



Reifenhäuser

REILOY

The Extrusioners

Screws in Reiloy Quality

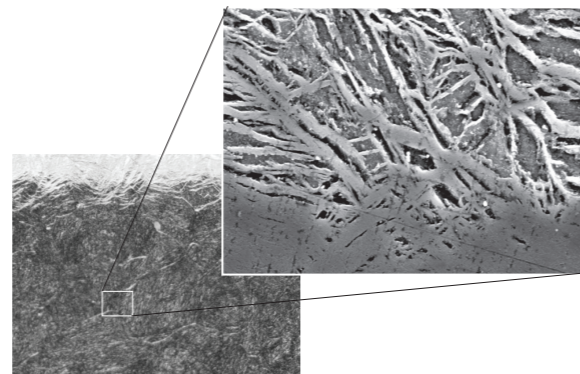
For processing thermoplastics, duroplasts, and elastomers for extrusion and injection molding. Backed by our technical capabilities and experience, we design screws customized to your requirements so that you can boost the efficiency of your production sustainably. Alternatively, we can also manufacture screws in full compliance with your drawing. Whatever you decide, we are capable of manufacturing a wide range of screw geometries on our ultra-modern production facilities.

Armoring alloys for screws with armored flights

Screw diameter	40 – 300 mm
Length	max. 9,000 mm
Surface coating	Ion-nitrided, gas-nitrided, hard chrome-plated, or PVD-coated
Design	Screw according to drawing, or Reiloy geometry design

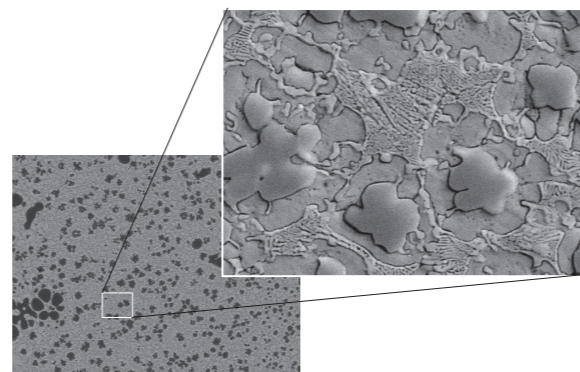
Smart

Nitriding steel	High surface hardness
Surface hardness at room temperature	900 – 1,100 HV5
Main alloy components	Cr, Al, Ni
Microstructure description	Nitride-rich edge zone



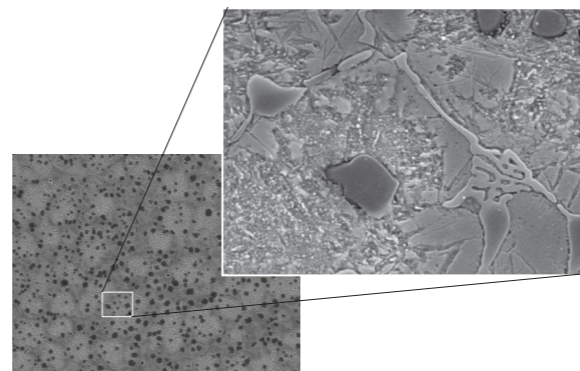
Advanced

R331	High wear protection
Hardness at room temperature	min. 56 HRC
Main alloy components	Vanadiumcarbide, Cr
Microstructure description	Martensitic iron-based alloy reinforced by vanadium carbide
Screws ≤ Ø 70 mm	Also available in through-hardened tool steel



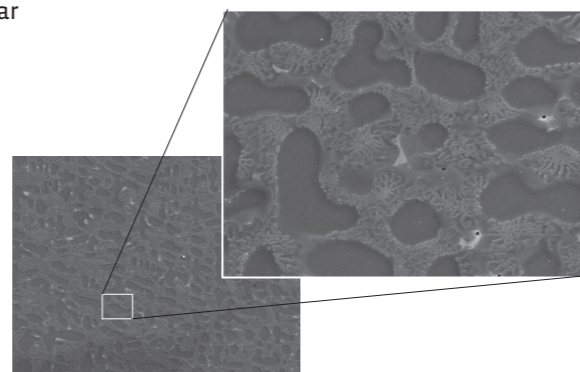
Premium

R341	Highest wear protection with very good corrosion resistance
Hardness at room temperature	min. 56 HRC
Main alloy components	Vanadiumcarbide, Cr
Microstructure description	Martensitic iron-based alloy reinforced by vanadium carbide
Screws ≤ Ø 70 mm	Also available in through-hardened PM-HIP tool steel

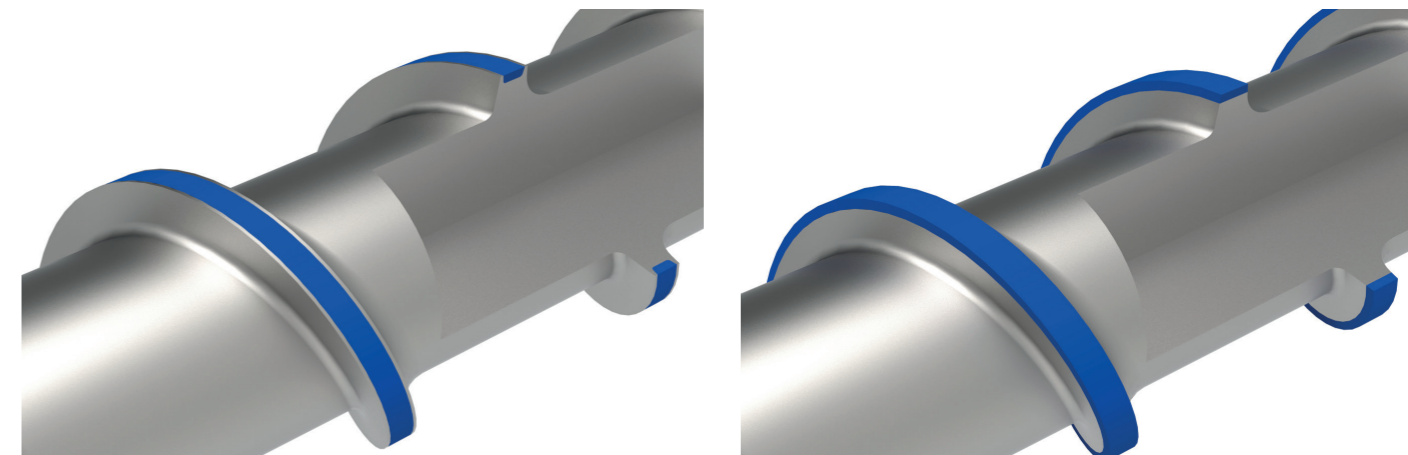


Select

RS12	Highest corrosion resistance with good wear protection – also at high temperatures
Hardness at room temperature	min. 45 HRC
Main alloy components	Cr, W
Microstructure description	Cobalt base matrix with mixed tungsten and chrome carbides



Armored screws in Reiloy quality



- Advanced** Screws for plastic with low filler content, greater wear protection against abrasion on outer flight surfaces.
- Premium** Screws for plastic with filler content of >30 %, maximum wear protection against abrasion, corrosion, and adhesion. Complete flight surface protection in armored quality; suitable for use in high-wear applications.

Base material

Material	Material-number	R _{p0.2} (MPa)	R _m [MPa]
31CrMoV9	1,8519	780	850
X39CrMo17-1	1,4122	550	750
X38CrMo16	1,2316	600	800
NiCr22Mo9Nb	2,4856	425	870

Plasticizing unit Recommended material combinations

Barrel \ Screw	Advanced Through-hardened tool steel	Premium Through-hardened PM-HIP tool steel	Smart Nitrided steel	Advanced R331	Premium R341	Select RS12
Nitrided steel	++	-	+++	+++	+++	++
Smart R121	+++	++	++	+++	+++	++
Advanced R131	+++	++	++	+++	+++	++
Advanced R239	+++	++++	-	+++	++++	-
Premium R241	+++	+++	-	+++	++++	-
Select R115	-	-	-	-	-	++

Screw matrix

Overview by plastic

Size	Smart	Advanced	Premium	Select
Screws < Ø 50	34CrAlNi7-10 (1.8550) nitrided	X 153CrMoV12 (1.2379) through-hardened	PM-HIP through-hardened	NiCr22Mo9Nb RS12
Screws > = Ø 50	34CrAlNi7-10 (1.8550) nitrided	31CrMoV9 (1.8519) R331	38CrMo16 (1.2316) or 31CrMoV9 (1.8519) R341	NiCr22Mo9Nb RS12

Depending on the application, screws can receive additional treatment; nitrided, chrome-plated, PVD-coated.
These are recommendations; as required, some raw materials may need alternative treatment.

Raw material	Unfilled	< 30% filler	> 30% filler
ABS	Advanced / Premium	Premium	Premium
ASA	Advanced / Premium	Premium	Premium
CA	Smart / Advanced	-	-
COC	Advanced** / Premium	-	-
EVA	Advanced** / Premium	Premium**	Premium**
HDPE	Smart / Advanced	Advanced / Premium	Premium
HIPS	Smart / Advanced	Advanced / Premium	Premium
LDPE	Smart* / Advanced	Advanced / Premium	Premium
PA	Advanced / Premium	Premium	Premium
PBT	Advanced / Premium	Premium	Premium
PC	Premium**	-	-
PEEK	Premium**	Premium**	Premium**
PEI	Advanced / Premium	Premium	Premium
PESU	Advanced / Premium	Premium	Premium
PET	Advanced** / Premium	Premium**	Premium**
PF	Select	-	-
PFA	Select	-	-
PMMA	Premium**	-	-

Raw material	Unfilled	< 30% filler	> 30% filler
POM	Advanced / Premium	Premium	Premium
PP	Smart* / Advanced	Advanced / Premium	Premium
PPA	Advanced / Premium	Premium	Premium
PPS	Advanced / Premium	Premium	Premium
PPSU	Advanced / Premium	Premium	Premium
PS	Smart / Advanced	-	-
PS, transparent	Advanced** / Premium	-	-
PSU	Advanced / Premium	Premium	Premium
PTFE	Select	-	-
PVC-C	Advanced** / Premium	Premium**	Premium**
PVC-P	Advanced** / Premium	Premium**	Premium**
PVC-U	Advanced** / Premium	Premium**	Premium**
PVDF	Select	-	-
SAN	Advanced** / Premium	-	-
SB	Advanced** / Premium	-	-
TPE	Advanced** / Premium	Premium**	Premium**
TPU	Advanced** / Premium	Premium**	Premium**

* Depending on the material ** Additional surface coating required