Via Vicenza, 13
36030 SAN VITO DI LEGUZZANO (VI)
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R & D

The R&D sector is a vital component of a company's structure. Its importance lies in developing innovative products, methodologies, and technologies. Within this division, various roles and designations exist, each playing a pivotal part in originating new products, technologies, and services. The chief aim of the R&D team is to conduct research that may result in significant innovations and ideas, thus helping the business maintain a competitive edge in its industry.

Engineering Failure Analysis 166 (2024) 108877



Contents lists available at ScienceDirect

Engineering Failure Analysis

journal homepage: www.elsevier.com/locate/engfailanal



Investigation of shaft and segment failure in co-rotating twin-screw extruder

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ARTICLE INFO

Keywords:

Twin screw extruder
Shaft
Low-cycle fatigue
Failure
Segment

ABSTRACT

This research is focused on identifying the reasons behind the failure of the shaft and screw segment associated with the ABS plastic material co-rotating twin-screw extruder. These steel parts failed during production and after only 12 days of operation. To understand the failure causes, their chemical composition was examined initially. The results showed that the chemical composition of the analyzed parts meets the design and standard of BSEN 4957 (2018). Subsequently, a detailed study of the fracture cross-section of both pieces was conducted, along with microscopic and mechanical tests, to gather comprehensive information on the failure reasons. The findings indicate that the initiation of the cracks is linked to the presence of coarse carbide deposits, leading to micro-cracks on the surface of the shaft. Under torsional-bending cyclic loading, these cracks expanded as low-cycle fatigue fractures. When the fatigue crack reached its critical extent, rapid and abrupt crack propagation and failure ensued. Furthermore, defects like holes and coarse sediments within the segment also contributed to the conditions conducive to rapid crack growth and failure. In conclusion, to prevent future accidents and issues with comparable equipment, various safety measures and recommendations were introduced.

1. Introduction

A twin-screw extruder (TSE) is specialized equipment in numerous manufacturing processes, such as in the petrochemical, biomedical, rubber and elastomer, food, reprocessing, and recycling industries. In response to rising demands for new, finely structured, and higher-quality products, this equipment was introduced into the food industry in the 1970s because single-screw extruders were no longer adequate [1]. Nowadays, many companies (approximately 50 No.) around the world can produce small or medium-sized screws (i.e. < 120 mm). Nevertheless, large and super-large screw machines have been manufactured only by five corporations [2]. Generally, based on the preferred quality of compound granules and production rates, several sectors in TSE can be identified, such as material conveying (intake), polymer mollifying (melting), vacuum zone (venting), repartition and dispersion (kneading), and evacuation (metering). For example, the pre-blended ABS feed (polymer powder and additives) is continuously fed by a volumetric feeder to the extruder where it is melted by heating and pressurizing, kneading, and finally extruding through holes in strands [3]. A TSE machine has some subsystems for cooling, heating, transmission, and control of granules. The main parts of these include a feeder, two shafts and segments, barrels and closed barrels, a drive motor, a die plate, a gearbox, and a coupling. Fig. 1 shows the internal screw geometry and the whole machine. In a co-rotating twin screw extruder, an electromotor powers the gearbox. This mechanical power is transmitted through a coupling mechanism. The gearbox power transmission system includes a mechanism with

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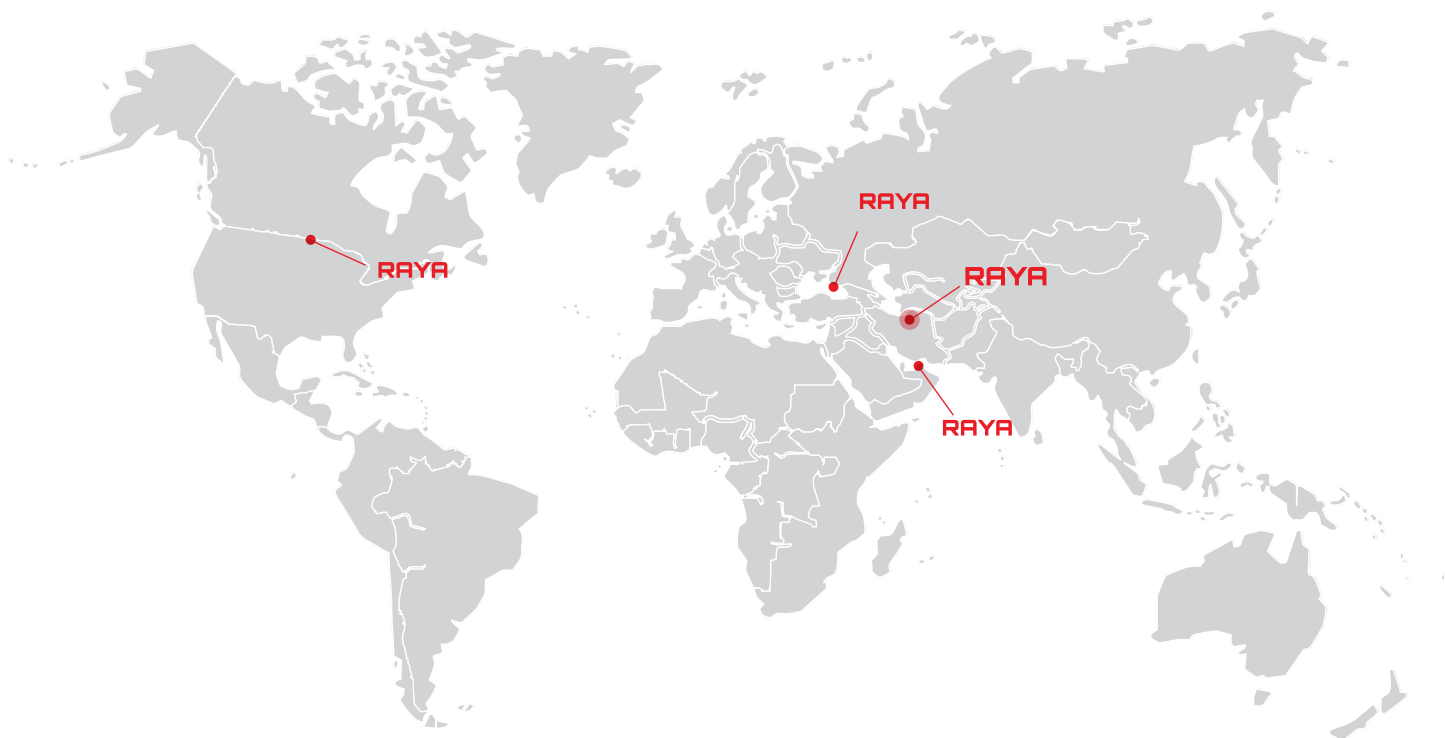
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<https://doi.org/10.1016/j.engfailanal.2024.108877>

Received 2 July 2024; Received in revised form 9 September 2024; Accepted 10 September 2024

Available online 12 September 2024

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