



CYLINDER LINERS

GIANT
within GIANTS



UNITED

stands as a synonym of quality and is the ultimate choice for its customers. In the 51 years of its existence, it has strived to set new standards of efficiency and quality. The secret behind our emergence as a globally competitive player is the customer satisfaction we provide. This level is the confluence of an excellent product line and world-class service.

United Engineering Works, involved in the manufacture and export of cylinder liners from India has export ties with over 40 countries and enjoys the confidence of its innumerable customers. It rightly deserves the enviable position of being Asia's biggest exporter of liners.





CENTRIFUGAL CASTINGS

COMPOSITION

CARBON	3.0 – 3.2%
MANGANESE	0.50- 0.80%
MOLYBDENUM	0.1- 0.3%
SULPHUR	0.7 – 0.15%
CHROME	0.50 TO 0.90%
PHOSPHORUS	< 0.15%
NICKEL	0.2 – 0.3 %

OTHER DETAILS

HARDNESS	95 TO 100 HRB 200 TO 235 BHN
TENSILE	18 TSI MIN RT
ENLONGATION	16 x 10 6th PSI MIN

PROCESS FOR CENTRIFUGAL CASTING

"Centrifugal Cast Process" is acknowledged to be the best method for production of Cylinder Liners. This process, performed by Semi-Automatic Horizontal/ Vertical centrifugal Casting machine, provides the liner with bearing metal qualities that cause skin healing after abrasion, and a structure that is readily wetted by oil and retains an oil film.

In the centrifugal casting process, the molten metal is poured into a metal mould or a die which is revolving at a high speed. Due to centrifugal force the impurities, being lighter than iron, are forced to the bore surface from which they are removed by machining. The centrifugal force causes the metal to distribute itself evenly around the die & the resulting castings are of much finer grain and free from blow holes or porosity.

As a next step, GPR Cylinder Liners & Sleeves are machined in our well-equipped plant having latest & sophisticated special purpose, indigenous machines. The machining of outer diameter, radius and grooves are carried out on CNC machine with the best process capabilities with online in-process inspection facilities. The Bore diameter is subsequently honed by using fully automatic PLC controlled Plateau Hydraulic machine to obtain required honing geometry and surface roughness parameters. The sealing diameters are controlled by a cylindrical and center less grinding machine achieving required surface and geometrical parameters.

COMMITMENT TO OUR CUSTOMERS

Our total commitment to customer service and support, supported with rapid response to enquiries and speedy dispatch of orders, has led us to become a favored supplier over the years.

We increase our Customers' Expectations by supplying high quality products, at a competitive price & at the same time ensuring on time delivery.

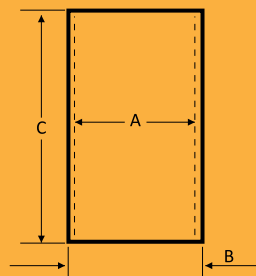
Today our business growth and market capitability are at highest level as an outcome of our approach to excellent Customer Service. Our highly qualified sales team aims to assist the customers most satisfactorily and professionally.

TECHNICAL TERMS

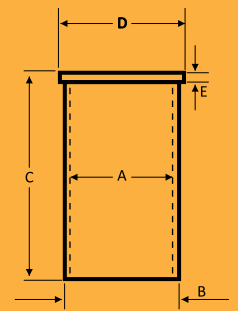
Abbreviations

A = Bore Dia **B = Bottom Dia** **C = Total Length** **D = Collar Dia**

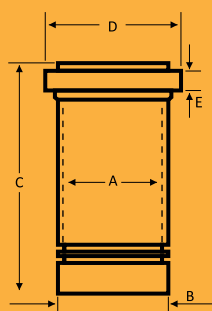
E = Collar Height **F = Comp. Height** **FL = Fire Lip**



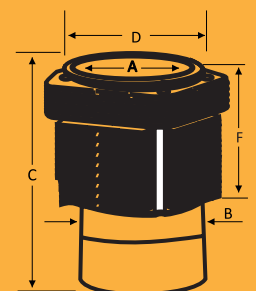
X1



X2



Y



Z

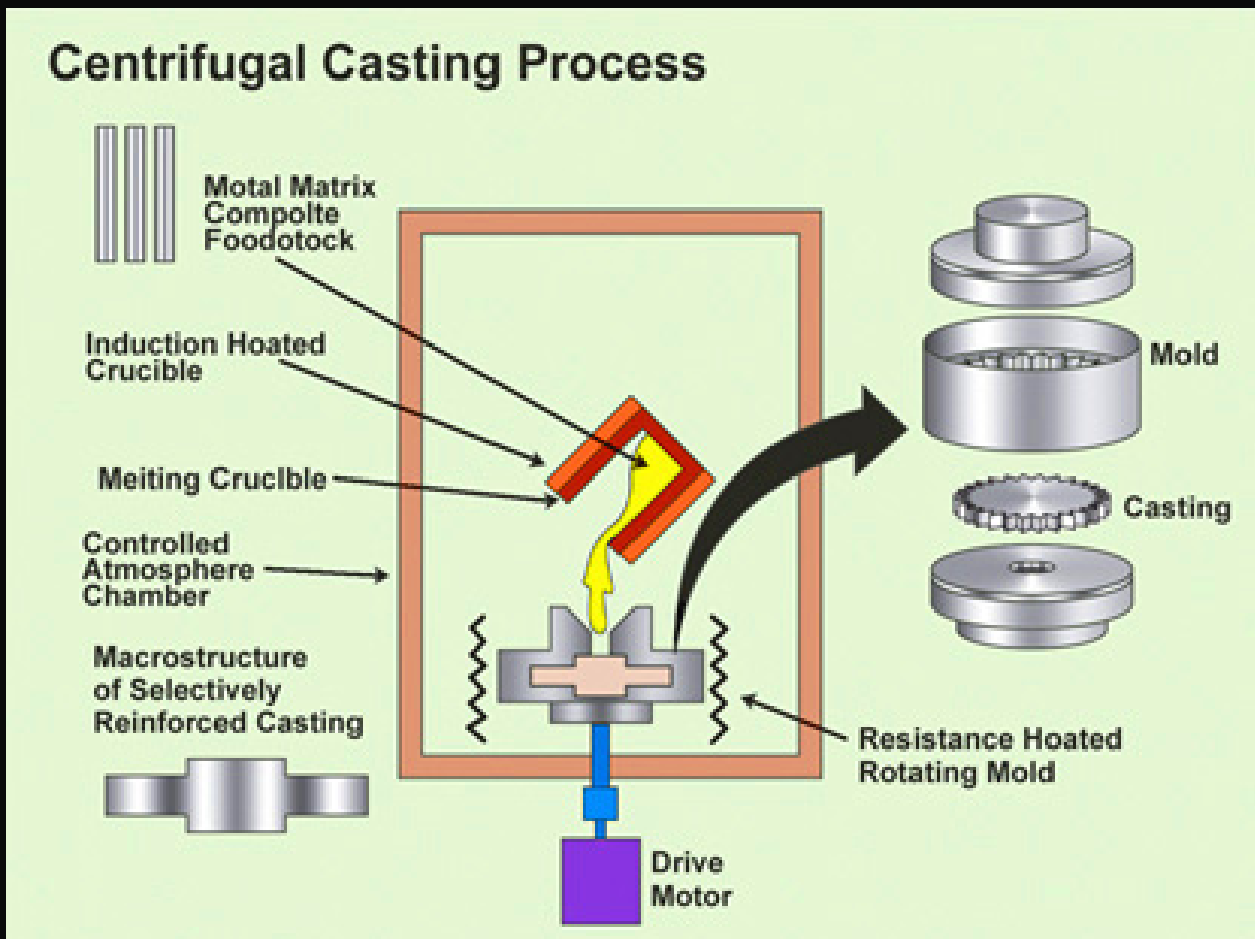
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INFRASTRUCTURE



Induction Melting

Induction melting is done by induction furnaces for achieving a clean, energy efficient and well controlled melting process

Melting Pouring

Molten Metal is poured into centrifugal die which rotates at 1400-1500 rpm.

Boring Machines

This machine is used to create a rough surface which has benefits of both smooth and rough texture

CNC Machines

This machine is used to achieve high accuracy in dimension, surface roughness and geometrical parameters



Packaging

Innovative packaging solutions in both plastic and paper to suit your business needs. We offer a variety of packaging options suitable for diverse range of industries. While ensuring the quality we do not lose focus on cost effectiveness.

MACHINE & INSPECTION FACILITIES

- To meet the international standards we have developed comprehensive machining & quality controls which facilitates to get zero defect components.
- To take care of dimensional accuracy & consistency, liners are made on copy turning or CNC machine.
- These components are then ground on precision cylindrical grinding machine or on centerless grinder.
- Boring of components is carried on SPM boring machine of Denmark.
- 100% visual & dimensional inspection is carried for all components .
- Not a single component with deviation, dents, rust is accepted. Surf tester is used for checking the finish of components.



EXPORTS WORLDWIDE



Whatever the work, we ensure that it is of the best possible quality and more than satisfactory to the clients. We put the latest technologies in use to bring out the best products.

All our products are provided in strong and tamper proof packages. We believe that the first impression wins half the battle. As a result, we pack all our products in an attractive manner.

ACCURACY

PACKAGING

united
CYLINDER LINERS

AFTER SALES SERVICE

OFF SHELF SUPPLY

Our team of experts is always on the run, going from one customer to the other, local as well as international, to give them an update of any new arrivals from our stable and improvement in the existing products.

It is our constant endeavour to cut down on the lead-time of our products. We strive to supply at the earliest so as to meet the demands of the customers, who are ultimately, the backbone of our organization.

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