

Company presentation



History



The beginnings of the company reach back to the year 1926, when the production of piles started . The quality of »pile from Prevalje« was known also to the royal workshops in Vienna. The development of pile factory, renamed in to »Tovarna pil Prevalje« had big impact on town Prevalje and also Koroška valley.



Nowadays, TRO is modern company with 150 employees and a **wide production range, including industrial knives, woodworking tools, circular saws and tungsten carbide products.**

Our products are sold in **ca. 55 countries worldwide**. With investments in education we raise educational level of employees what significantly influence on readiness to accept challenges and mastering the changes.

From the beginning of the 21st century, TRO has become orientated to high quality industrial knives destined to the most demanding buyers in the global market.

Product mix

Due to almost 100 years of TRO tradition in **high quality steels** we have become an important manufacturer of knives and blades to fit **many European machine makers** of the equipment for recycling of plastics, rubber, wood, foil and machines for RDF whose machines are **delivered** worldwide.

Knives for metal industry

Knives and blades for recycling industry

Knives and tools for wood industry

Knives for paper industry

Tungsten carbide products

Other machine parts

Production capabilities

OPERATION	Length [mm]	Width [mm]	Height [mm]	Diameter [mm]	Parallelism [mm]	Flatness [mm]	Straightness [mm]	Cylindricity [mm]	Surface roughness	Perpendicularity [mm]
Sawing	-	430	430	430	-	-	-	-	-	-
Turning	500	-	-	∅310	-	-	-	-	-	-
Milling	2450	900	800	1000	-	-	-	-	-	-
Heat treatment	1400	600	600	-	-	-	-	-	-	-
Segmental surface grinding	4000	600	250	-	0,05/1000	0,15/1000	0,1/1000	-	Ra 0,4	0,15/100
Segmental grinding of angles	400	300	100	-	-	0,15/1000	0,1/1000	-	Ra 0,4	-
Profile grinding	800	600	320	-	0,02/1000	0,05/1000	0,05/1000	-	Ra 0,2	-
Internal diameter grinding	700	-	-	∅ 4- ∅ 350	-	-	-	0,005	Ra 0,2	-
Outside diameter grinding	700	-	-	∅ 2- ∅ 350	-	-	-	0,005	Ra 0,2	-
5 axis grinding	200	-	-	∅ 2- ∅ 250	-	-	-	0,005	Ra 0,2	-

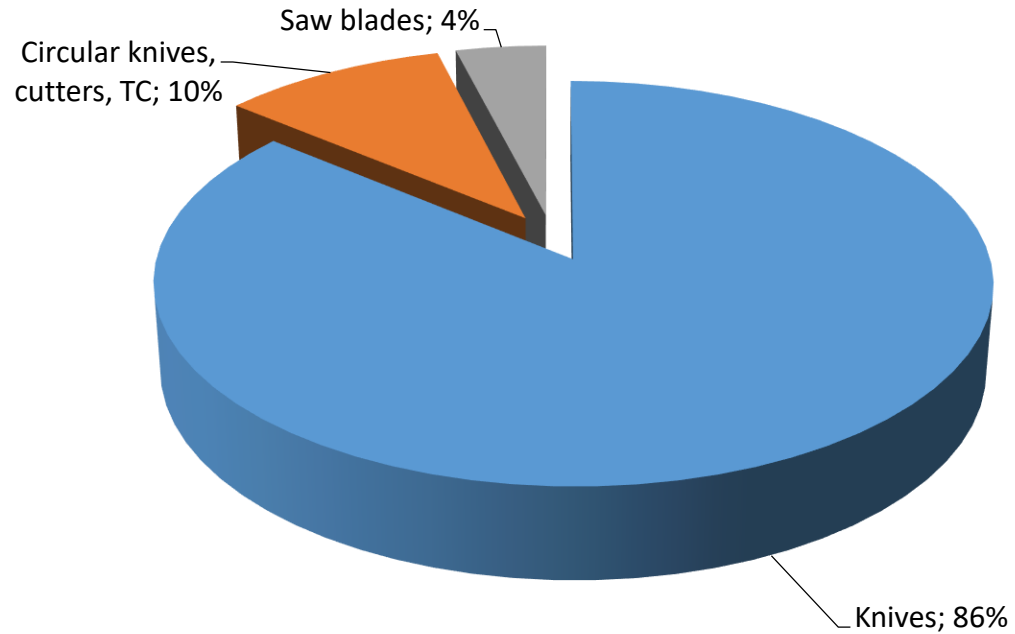
Own R&D Department

Our first aim is to satisfy our customers.

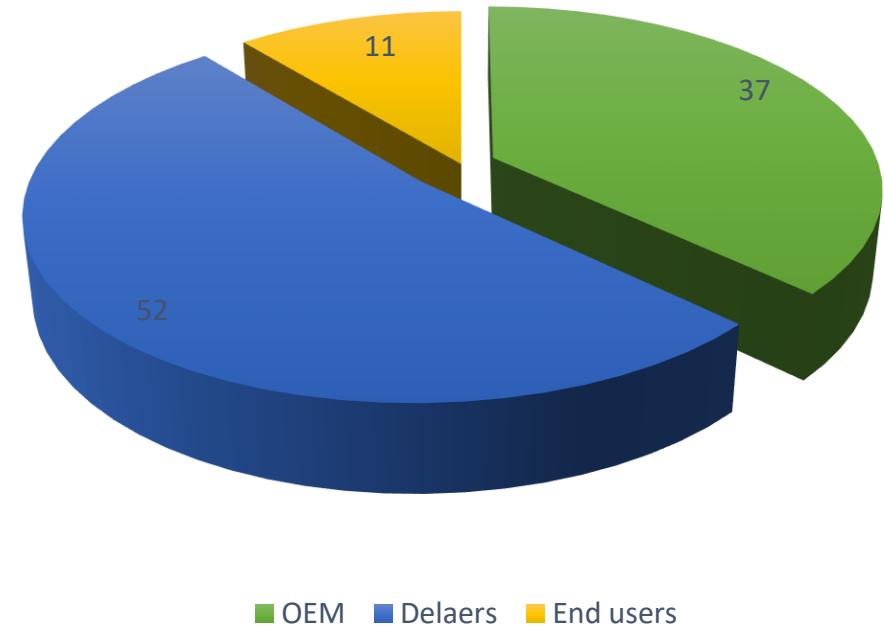
We assure this by respecting specific desires, business flexibility and competitive prices. Our cooperation with worldwide machine manufacturers keeps us updated with the latest innovations on the market – especially in the field of materials and procedures of heat treatment, which adds to the knives required characteristics.

In the technical department we therefore employ professionals, which constantly update to improve our cutting tools as well as our and customers savings. We believe that this is a guarantee to long-term development and company's existence.

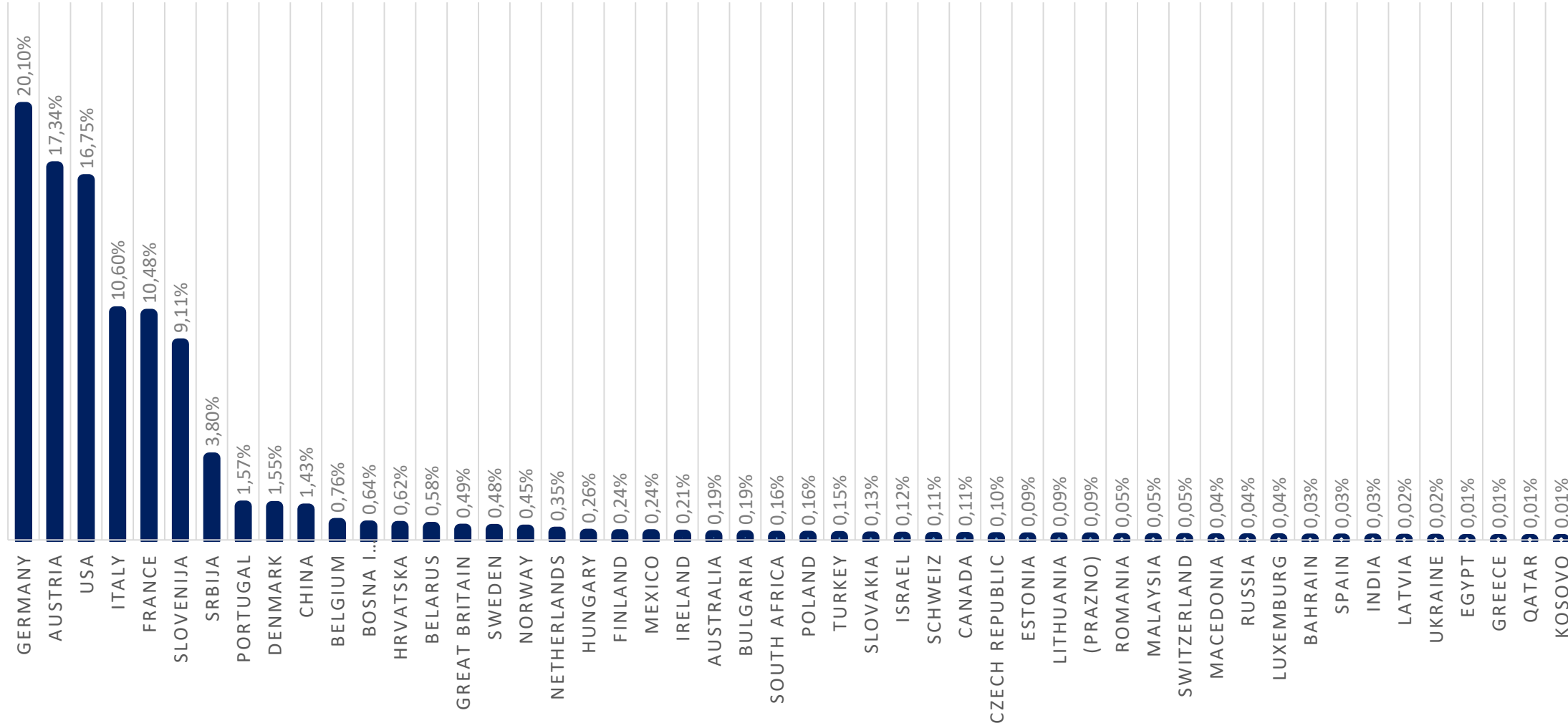
Sales structure



Customers



Sales – Countries



Recycling and plastics industry

Knives for plastics and recycling are manufactured from **finest high alloyed tool steel**. Particular alloying elements in these steels are crucial for quality cut, high wear resistance and mechanical stress.

Due to almost 100 years of TRO tradition in high quality steels we have become an important manufacturer of knives and blades to fit many European machine makers of the equipment for recycling of plastics, rubber, wood, foil and machines for RDF whose machines are delivered worldwide.



GRANULATOR KNIVES



SHREDDING KNIVES



CIRCULAR SHREDDING KNIVES



ROLLERS



CIRCULAR KNIVES



PELLETIZING KNIVES

WR. NR.	OBIČAJNA TRDOTA	MIN	MAX
1.2767	42 - 54	42	56
1.2343	48 - 55	48	56
1.2345	48 - 58	50	59
1.2379	55 - 60	54	61
1.3207	62 - 65	60	67
1.7131	jedro 207-217HB, cem plast: 60 - 64 HRC		

Solutions for plastic and recycling machines

TRO knives are found in following machines

we reduce it.
LINDNER
Recyclingtech

UNTHA
shredding technology

metso

NGR
RECYCLING MACHINES

HERBOLD
MECKESHEIM

ANDRITZ

HSM

S Let our experience work for you!

Wittmann
Progress through Innovation

ÜSTÜN İŞ MAKİNA

RAPID

WANNER
Wanner Technik GmbH

MTB
RECYCLING.FX

MO.DI.TEC
INNOVATIVE LOW SPEED GRANULATORS

Adler

Bruno Folcieri
Granulators and shredders for plastic materials

PREVIERO
SIZE REDUCTION TECHNOLOGIES

SOREMA
PLASTICS RECYCLING SYSTEMS

CPM

Hellweg
Maschinenbau

Diebels GbR

maag
a **DOVER** company

maag pump & filtration systems automatik scheer strand pelletizers gala automatik underwater pelletizers reduction pulverizing systems

4 STEPS AHEAD FOR YOUR SUCCESS

Metal industry

With knives for cutting of **sheet metal** and knives applicable in the manufacture of different **steel profiles** of all dimensions TRO provides integral solutions in the **production, processing and recycling of metals**.

We perform complete solutions for the metal industry for the **most demanding European customers**, mainly for the **automotive** and **metallurgical** industries.



WR. NR.	NORMAL HARDNESS	MIN	MAX
1.2343	48 - 55	48	56
1.2345	48 - 58	50	59
1.2379	55 - 60	54	61
1.2767	42 - 54	42	56

Circular knives for mills are manufactured **up to the diameter 550 mm, the flat ones up to the length 1300 mm**. Mostly used materials for the manufacture of knives for mills are those, which are optimized for work in high temperatures, with low carbon and achieve good toughness and good **hardenableity** (1.2343, 1.2344, 1.2345).

Application:

TRO supplies knives for scrap shears and sheet metal to suit different machinery like: Lindemann, Copex, Vezzani, Schäfer, Cosmo and others.

Knives for Metal and Automotive industry

TRO supplies knives for scrap shears and sheet metal to suit different machineries :



frauenthal
automotive
smart parts for trucks

Wood industry

Based on the experiences and years of tradition TRO will offer you the exactly **right tool for all types of wood**.
Chipper knives, length up to 1300 mm applicable in primary wood processing.

These are high quality industrial knives made of material 1.2360, which is characterized by good wear resistance and medium toughness.



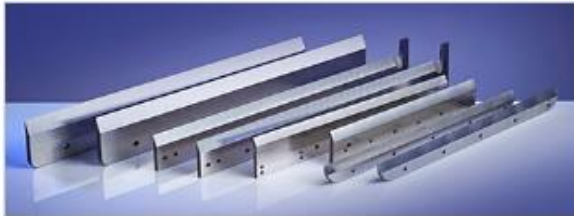
WR. NR.	NORMAL HARDNESS	MIN	MAX
1.2343	48 - 55	48	56
1.2345	48 - 58	50	59
1.2360	52 - 58	52	59
1.2631	54 - 58	52	59
1.0906	48 - 59	48	62
1.2235	48 - 61	46	62
1.3343	59 - 64	59	65
1.3355	60 - 65	59	66

Wide range of **brazed cutters** in HSS and HW quality as well as **circular saws** are part of TRO production and sales programme for years.

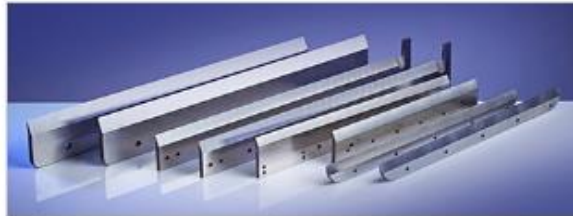


Paper industry

Straight and circular knives for cellulose and paper industry, graphics and printing industry, toilet paper industry and other knives for paper.



GUILLOTINE KNIVES



TRIMMER KNIVES

WR. NR.	NORMAL HARDNESS	MIN	MAX
1.2379	55 - 60	54	61
1.2235	48 - 61	46	62
1.2510	55 - 62	54	64
1.2080	58 - 64	56	65
1.3343	59 - 64	59	65

Tungsten Carbide

We provide a wide range of products made of tungsten carbide, which application is very wide: the processing of stone, wood, plastics, non-ferrous metals.

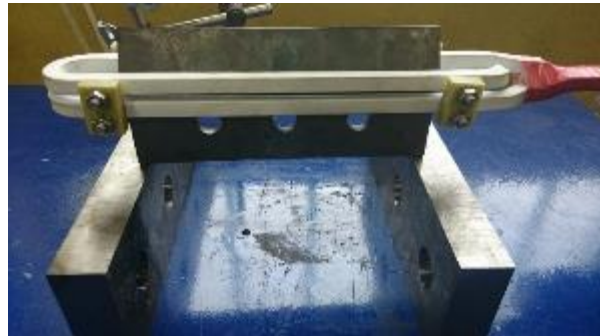
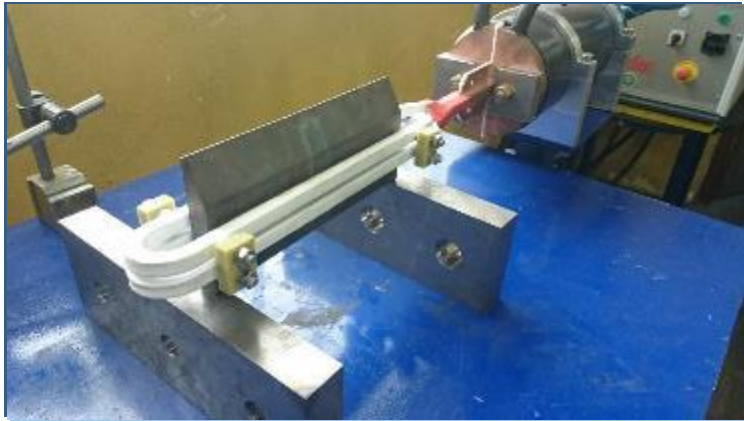
Some of the most common products:

- bushes,
- matrices/patrices,
- tiles for cutters,
- various wear-resistant machine parts.



ZONE TEMPERING

The advantage of zone tempering is reflected in softer passage between hardened and tempered microstructure of knife

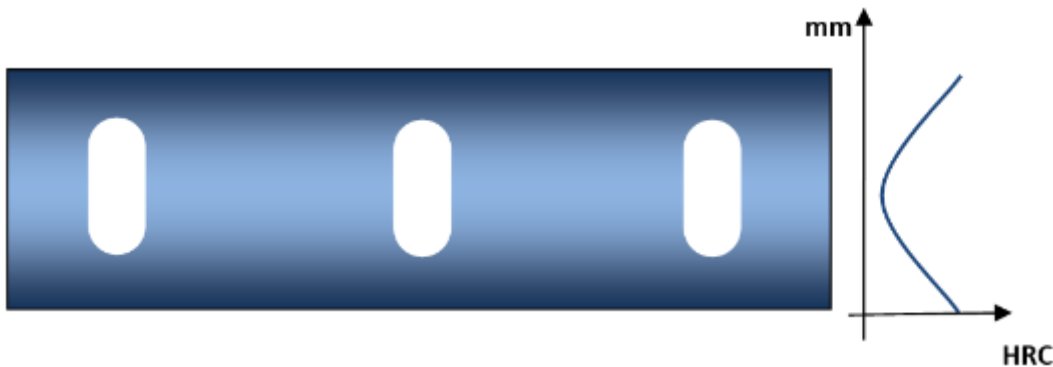


Ability of zone tempering

Zone tempering is done after quenching of knives in a vacuum furnace. The process is fully automated, computer controlled process that ensures a high degree of repeatability.

The advantage of zone tempering is reflected in softer passage between hardened and tempered microstructure of knife. That represents at the zone hardening knives bigger problem, because it is a sharp passage, which causes a small resistance against knife clamping and cutting forces. Therefore, the clamping grooves often leads to fractures of knives.

The advantage of the induction zone tempering is also the possibility of tempering the desired area of knife. Eg. : two bevel knife with a soft (tough) clamping area. By tempered clamping area is the material in the area of the grooves, more resistant to the notch effect. Therefore, at the critical point of grooves, does not appear micro-cracks, which can lead to uncontrolled fracturing of the knife.



Control of products

measuring machine Zoller



Interfacial control



Control of products

manual measuring using the measuring devices



Measuring (Mitutoyo, Format,...):

- Digimatic and mechanical Micrometers
- Digimatic, analog and special caliper (150 -1600 mm)
- Height Gauge
- Digimatic and dial indicator
- Micrometers, caliper accessories



Control of products

Measurement of surface roughness



Measuring assets are tested internally by the TRO regulation OP04 and in accredited laboratories.



hardness measuring
(rockwell / HRC)

Certificate



Location and logistics



300 km from Vienna, AT
350 km from Venice, IT
400 km from München, DE
400 km from Budapest, HUN



235 km from Port Koper, SLO



