



Technology that **makes its mark**

► Our technology. Your success.

Pumps • Valves • Service



Manutenzione macchine rotanti



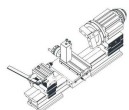
- **Service Center KSB in Italia**
- Ricambi originali – come identificare la pompa
- Riparazioni macchine rotanti – reverse engineering
- Metal Additive Manufacturing
- KSB Guard
- Tenute meccaniche KSB



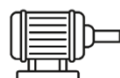
Struttura



Team
(98 blu collars, 37 admin)



Machining
26 turning machines, 15 milling machines, drilling machines



4 Balancing machines
(up to 6 m shaft length)



Workshop surface
approx 8000 m² in total

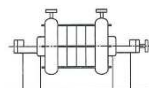


Crane capacity
(10 tons, 5 tons, 3,2 tons)



Certifications
(ISO 9001, ISO 14001, ISO 45001)

Attività



Service for Pumps



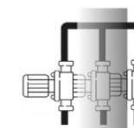
Service for mechanical seals



Motor winding
LUV Pumps



Service for Valves
(up to DN 3000)



Test bench for safety valves, Test bench for mechanical seals



On-site Mechanical Services
Leakage Sealing, Hot Tapping, Line Stopping, On-site Machining, Spark Erosion

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Come identificare la pompa?

Per individuare la parte di ricambio corretta è necessario comunicare il **tipo di pompa** e il **numero di serie**.


Targa dati

The serial number is on the name plate of your pump:

e.g. **3-761-420984**

or

9970428626 000100 2

 Aktiengesellschaft			
Ord-No.		Year	1982
Ser.-No.	3-761-420984	Type	CPK-CM 40-250
Item-No.		Test pressure	kPa
Q	m ³ /h	H	m
n	1/min	t	°C
ρ	kg/dm ³	MAWP	kPa/°C
Shaft seal			
Bearings			
Impeller Ø mm		max.	min. rated
standard / 1 st stage			
2 nd stage			

The pump type is also on the name plate:

e.g. **CPK-CM 40-250**

Come identificare la pompa?

Per individuare la parte di ricambio corretta è necessario comunicare il **tipo di pompa** e il numero di serie.



Come identificare la pompa?

Il **numero di serie** di trova anche stampato sulla flangia di aspirazione della pompa.





Servizio Espresso Ricambi per l'Europa

Grünstadt



KSB SupremeService | 2025

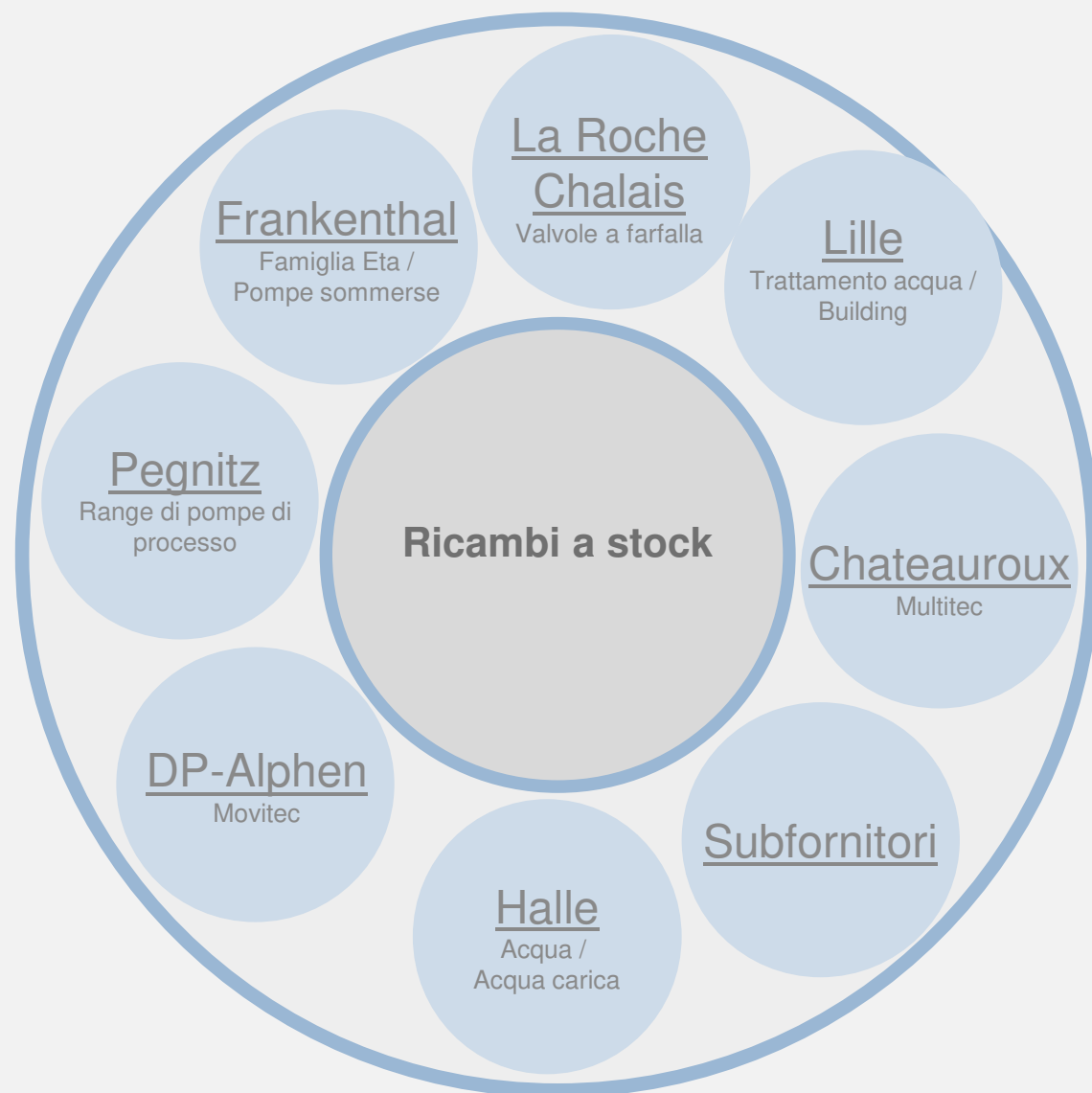
Grünstadt (Germania)

Obiettivo:

Consegna del ricambio in tutta Europa in **48h** dall'inserimento dell'ordine.

Eccezioni:

I siti produttivi forniscono i ricambi direttamente ai clienti solo quando sono prodotti su commessa o in caso di **requisiti speciali** del cliente.



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HGC 5/10
HGC 4/7 SIGPRO



CHTA 95/5
CHTA 50/5



Hayward Tyler BCPs



KSB SupremeServ

**Pompe alimento e
pompe di
circolazione caldaia**



LUV

Pompe fuori produzione e pompe NON KSB

Pompa verticale Termomeccanica per la circolazione di acqua di raffreddamento.



Retrofit da tenuta a baderna in tenuta meccanica di pompe tipo: HCN, HDB, HDA



Pompe NON KSB

Reverse Engineering di pompe NON KSB.

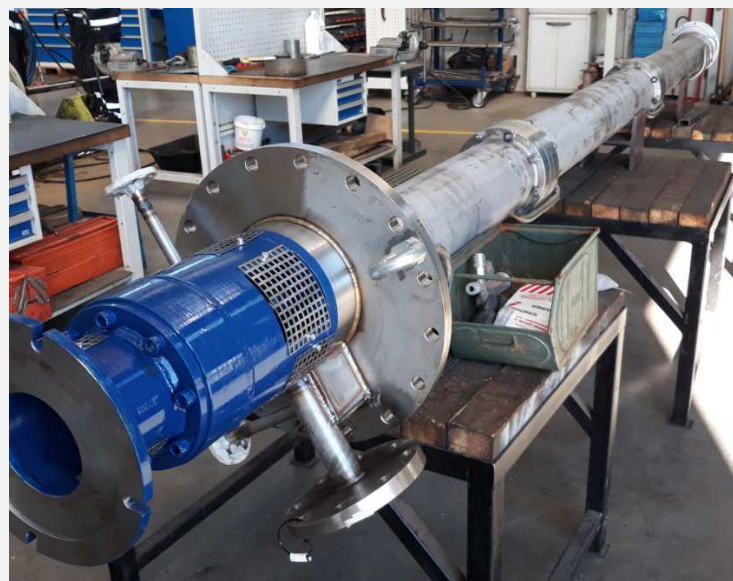
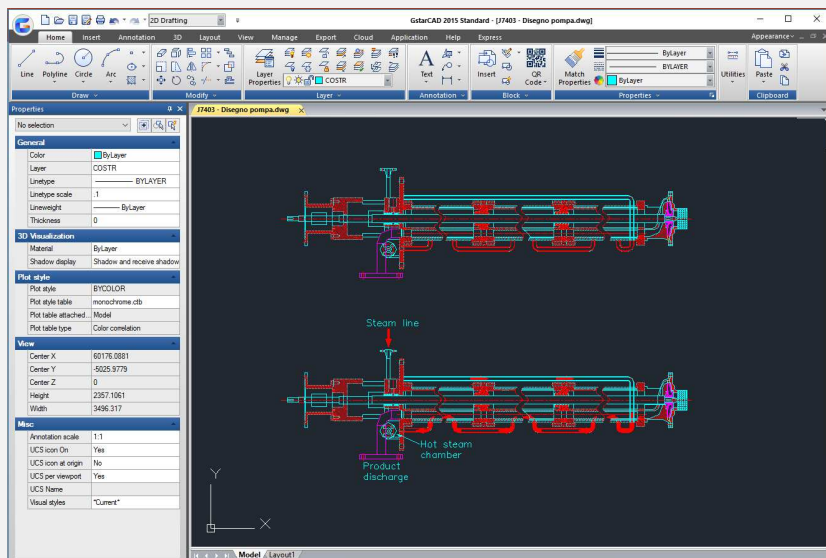
Pompa verticale monostadio di un costruttore non KSB e non più disponibile sul mercato.

Fluido pompato: Zolfo liquido



Pompe NON KSB

- Miglioramento del materiale da ghisa ad AISI 316L: incremento della resistenza chimica alla corrosione.
- Nuovi cuscinetti radiali



Soluzioni di reverse engineering

Realizzazione di ricambi (fusi o lavorati) ove la documentazione tecnica non è disponibile...

- Costruzione rapida di parti e assiemi completi
- Può essere applicato a prodotti KSB e NON
- Pompe, valvole e altre macchine rotanti di tutti i produttori
- Ottimizzazione sviluppata da team di ingegneri





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Fusione o stampa 3D

Measuring of sample parts



In case a drawing is not available, the geometry of the part is measured and digitised with highly specialised equipment. A sample part is needed, even if it suffered extensive wear.

3D Design



Our experts then rationalise the measured data into a 3D model, which ensures that we meet the original fit, form and function. Metallurgical, design or hydraulic upgrades are provided, if required.

Moulding



3D Printing

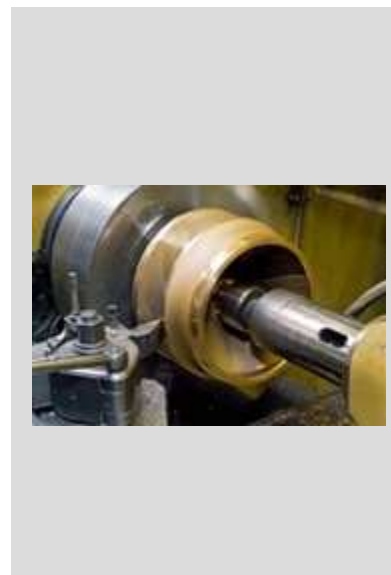
Up: Based on the 3D model the mould is created using a sand printer or conventional patterns. In the next step the raw part is cast.

Down: Alternative process: Based on the 3D model the raw part is produced with a 3D printer using the additive manufacturing process. Metallic powder is selectively melted by a laser beam layer by layer.

Casting






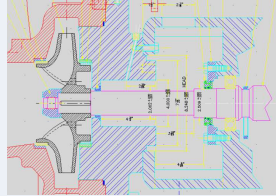
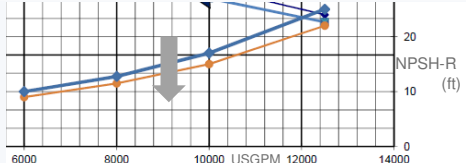
Machining



Depending on the part type the final process steps are performed to complete the part: machining, balancing, testing.

We offer value-added engineering to optimise product reliability.

Our engineering staff can improve your mean time between repairs (MTBR) and reduce your maintenance costs by developing quality solutions that meet your needs and expectations.

Engineering type	Description		
<p>Reverse engineering</p>	<p>We work together with you to provide a direct replacement or upgrade to maintain a safe and reliable operation. The objective is to “meet or exceed” the original fit, form and function of your part or pump.</p>	 <p>Measurement of an impeller</p>	
<p>Metallurgical engineering</p>	<p>We assist you with upgrading the materials to enhance your equipment reliability. Our foundry network is designed for maximum flexibility to support your needs.</p>	 <p>Before: cast iron with corrosion</p>	 <p>After: upgrade to 316L</p>
<p>Design engineering</p>	<p>We upgrade your casing, seal chamber, bearing housing or your existing API pump to the latest edition of API 610. We standardise the power frame upgrades to maximise parts interchangeability.</p>	 <p>Upgrade of a seal chamber to API 610, 11th edition</p>	
<p>Hydraulic engineering</p>	<p>We use Computational Fluid Dynamics (CFD) to optimise the hydraulic fit of a pump to extend the MTBR (e.g. by NPSHr reduction) and to reduce the energy costs of operating the pump.</p>	 <p>Reduction NPSHr</p> <ul style="list-style-type: none"> — before — after 	

KSB Additive Manufacturing Testing and Consulting Centre

KSB is the **first company worldwide** being certified for additive manufacturing of materials and semi-finished parts for pressure equipment.

KSB owns and operates full-featured Additive Manufacturing (AM) facilities.

KSB is actively contributing to new regulations, norms, and specifications required for AM (DIN, EN, and ISO).

KSB has extensive AM experience and competence in:

- Material characterisation, development and qualification
- Assessment of parts made by traditional and AM technologies
- Testing and qualification in our accredited lab (DIN EN 17025)
- Quality assurance for AM (developed our own QA programme)
- Part production from multiple steel grades
- Customer field testing of AM parts
- Part redesign and construction
- Worldwide R&D projects





KSB Additive Manufacturing Testing and Consulting Centre

Caratteristiche principali:

Materiale Standard

Utilizzabile per la maggior parte delle applicazioni:

1.4404 (316L)

In sviluppo:

2.4856 (Inconel/alloy 625)

Altri materiali sono disponibili su richiesta

Dimensioni Massime:

400 x 400 x 400 mm

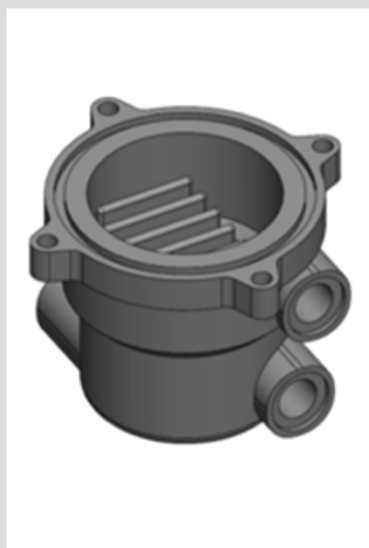
Stampa 3D: ESEMPI

Esempio 1:

Il cliente aveva bisogno di uno scambiatore ad olio per una pompa critica nel minor tempo possibile.

Soluzione:

Il nuovo design sviluppato per la stampa 3D ha permesso una riduzione di peso ed un miglior scambio termico. Consegna in 2 settimane.



Original part



New design



Esempio 2:

Girante per pompa di processo critica in contesto di emergenza

Soluzione:

Design e costruzione con stampa 3D: consegna della girante nuova in 1 settimana.

Ready to get a quotation for replacement of parts? It's easy.



Make images of all sides of the part and especially of any specialties, e.g. worn areas.

Measure and document dimensions of the part: height, depth, "box sizes" is sufficient.

If possible, state the **approximate weight** of the part.

Identify and document **part material**.

State the desired **quantity**. The higher the quantity of parts – the lower the part price.

Part has to be provided for measurement at time of order.
In case engineering services are requested, requirements must be clarified.

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KSB Guard - Soluzione per un monitoraggio Smart

Componenti



Funzionamento

- 1 **Sensors:** Records data directly at the pump
- 2 **Transmission unit:** Transmits data to the gateway
- 3 **Gateway:** Transfers data via mobile network to KSB Cloud
- 4 **Web portal and app:** Provide data and further information

Prodotti & Servizi

- KSB Guard per installazione a secco (include applicazioni ATEX)
- KSB Guard pompe sommergibili e mixer
- KSB Guard servizio di monitoraggio
- KSB Guard data interface

KSB Guard - Soluzione per un monitoraggio Smart

Benefici:

1. Operational reliability and transparency

With KSB Guard, your customers have an overview of the condition of all machines at any time.

- *More than 5% of all pumps equipped with KSB Guard show abnormalities from the first measurement.*

2. More efficient maintenance of the plant population

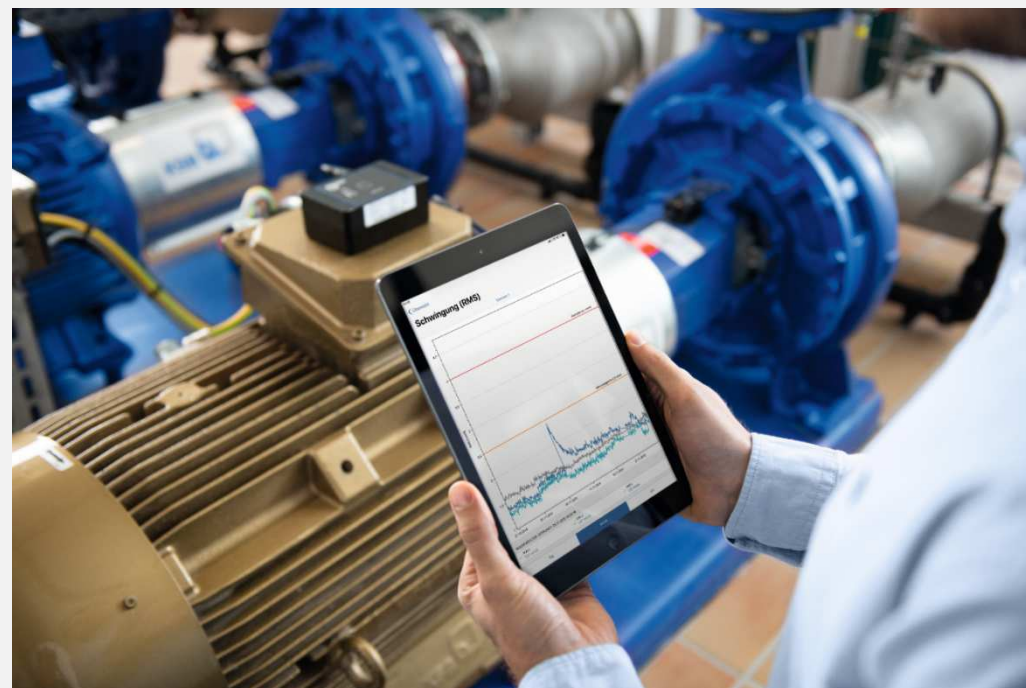
Based on concrete condition data, maintenance measures can be planned and carried out more efficiently.

- *More than 20% of the pumps equipped with KSB Guard were checked or repaired as required based on the measurement data.*

3. Connectivity with existing systems

KSB Guard ensures integration into existing systems through standardized interfaces.

- *Complete compatibility through standardized interfaces.*



KSB Guard - Soluzione per un monitoraggio Smart

Benefici:

4. Data-based optimization instead of gut feeling

KSB Guard provides the data basis for systematic, rational and objective decisions, e.g. for potential energy savings.

- *75% of all pumps are not operated at the optimal operating point.*

5. Unbeatable cost-benefit ratio:

KSB Guard offers an excellent option to avoid expensive system failures with little effort.

- *70% of unplanned system downtimes can be detected in advance by KSB Guard and thus avoided.¹*

6. Suitable for all pump types and rotating equipment – regardless of manufacturer

KSB Guard offers a uniform solution for the entire system population.

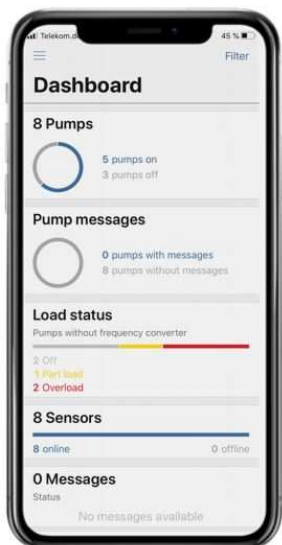
Competent support & quick response

KSB SupremeServ is by the customer's site with KSB Guard 24/7.



¹ VDMA (2018): Leitfaden. Investitionsrechnung für Digitalisierungsprojekte und Industrie 4.0 Vorhaben

KSB Guard - Soluzione per un monitoraggio Smart



The KSB Guard app & its advantages: Access to data any time and anywhere

- The most important information about the plant can be seen at a glance – including warnings and messages
 - Information about a machine at a glance
 - Operating data: Temperature, vibrations, load condition, operating hours, etc.
 - Maintenance overview
 - Documentation: Sectional drawing, data sheet
- Correlations become clear: Comparison of several graphs

Access test account KSB Guard (limited authorization):

User name: ksbguard-info_de@ksb.com / ksbguard-info_en@ksb.com

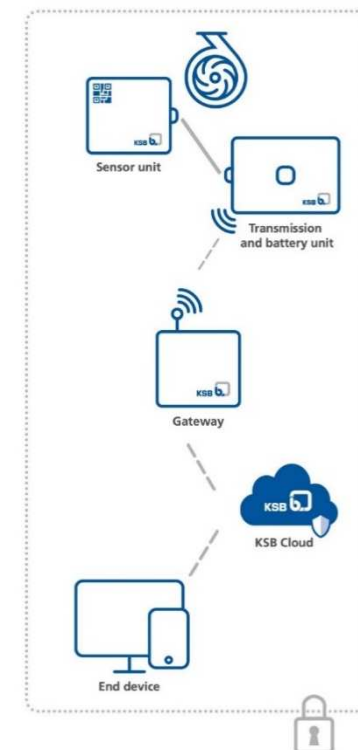
Password: infoGuard#18

Data security

- From the KSB Guard transmission units, the temperature and vibration data is sent TLS-1.2 encrypted via MQTT-SN to the KSB Guard Gateway.
- KSB Guard Gateway then sends the data to the KSB Cloud via the generally secured mobile network.
- The data can only be accessed with personal log-ins via https (SSL).

Argumentation

- End-to-end encryption: *KSB Guard offers complete security for measured data!*
- Use of German server locations for data storage
- Servers comply with the highest security requirements (ISO 27001, C5, CSA, PCI and others)
- No access by third parties possible: Company data cannot be accessed

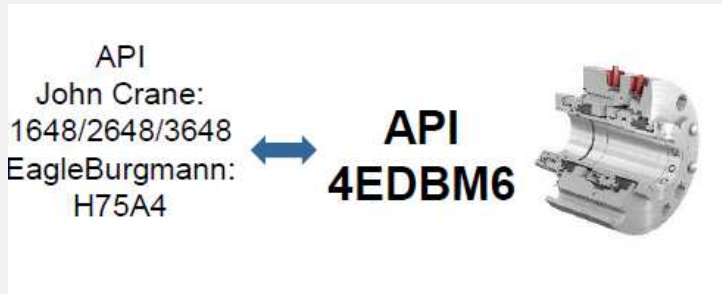
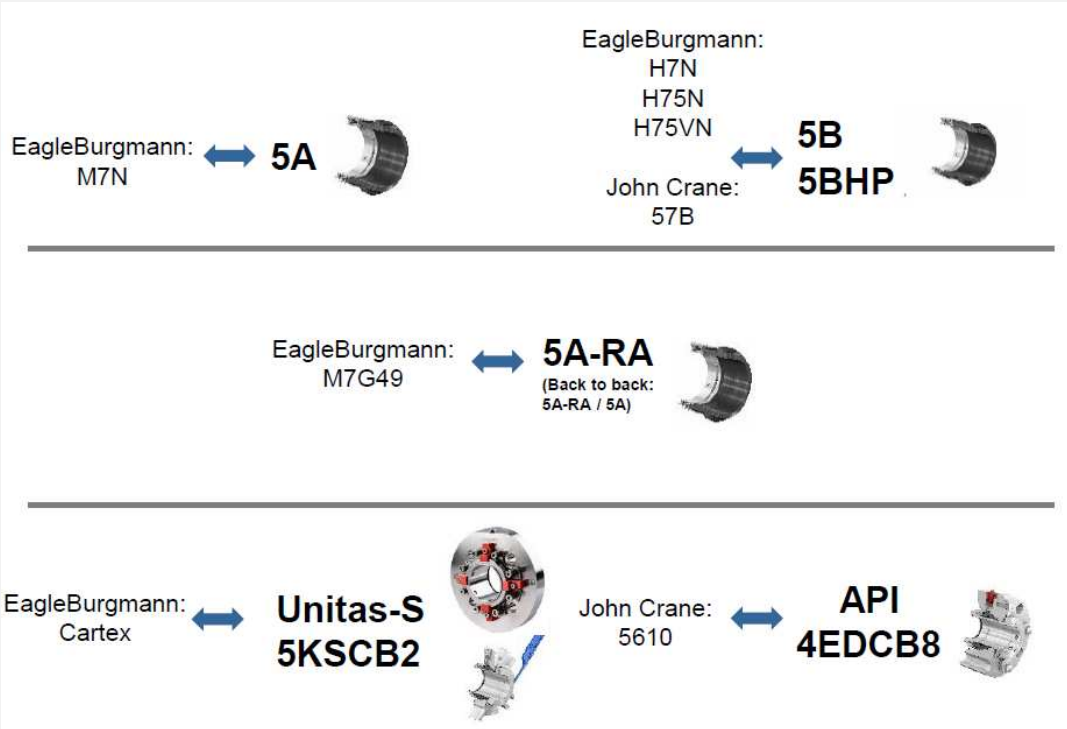


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Fornitura di tenute meccaniche

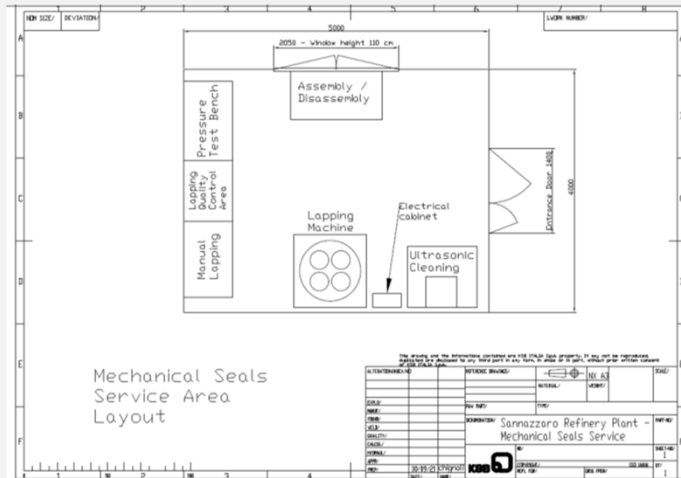


Fornitura di tenute meccaniche nuove e Service

Accordo quadro con



per l'assistenza e la revisione.



Service di tenute meccaniche

- Riparazione di tutta la gamma di tenute meccaniche KSB
- Riparazione di tenute non KSB
- Test finale pre-consegna
- Preparazione di report di revisione (a richiesta)
- Implementazione di migliorie e ottimizzazioni



Servizi meccanici specialistici

- **Servizi Meccanici Specialistici**
- Fori in pressione (Hot tapping) e stop di linea (Line Stopping)
- Eliminazione perdite (Leak sealing)
- Serraggi a carico controllato e a coppia controllata
- Elettroerosione
- Service Valvole
- Taratura valvole PSV

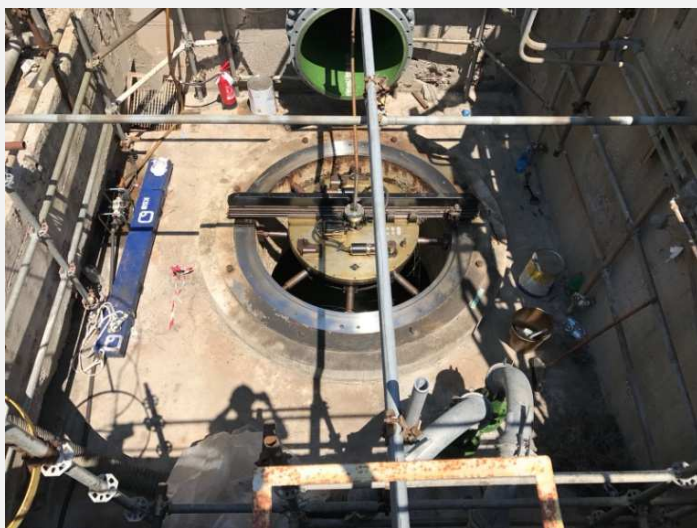


Servizi Meccanici Specialistici e attività on-site

- Torniture frontali, interne o esterne di elementi di impianto o di apparecchiature
- Realizzazione o ripristino di sedi di tenuta (RF, RTJ, a disegno) su piping o apparecchiature
- Alesature di fori passanti o ciechi
- Rettifiche di sedi di tenuta o piste di rotolamento
- Forature e maschiature

Servizi Meccanici Specialistici e attività on-site

- Fresature piane o a disegno (su parti di apparecchiature, basamenti di pompe, compressori o turbine)
- Distruzione di prigionieri
- Taglio e cianfrinatura di tubazioni



Basamento pompa verticale
tipo SEZ



Basamento pompa HCN

Rimozione di prigionieri



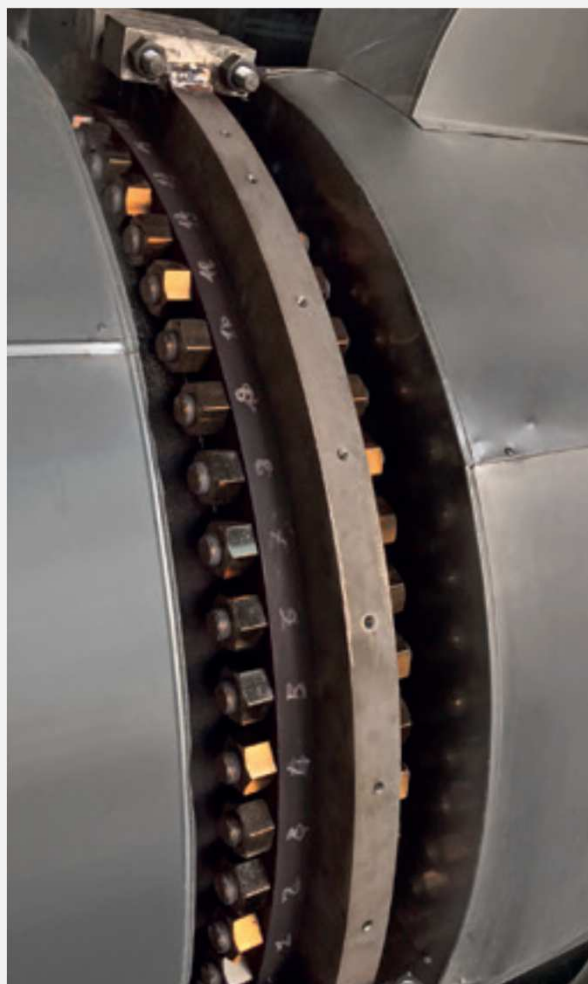
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**Valvole,
accoppiamenti
flangiati,
tubi e raccordi saldati**

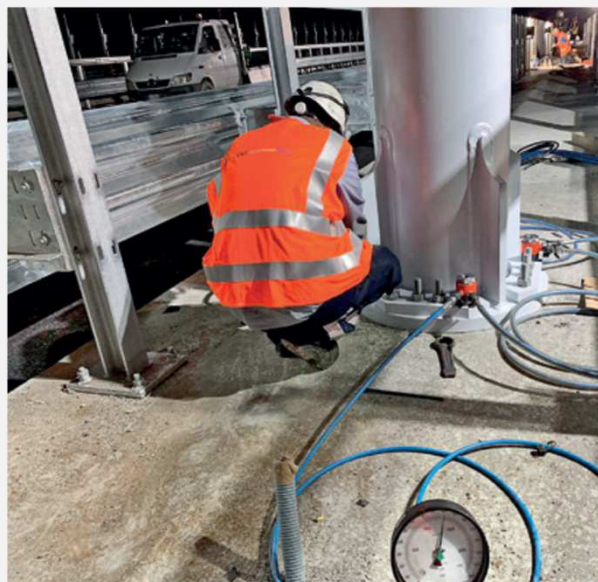


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Serraggi Controllati

Serraggio certificato dei bulloni sui piantoni dei pali presenti a Genova sul Viadotto Genova San Giorgio progettato da Renzo Piano (Ex Ponte Morandi)



Servizi meccanici specialistici

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Elettroerosione



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Service Valvole

- Retrofit di valvole on/off, non-ritorno
- Manutenzione di valvole di regolazione
- Manutenzione di attuatori elettrici e pneumatici
- Manutenzione/taratura ed eventuale fornitura di accessoristica (posizionatori, filtri riduttori, elettrovalvole)
- Collaudo finale



Servizi meccanici specialistici

- Servizi Meccanici Specialistici
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- Eliminazione perdite (Leak sealing)
- Serraggi a carico controllato e a coppia controllata
- Elettroerosione
- Service Valvole
- **Taratura valvole PSV**

Taratura PSV

- Revisione e taratura di valvole di sicurezza di tutte le marche (con utilizzo di ricambi originali o, ove non compatibili con le esigenze d'impianto, eseguiti internamente).
- Certificazione eseguita con ente (INAIL, ATS)
- Possibilità di eseguire taratura e certificazione on-site con Trevitest

