Reiloy Barrels

Reiloy Screws

PM-HIP Technology

Reiloy – The Quality Company

Highly wear resistant screws and barrels
for extrusion and injection moulding

Reiloy

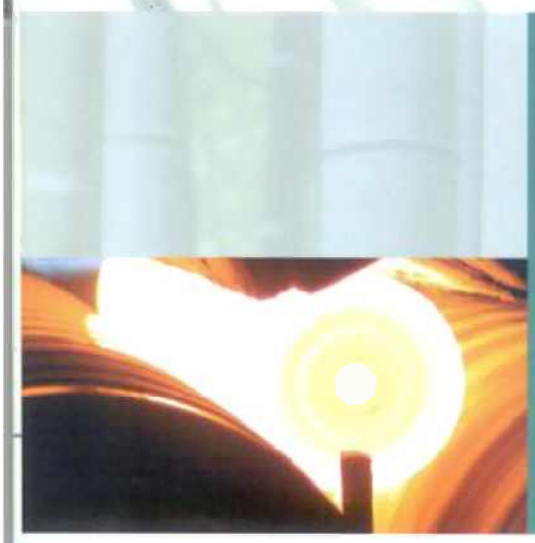
Reifenhauser Group

Reiloy – Ready for new challenges
Quality for the highest demands

Today's plastic products have to comply with sophisticated tasks. Often this requires additives to achieve specific characteristics. These additives, coupled with higher throughput, as well as higher operating temperatures and pressures, create a more demanding wear environment on Screws and Barrels. This aggressive wear is a consequence of abrasion, adhesion and corrosion.

To ensure high quality, predictable, stable, and economical production of plastic parts, Screws and Barrels must be comprised of the proper alloys and dimensional precision.

From the beginning, Reiloy's mission has been to produce and sell custom-tailored, wear resistant Screws and Barrels. Reiloy's constant development of new hard alloys and procedures to improve wear protection has resulted in being recognized as a market leader. With continuous investments in highly automated production lines and an expansion of our production capacities, Reiloy has set the stage to continue its track record as a technology leader in the future.



Centrifugal Casting process

Finished Barrel Reiloy R121

Reiloy Barrels

Bimetallic Cylinder

Reiloy produces outstanding alloys for bimetallic Barrels, which are used in general as well as specific high demand applications to avoid the effects of wear and/or corrosion.

All armouring alloys are developed in our own material laboratory and continuously tested under tough operating conditions.

The armouring lining alloys are centrifugally cast into the barrels backing steel in high-performance induction field centrifugal casting plants. The resulting bimetallic barrel blank features a high strength backing steel and a homogenous metallurgical diffusion bond.

The barrel blanks are absolutely free from distortion, one result of Reiloy's proven production process. Time-consuming and labour-intensive straightening operations and stress-relief annealing can thus be eliminated during the subsequent mechanical machining

Reiloy R112

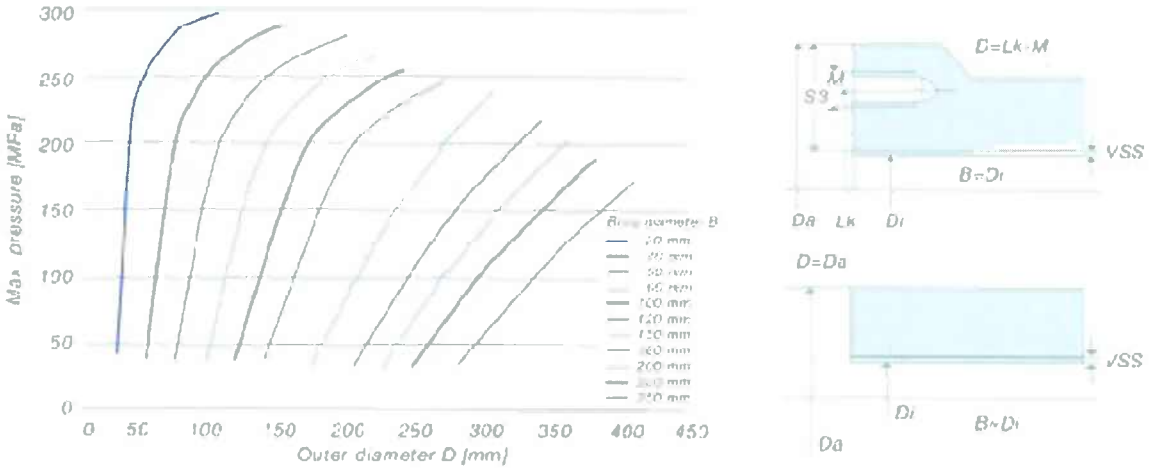
Reiloy R215

Reiloy R130

Finish machining of a bimetallic barrel

Reiloy's specially developed backing steels are designed to match specific applications in injection moulding machines and extruders. Reiloy's alloyed steels fulfil the demand of high operating pressure and corrosion resistance if necessary.

High pressure barrels, typically for injection moulding applications, receive the Cr-V-alloyed special backing steel "Reiloy Standard", produced according to Reiloy's chemistry and treatment instructions.



Maximum permissible pressure inside the barrel depending on outer diameter D for different bore diameters B
Barrel material Reiloy Standard at 350°C working temperature

Reiloy R115

Reiloy R121

Selection of REILOY's centrifugal casting alloys for barrels

Fe-base

REILOY material	Hardness [HRC] RT	300 °C	Wear resistance	Corrosion resistance	thermal material expansion (25 - 400 °C) [1/MK]	essential alloy elements [weight-%] Cr	Mo	V	Ni	B	C
R112	65 - 68	55 - 57	•••	–	12,8	1	–	–	4	2,1	3,6
R121	65 - 69	58 - 62	•••	•••	14,2	10	6	–	4	3,8	2,0
R130	65 - 69	58 - 62	••••	••	14,1	9	5	8	5	3,5	3,1

Ni-base

REILOY material	Hardness [HRC] RT	300 °C	Wear resistance	Corrosion resistance	thermal material expansion (25 - 400 °C) [1/MK]	essential alloy elements [weight-%] Cr	Mo	Co	B	W	C
R115	52 - 56	49 - 53	•	•••••	13,1	7	2	35	3,8		
R215	60 - 65	53 - 57	•••••	••••	11,5	4	1,5	15	2	40	1,9

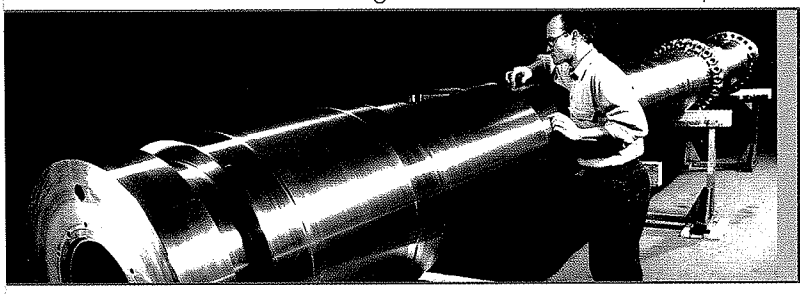
Selection of backing materials for bimetallic barrels

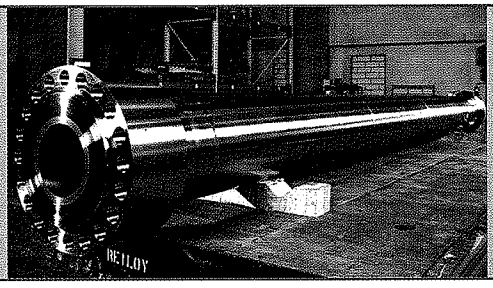
Properties after the centrifugal casting process

Backing materials

Material	Material No.	Yield strength $R_{p0.2}$ (300 °C) [MPa]	Tensile strength R_m (RT) [MPa]	Elongation to fraction $A(l_0=5d)$ (300 °C) %
REILOY-Standard	–	580	980	15
C60	1.0601	360	800	12
Inconel 625	2.4856	300	630	40

Additional backing materials available on request





Delivery parametres

- Layer thickness approx. 1,5 mm
- Bore honed to tolerance H7
- Peak-to-valley height min. 0,15 µm max. 0,8 µm
  Except R215 min. 0,5 µm, max. 0,8 µm

Delivery dimensions

- Inside dia. 15 - 400 mm
- Outside dia. max. 650 mm
- Length max. 9000 mm

Delivery form

- Barrel blank : Bore finished-honed, outer diameter and length with manufacturing overdimensions
- Semi-finished barrel: Bore finished-honed, outer diameter and length turned to dimension (eventually with feed opening) with shrink-fit sleeve at the outflow end if necessary
- Finished barrel: completely finished according to the customer's drawing