



Environmental technology



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WASTE-TO-ENERGY SOLUTIONS

In a growing world, where the conventional forms of energy are fast moving towards extinction and contributing to greenhouse effect and global warming, the need to innovate and recycle waste as renewable source has become crucial for our future.

Waste-to-energy is the generation of energy in the form of heat or electricity from waste.

With over 60 years experience in the design, manufacturing and commissioning of gear reducers and gearmotors, Rossi has become a power transmission leader in the waste recycling sector.

Rossi has forged many strategic partnerships with established recycling and waste treatment companies and original equipment engineering firms in this sector and throughout the world.

Rossi's smart solutions, thanks to product designed around modularity, robustness and reliability, help customers to minimize Total Cost of Ownership of plants, reducing maintenance costs and risk of process downtime as well as enhancing energy saving, also thanks to long life lubrication helping achieve environmental care related goals and maximizing energy efficiency benefits.









SOLUTIONS FOR WASTE WATER TREATMENT

With a growing world population and access to clean water becoming more and more difficult, waste water is now a valuable resource. There are many good reasons to consider reusing biologically treated municipal and industrial waste water:

Increase water resources, reduce intake of new water and limit effluent flow loads to sewers.

Reclaimed water can be used for numerous applications e.g. industrial process water, cooling towers and wash water; surface irrigation of crops, vineyards and golf courses; recreation lakes, wetlands, wildlife habitat and stream augmentation and ground water recharge.

The application of Rossi state of the art products allows to reduce maintenance costs and risks of process downtime as well as to enhance energy saving.



SOLUTIONS FOR SCREENS & SCRAPERS

Excessive water on conveyor systems can lead to a number of issues including uncontrolled material movement, slough back, spillage, as well as material degradation. These issues often result in unplanned downtime and additional costs due to clean-up, equipment damage and corrosion. As a principle supplier to original manufacturers in the waste treatment processes, Rossi smart and efficient products are designed around modularity, robustness and reliability, to ensure proper Total Cost of Ownership of dewatering treatment systems, enhancing energy saving and reducing maintenance costs.

Thanks to Rossi's efficient products, energy consumption is reduced.



SOLUTIONS FOR
SCREENS



SOLUTIONS FOR
SCRAPERS



Type: Bevel helical gear unit
Catalog: G



Type: Coaxial gear unit
Catalog: E



Type: Planetary gear unit
Catalog: EP



SOLUTIONS FOR CLARIFIERS & THICKENERS

Objectives of biological waste water treatment are to stabilize the organic matter and to reduce the amount of dissolved phosphorus and nitrogen in the final effluent.

Rossi's comprehensive product range offers some of the best mechanical performance in terms of torque to mass ratio, thermal capacity and reliability, enabling Rossi's products to outperform competitors in applications such as clarifiers, thickeners and urban waste water treatment.

Rossi's smart design, robustness and reliability reduce downtime, lower maintenance cost and enhance energy saving giving plant operators a low cost smart solution.



SOLUTIONS FOR
CLARIFIERS



SOLUTIONS FOR
THICKENERS



SOLUTIONS FOR
WASTE WATER
TREATMENT



Type: Bevel helical gear unit
Catalog: H



Type: Bevel helical gear unit
Catalog: G



Type: Planetary gear unit
Catalog: EP



SOLUTIONS FOR AERATORS

Biological waste water treatment is carried out in aeration tanks in which water is mixed with activated sludge.

Aeration process adds oxygen to the waste water and allows other gases trapped in the waste water to escape.

The activated sludge includes sludge particles produced by the growth of microorganisms in aerated tanks as a part of the activated sludge process to treat waste water.



SOLUTIONS FOR AERATORS



Type: Bevel helical gear unit
Design for agitators and
aerators
Catalog: G



Type: Coaxial gear unit
Catalog: E



SOLUTIONS FOR PRESSES

Filter and screw presses are simple and efficient solutions for high performance dewatering of sludge from water and waste water treatment, biogas residue and industrial slurries.

They are characterized by moderate speed, minimal supervision plus low power, noise and vibration levels.

High uptime, easy maintenance and cleaning during operation are other benefits.

The Rossi range allows for a high level of flexibility through optional accessories and auxiliary equipment, which means cost can be controlled and every product engineered to suit individual needs both technically and commercially.



SOLUTIONS FOR
BELT PRESSES



SOLUTIONS FOR
SCREW PRESSES



Type: Planetary in-line gear
unit combined with bevel
helical gear unit
Catalog: EP, G



Type: Bevel helical gear unit
Catalog: G



Type: Planetary gear unit
Catalog: EP



Type: Coaxial gear unit
Catalog: E



SOLUTIONS FOR PUMPS

Every part of the industrial process is being tightly controlled and regulated to ensure proper environmental controls are being adhered to. From clean drinking water to the residual waste material every process requires a drive that will ensure reduced cost of ownership through every process. Today, every process is considered part of the solution as very often what was once waste is now a critical component of another process. Sewage sludge for example is an organic and renewable fuel source that can be used to power the installation energy requirements. Our helical and bevel helical gear units with cooling coils are regularly used in driving high speed/power pumps, providing a viable solution for both mechanical and thermal constraint. Looking back at more than 60 years of Rossi know how and strategic partnerships in the management of waste water, Rossi is able to offer the right drive solution for almost every waste water process.



SOLUTIONS FOR HOSE PUMPS

SOLUTIONS FOR SCREW PUMPS



Type: Planetary gear unit
Catalog: EP



Type: Coaxial gear unit
Catalog: E



Type: Bevel helical gear unit
Catalog: G



Type: Bevel helical gear unit
Catalog: H

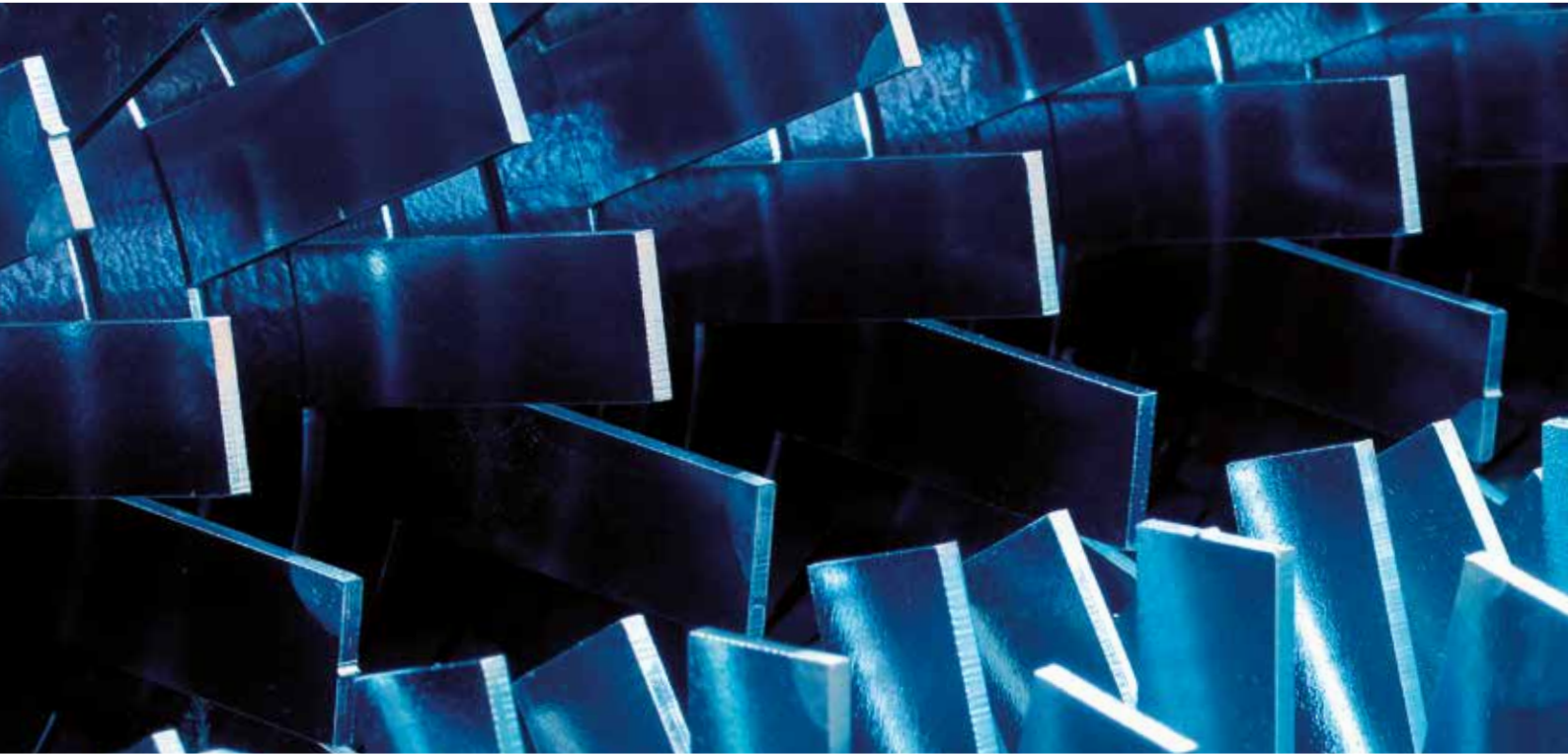




SOLUTIONS FOR WASTE RECYCLING PROCESSES

Waste-to-value processes enhance mill's profitability by recycling the mill waste products. Such processes are the source of renewable energy (gas and oil) and valuable by-products, such as aluminium and bio-char. Rossi modular gear unit design with scalable sizes can be adapted to the waste streams, featuring innovative technologies, processes, and equipment for the conversion of waste into valuable fuels.

All Rossi gear units have been designed to assure excellent, reliable and long lasting mechanical performance, resulting in reduced operating costs and long life.

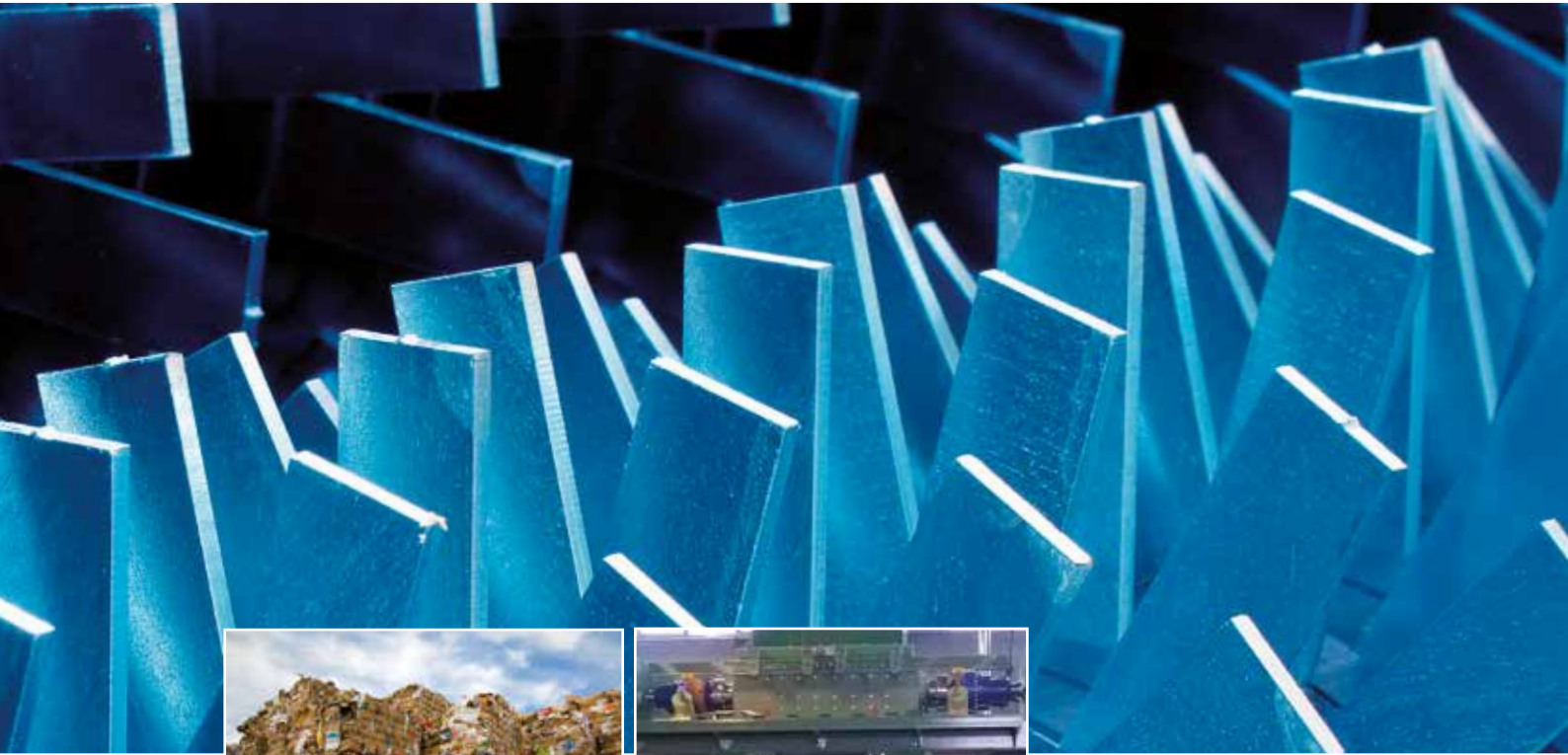


SOLUTIONS FOR SHREDDERS

Depending on the requirements, pulper rags recycling plants include several shredding stages in order to break down the stubborn rags properly. The robust machine technology with its very hard wearing cutting gear releases the metals (accounting for up to 40% of the content) completely. Impurities are separated into different fractions by subsequent separation processes.

This waste can be burnt to create energy to drive power stations and thereby reduce the need to burn fossil fuels or even sustainable wood chip replacement.

Rossi gear units with their modular system designs allow tailor-made solutions for the specific waste systems.



SOLUTIONS FOR
PULPER RAGS



SOLUTIONS FOR
TIRE SHREDDERS



Type: Bevel helical gear unit
Catalog: H



Type: Bevel helical gear unit
Catalog: G



Type: Planetary gear unit
Catalog: EP



Type: Coaxial gear unit
Catalog: E



SOLUTIONS FOR SORTING & SEPARATION

Waste sorting and separation combines conveyor and shredding systems: separation units according to the specific weight of the materials; screening systems; ferrous and non-ferrous metal separators; inert material processing (separation of metals, very ferrous and non-ferrous fractions as well as extraneous materials such as batteries or electronic scrap, for example).



SOLUTIONS FOR CONVEYORS

SOLUTIONS FOR SORTING SYSTEMS



Type: Bevel helical gear unit
Catalog: G



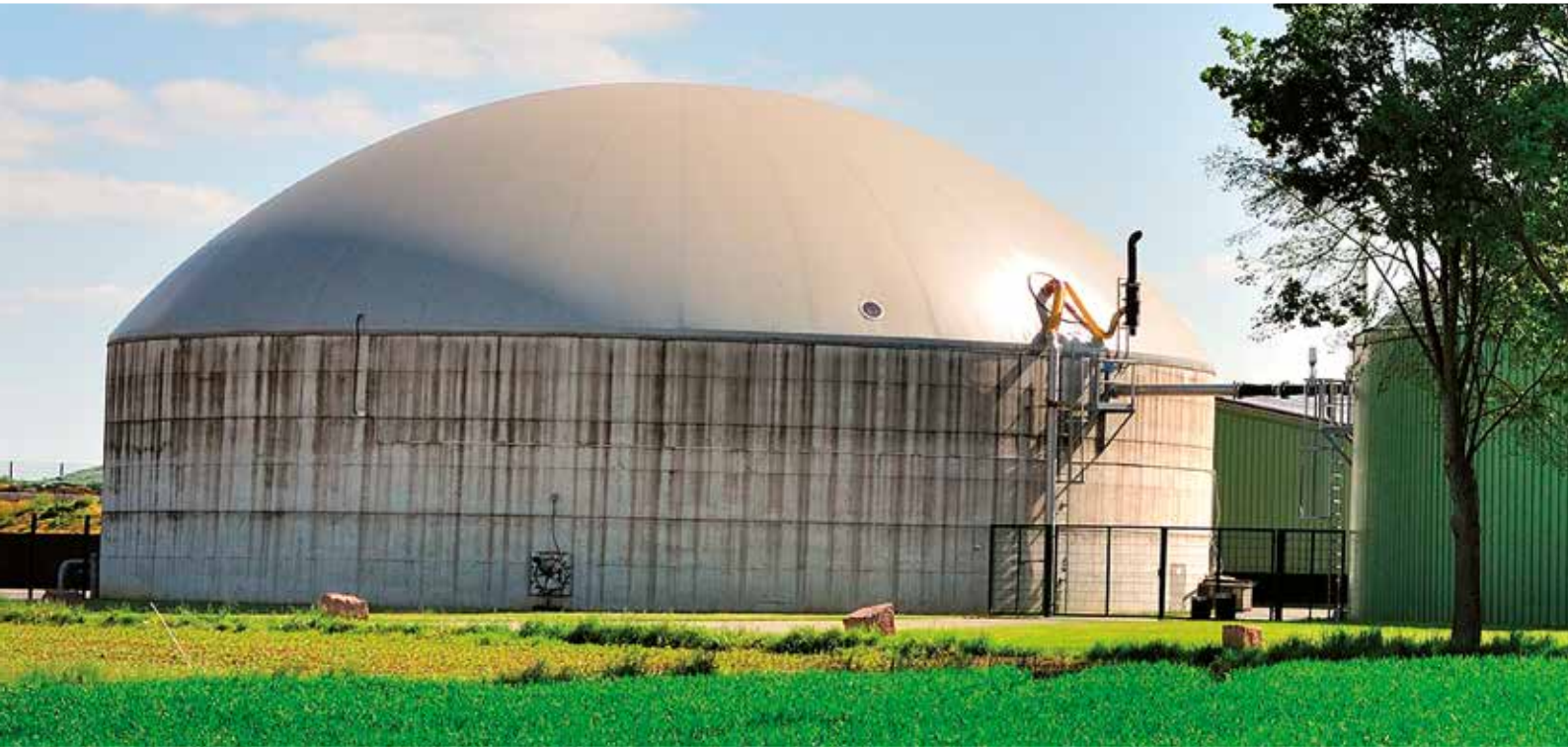
Type: Planetary gear unit
Catalog: EP



Type: Worm gear unit
Catalog: A



Type: Coaxial gear unit
Catalog: E



SOLUTIONS FOR BIO-ENERGY

Bio-energy is a renewable energy source created from natural, biological sources. Many natural sources, such as plants, animals, and their by-products, can be valuable resources.

Modern technology makes even landfills or waste zones potential bio-energy resources. It can be used to be a sustainable power source, providing heat, gas, and fuel.

Bio-energy is essential for the environment. Continued use of fossil fuels will cause significant environmental issues and can harm the population's health.

As technology progresses, bio-energy has the potential to dramatically reduce greenhouse emissions, the release of harmful gases associated with global warming and climate change. The use of forests and farms in bio-energy can help combat the harmful release of carbon dioxide and help achieve a balance.



SOLUTIONS FOR DIGESTERS

SOLUTIONS FOR MATERIAL HANDLING



Type: Bevel helical gear unit
Catalog: H



Type: Bevel helical gear unit
Catalog: G



Type: Planetary gear unit
Catalog: EP



Type: Coaxial gear unit
Catalog: E



OUR EXPERIENCE IN WASTE-TO-ENERGY SOLUTIONS

For the last 20 years, Rossi has been designing products for waste-to-energy applications, waste water treatment plants, waste recycling processes and bio-based industry and developing its working relationship with key global waste-to-energy operators. This relationship is built on trust, industry know how, industry competence and continued investment in the product design and production techniques.

Rossi has understood that experience in sector like this is a key factor to develop environmental friendly and sustainable solutions for the future.



EXPERIENCE AND KNOWLEDGE MEANS...

Experience and knowledge does not only mean to know what is needed in the specific application, but also how to support customers during all design and dimensioning phases.

Rossi continues to develop its experience and ensure it has the ability to share vital knowledge that is relevant to machine builders today no matter what the application is. Information Rossi makes available includes:

- expected bearing life calculation
- Finite Element Analysis
- torque calculation
- shared design capabilities with customers.

Why not discuss your application with a Rossi technician and ensure you receive the benefit of Rossi experience in your application?



PROPOSALS BASED ON ENGINEERED SOLUTIONS

A Rossi proposal is a comprehensive document, designed to answer all the questions posed through a customer enquiry and to ensure a comprehensive summary is given to all the listed parameters of the design.

A proposal contains all the technical features and benefits needed to ensure a Rossi unit outperforms any other unit in the market as it is selected as closely as possible to the actual needs of the design. Used correctly, it answers all the questions the decision makers need when evaluating a technical and commercial proposal. Rossi believes that customers require a comprehensive list of the objectives of the needs of the enquiry, this ensures all important aspects are covered and written down from which to reference when developing a viable solution. Having the customers objectives allows Rossi to ensure all these are met and make recommendations in order of priority for every customers.

With a Rossi proposal, customers get peace of mind as any service or warranty is built into the service offering. Our warranty is comprehensive and arguably one of the best on offer today. This is because we at Rossi believe in our products and believe in our ability to meet the needs of our customers and we are therefore willing to back it up.



CUSTOMER ORDER MANAGEMENT

Rossi ensures that all processes within the IT platform are designed with rapid transfer of data needed for internal processes as well as for the management of the order by the customers themselves. Rossi has chosen to operate with Oracle's JD Edwards EnterpriseOne.

This facilitates order management on one platform for both the customer and Rossi staff anywhere in the world. Through a standard operating platform we are able to configure customers unique forecasting, shipping standards, transportation sequence and reporting processes in coordination with commercial contracts and associated quality control documentation – all integrated to one ERP system.

NetPro is Rossi's manufacturing execution system and production planning system within a single web platform, enhancing manufacturing efficiency, quality and profit margins.

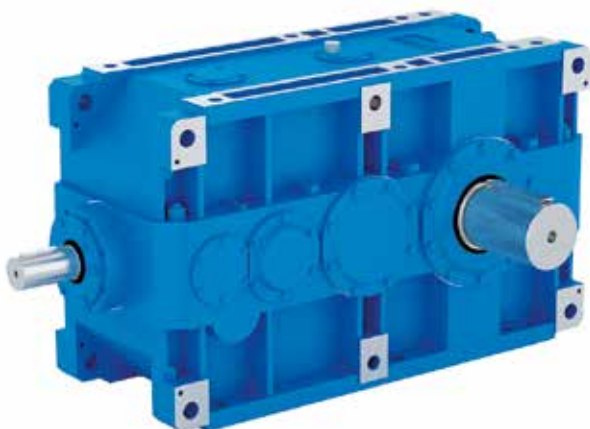
HELICAL AND BEVEL-HELICAL GEAR UNITS FOR WASTE INDUSTRY



HELICAL AND BEVEL HELICAL GEAR REDUCERS AND GEARMOTORS

G SERIES

Size		20 sizes (40 ... 401)
Power	P_1	0.09 ... 160 kW
Nominal torque	T_{N2}	$\leq 103,000$ N m
Transmission ratio	i_N	2 ... 160



HELICAL AND BEVEL HELICAL GEAR REDUCERS

H SERIES

Size		10 sizes (4000 ... 6301)
Nominal torque	T_{N2}	$\leq 450,000$ kN m
Transmission ratio	i_N	8 ... 315

PLANETARY AND COAXIAL GEAR UNITS FOR WASTE INDUSTRY


**PLANETARY (IN LINE AND BEVEL)
GEAR REDUCERS AND GEARMOTORS**
EP SERIES

Size		24 sizes (001...710)
Nominal torque	T_{N2}	1 600 ... 3,000,000 N m
Transmission ratio	i_N	3.55 ... 3,550 (in line) 9 ... 2,240 (bevel)

PLANETARY GEAR REDUCERS AND GEARMOTORS
EP COMBINED UNITS

Size		6 sizes (125...710)
Nominal torque	T_{N2}	125,000 ... 710,000 N m
Transmission ratio	i_N	according to Customer's requirements

COAXIAL GEAR REDUCERS AND GEARMOTORS
E SERIES

Size		16 sizes (32 ... 180)
Power	P_1	0.09 ... 75 kW
Nominal torque	T_{N2}	$\leq 10,000$ N m
Transmission ratio	i_N	4 ... 6,300

EXTENSIVE RANGE OF GEAR

**A series**

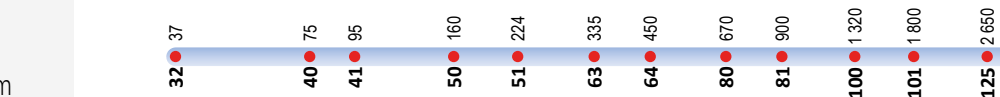
Worm
14 sizes
40 ... 8,000 N m

**AS series**

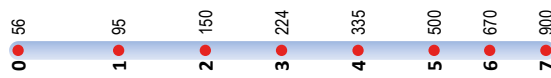
STANDARDFIT Worm
6 sizes
35 ... 670 N m

**E series**

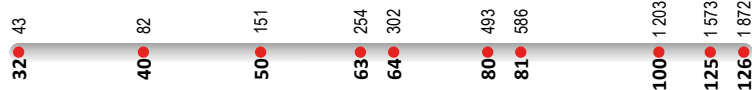
Coaxial
16 sizes
37 ... 10,000 N m

**ES series**

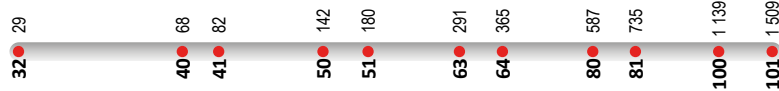
STANDARDFIT Coaxial
8 sizes
56 ... 900 N m

**SR series**

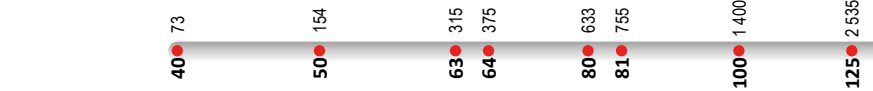
Worm
10 sizes
43 ... 1,800 N m

**SR series**

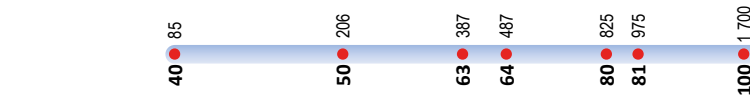
Coaxial
11 sizes
29 ... 1,500 N m

**SR series**

Helical and bevel helical
9 sizes
73 ... 3,390 N m

**G series**

Helical and bevel helical
20 sizes
85 ... 103,000 N m

**GX series extruder**

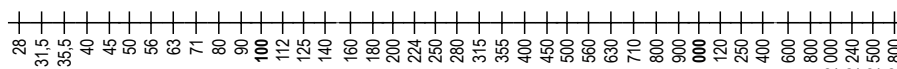
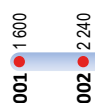
Helical and bevel helical
16 sizes
1,400 ... 134,600 N m

**H series**

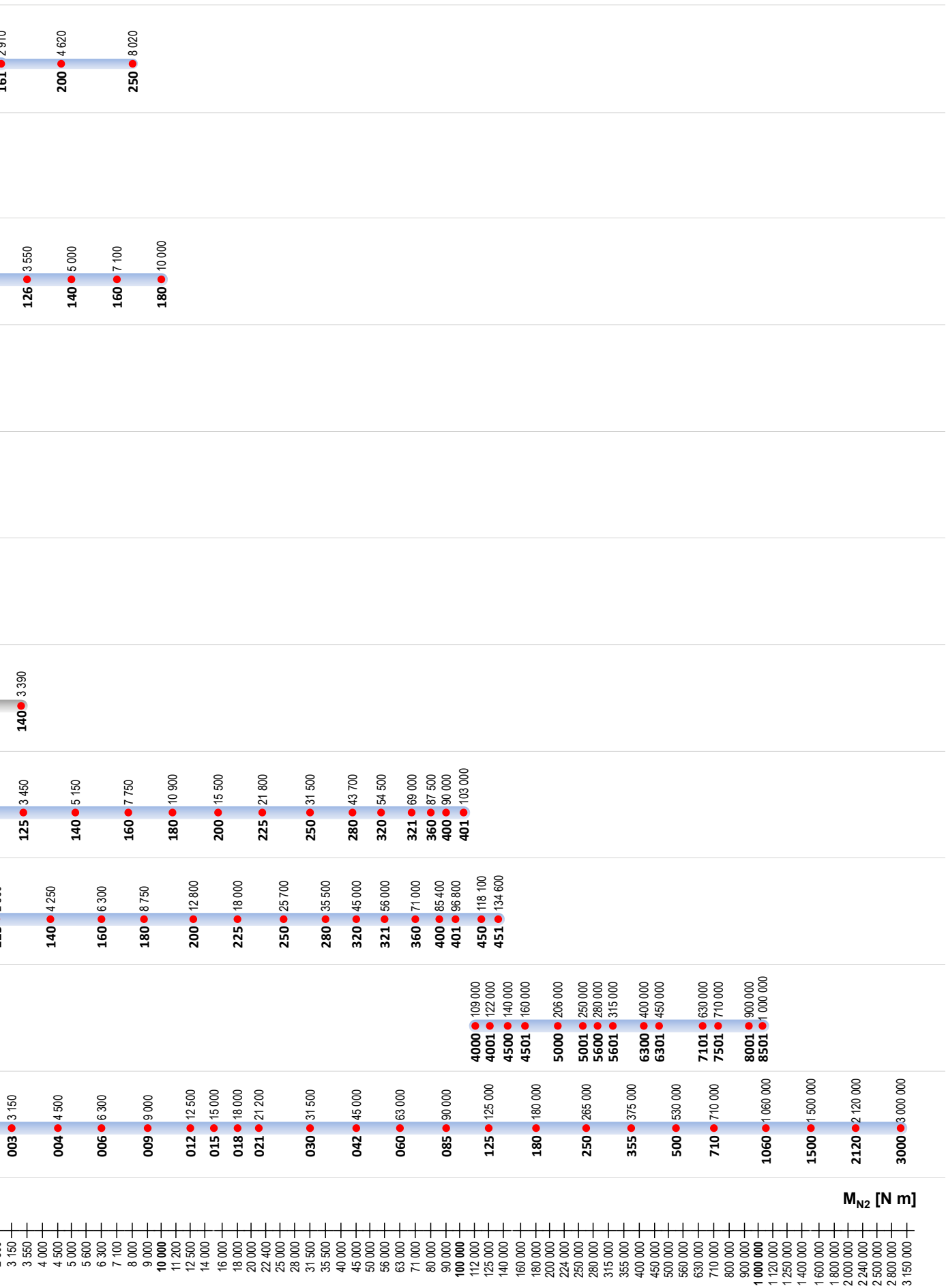
Helical and bevel helical
14 sizes
106,000 ... 1,000,000 N m

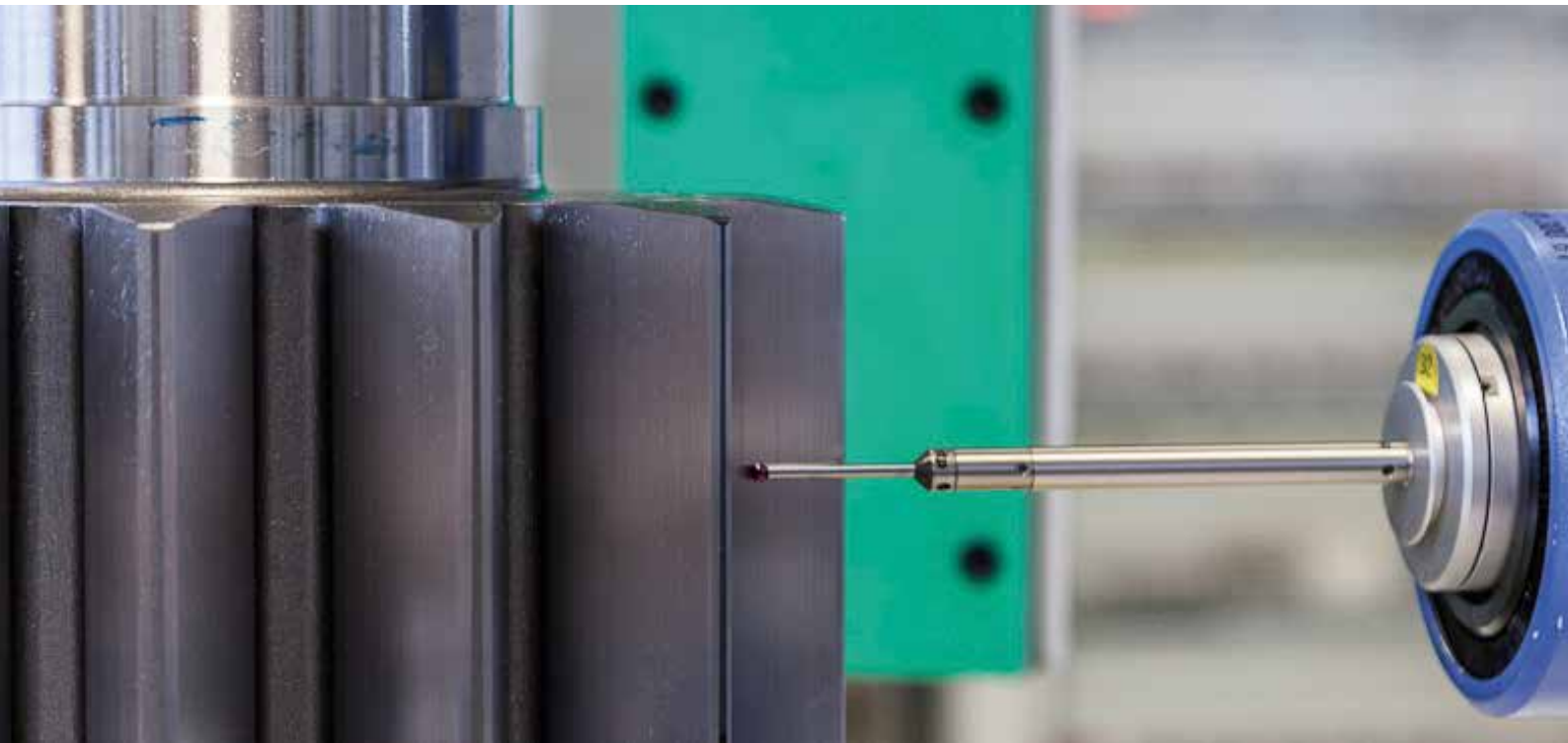
**EP series**

Planetary
24 sizes
1,600 ... 3,000,000 N m



REDUCERS AND GEARMOTORS





CUTTING EDGE TECHNOLOGY

When it comes to high-performance and ground precision gear manufacturing, technology and experience are everything. Cutting edge technology without experience can limit the benefit the final product has for the end user which is why Rossi continues to take pride in the fact that the ground gears the company manufactures are some of the best industrial gears manufactured by anyone today.

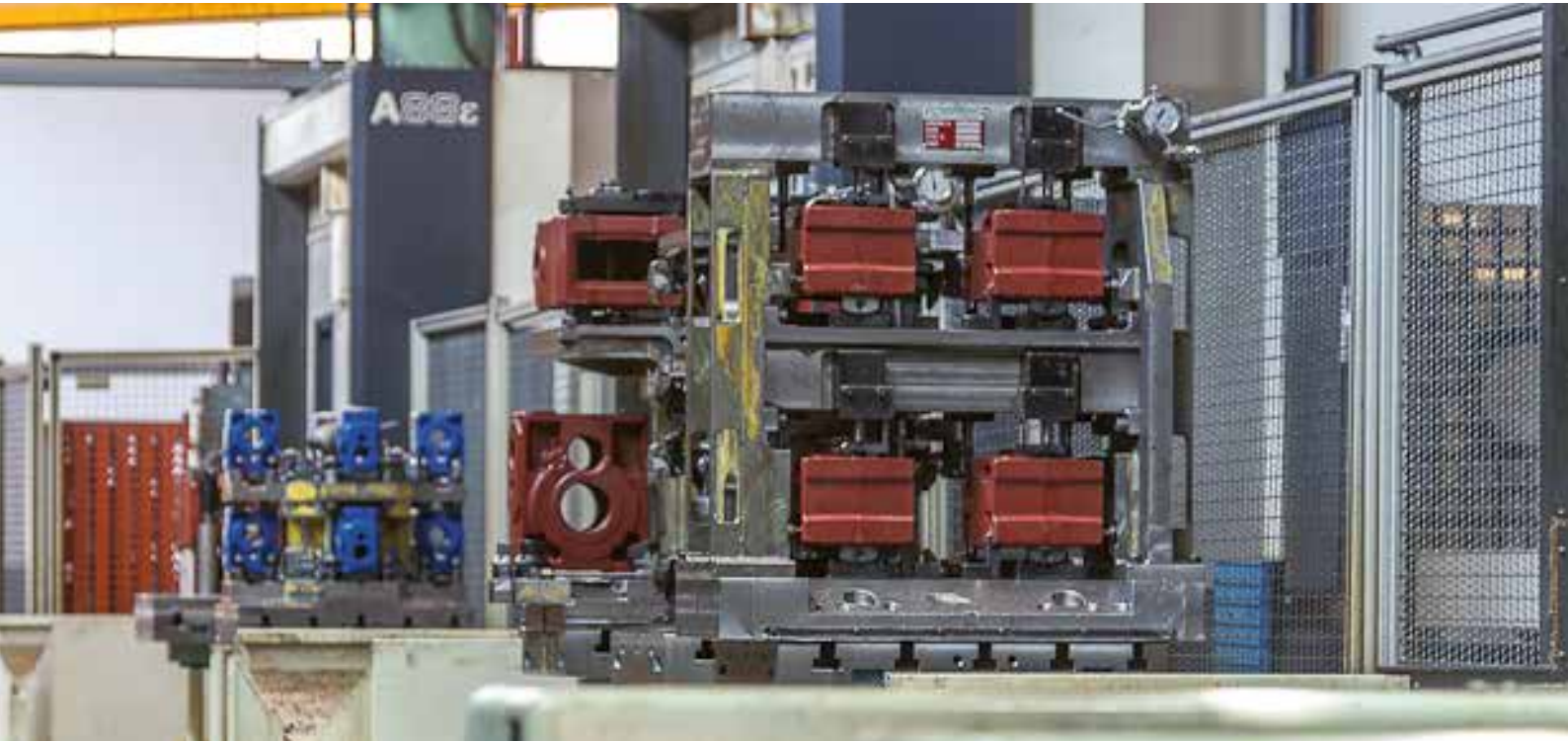
Rossi believes that ground gears, be they helical gears or helical bevel gears or any other, need to be of a consistent high quality finish in order for Rossi products to maintain the reputation of quality and performance they have today.

Cutting edge technology is also a fundamental corner stone of the quality control procedures needed to ensure the strict standards set as a company continue to be met and that the final product the customer sees is never compromised. Cutting edge technology can be bought, but how you control it is earned through experience.



QUALITY CONTROL

Every Rossi component machined individually or part of a production batch, follows a stringent quality control process as part of Rossi Quality management policy. This policy is mirrored in every Rossi production facility and is managed through a dedicated in house IT system, that allows the rapid flow of information at any given time. Rossi's quality control policy, audited by TÜV Nord, ensures that the manufacturing process is controlled from the sourcing of material, all the way through the final assembly of the geared product. Continuous monitoring of the ISO 9001 manufacturing procedures and processes allows the production quality control process to eliminate excess costs that could traditionally be added to the final batch of any production run, ensuring a cost effective final product. Rossi employs some of the most modern quality control equipment needed to measure tooth profiles, surface finishes and critical dimensions of components. Rossi by employing this quality management plan, can ensure consistent product performance safe in the knowledge that Quality is the foundation Rossi products are built on.



FLEXIBILITY HOUSING MACHINING

High performance needs to be supported with important equipment and knowledge.

For this reason, Rossi dedicates special attention to machining all components, including housings for big sizes. High quality standard requirements can be reached using cutting edge technology, such as our new boring milling center.

Production flow is complete with the final operation and quality check. The housings are measured using appropriate "Coordinate Measuring Machines" (CMM).



TEST CONTROLS

Systematic, extensive controls on every stage of the process (from materials to final controls under load using computerized brakes at the end of the assembly line) and their productivity allow quality to be produced and not just achieved through selection, and permit monitoring and improving the process itself.

In addition customers can trust our solutions which have been fully tested and run in our testing room, being operationally certified before on site commissioning.



As a result of the rapidly growing importance of the global market for power transmission systems, Rossi has set up a network of subsidiaries and dealers in nearly all industrialized countries. Support during the design phase, local availability of the required drive technology and rapid local service make Rossi a flexible and dependable partner throughout the world.

The new Rossi Online Catalog (ROC) is a unique tool which allows everyone to make the proper selection of gear reducers, gearmotors according to the catalogs A (Worm), E (Coaxial), G (Helical and bevel helical), facilitating product selection, avoiding selection mistakes and creating complete documentation (technical datasheets, dimensional drawings, etc.).



GLOBAL SERVICE

We don't stop with the sale of our product, we provide our customers with service and back-up.

Through our subsidiaries' inventories and assembly centers worldwide we make sure that we are not only able to supply gearboxes but that we can also back them up, if need be, with the spare parts required.

Our Global Service has the possibility to reach our customer's plants quickly, in case of breakdown. Our main goal is to return our customers' plants to operation as soon as possible and to keep maintenance overheads as low as possible.



