



The image shows a technical drawing of a thread rolling attachment. At the top, there is a perspective view of a tapered cylindrical component. Below it, the main drawing is a cross-sectional view of a thread rolling die. It consists of two main circular rollers mounted on a central shaft. The shaft has a central hole and two smaller holes on either side. The rollers have a central hole and a smaller hole below it. The right roller is labeled with the number '2'. The rollers are shown with orange-colored curved sections at the bottom, representing the thread rolling process. The drawing includes various lines and circles indicating dimensions and features.

# Thread Rolling Attachments

**WAGNER**<sup>®</sup>  
TOOLING SYSTEMS

## Aiming At Your Success

### We claim:

- Only WAGNER® offers you all processes of producing external threads:
- Only the best is good enough for us! Top Quality has its origin in Pliezhausen:
- With our thread rolling attachments you save both time and money:
- Many types of threads can be rolled with our thread rolling attachment:
- A wide range of work pieces can be rolled with the thread rolling head

### We prove:

Rolling – cutting – reducing diameters.

Complying with our consequent quality system, only first class materials are processed to high quality tools.

You only need one thread rolling head. The rolls may be changed quickly.

Right-, left- handed threads, regular type- and fine threads, conical threads and cylindrical threads or threads against the collar as well as special threads.

WAGNER®-thread rolling attachments process all cold-mouldable materials.

**WAGNER®**  
**TOOLING SYSTEMS**



**Thread Cutting Head**



**Multi-Cutter Turning Head**



**Thread Rolling Head**

Dear reader,

we are a company specialised on the machining of external thread tools. With our thread cutting heads one does cut threads on different materials, in various sizes and to an enormous good price all over the world for more than 100 years.

The multi-cutter turning head was developed for cutting precise diameters, and our thread rolling head is used in firms dealing with metal-machining for thread cutting, where besides speed and good value an enormous load bearing capacity of the threads is necessary. Apart from the axial method, WAGNER® also offers thread rolling attachments for the tangen-tial machining of cold- moulded materials. On the following pages you will find more information about its wide range of application.

Yours sincerely,  
WAGNER Tooling Systems Baublies GmbH



**WAGNER® Thread Rolling Attachment with an adaptor with VDI-shank for CNC lathes**



**Thread Rolling Attachment with adaptor for single and multi spindle lathes with cross slide**

## Fields of Application

The tangentially working **WAGNER® thread rolling attachment** produces threads with a superior surface finish in the shortest machining times possible. The rolled threads are capable of being subjected to great stress thanks to their uninterrupted fibre orientation and they are characterised by their long-life fatigue strength and their resistance to wear and corrosion.

An adapter is used to mount the thread rolling attachment on the tool holder, e.g. turret disc. It moves at a constant rate of advance onto the rotating workpiece. The turning of the thread rolls is offset as they come into contact with the workpiece and it shapes the thread as the tool holder advances. Rapid retraction is initiated as soon as the thread rolls reach the centre of the workpiece and this releases the workpiece.

**High flexibility** is realised by the numerous adapter versions that are available for use with different machines, such as single and multi-spindle lathes as well as other special machines.

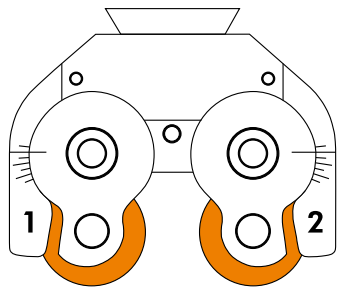
**Maximum productivity** can be realised by using precision thread rolls. These can be optimised to match the required pitch, diameter and shape of the rolling thread.

**The best rolling results in fine-pitch threads** are achieved by the use of our tool variant „F“. In case of threads with a very small pitch it is important to keep the axial play of the thread rolls as low as possible. By means of the patented WAGNER® axial play fine adjustment, the axial roll play can be minimised in 0.02 mm steps. The fine adjustment is available optionally for type B14, B16, B19 and can be upgraded by exchanging the gearing arms.

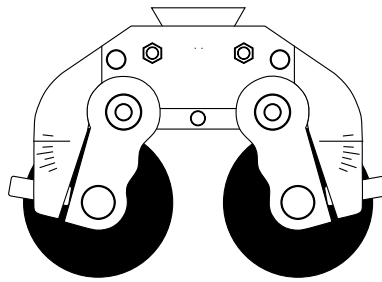
WAGNER® thread rolling attachments are available in eight different sizes and they have been designed so that an exceedingly large range of diameters can be machined with each tool.

The preferred **fields of application** for WAGNER® thread rolling attachments are:

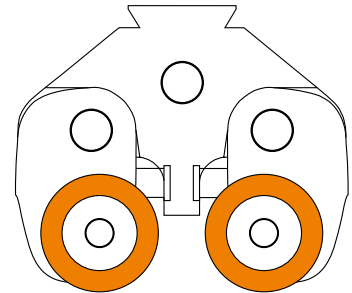
- Threads behind a collar
- Threads close up to a collar
- Very short threads
- Threads where the end of the workpiece is not free
- Threads with very short run-outs
- Anywhere where axial machining is not possible due to a lack of space



**Standard Build**



**Building type with  
left out tool body**



**Building type with  
built out rolls**

## Design Features

### Levelling the infeed

One roll rotates opposite towards the infeed direction of the thread rolling attachment. The forces resulting thereof will be evened out and guarantee a synchronous running of the thread rolls. This is also the case should both of the rolls don't touch the workpiece at the same time.

### Swinging support in the adapter

By this feature of construction an even distribution of the moulding forces onto the thread rolls will be achieved. This results in a reduced tool abrasion.

An automatic alignment towards the middle part of the workpiece is guaranteed through the swinging of the thread rolling attachment.

### Roll bearing at the side

The side forces working on the thread rolls are taken up by axial groove bearings. This has got a positive effect when rolling conical threads.

### The fast tool changing setting

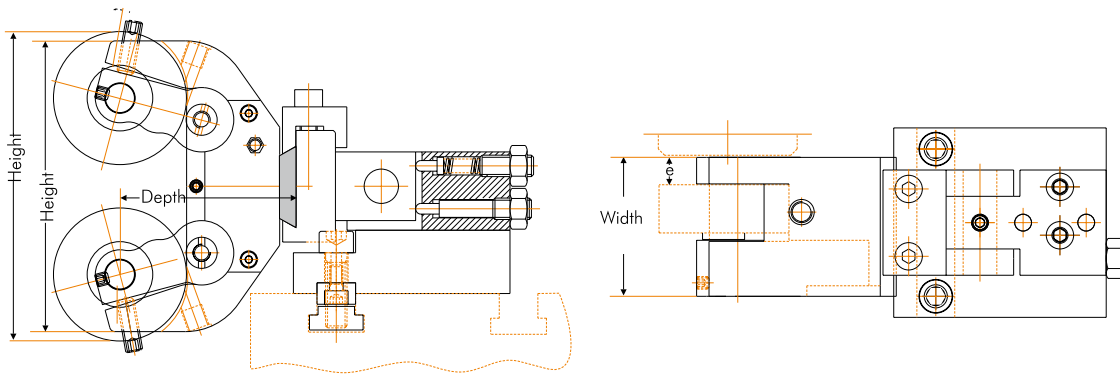
The dove tail guiding as connection between the thread rolling attachment and adapter allows a fast detachment of the thread rolling attachment for changing the thread rolls. By an adjustable stop the thread rolling attachment will be put back in the same position to the workpiece and will be clamped.

### Service unit

WAGNER® thread rolling attachments are designed service-friendly.

Additionally, we supply you with an oil mist lubrication.

A flawless lubrication can be achieved as well as the entering of dirt and chips into the thread rolling attachment can be avoided.



**Thread Rolling Attachment on a cross slide**

## Technical Data

### Application areas:

It can roll cylindrical and conical threads, left and right threads as well as fine-pitch and regular-pitch threads. Profile thread rollers are also available for special applications such as the rolling of lubricating, knurled or smooth grooves.

### Materials and preparation:

The material must be able to be reshaped when it is cold. The start diameter for thread rolling corresponds to approximately the middle pitch diameter of the thread that has to be rolled and must be prepared using the necessary accuracy.

Type	Metric regular-pitch threads Ø	Metric fine-pitch threads Ø	Maximum thread length (minus 2 x thread pitch)	Minimum gap between the collet chuck and the thread	Maximum advance force [N]	Weight [kg]	
						Tool with thread rolls	Adapter
B 8-W	1.6 - 12	2 - 13	14	8	1,600	1.0	approx. 1.5
B 10-W	2 - 16	2 - 16	19	11	2,500	2.1	approx. 1.7
B 14 <sup>▪</sup>	4 - 22	4 - 35	25.5	14	5,000	4.0	approx. 2.0
B 16 <sup>▪</sup>	6 - 22	6 - 45	25.5	14	5,700	4.3	approx. 2.0
B19 <sup>▪</sup>	8 - 27	8 - 52	31	17	9,800	7.5	approx. 3.0

B13-VB	3 - 10	3 - 24	15	0.5	4,000	4.5	approx. 2.0
B16-VB	12 - 16	12 - 42	18	0.5	4,000	5.4	approx. 2.0

- <sup>▪</sup> These types are also available with fine adjustment (F) of the roll play. The specific tool models differ in size. All sizes are given in mm unless otherwise noted.



**A rolled thread in front of the collar**



**Thread rolling behind a collar**

## The Special Features

With WAGNER® Thread Rolling Attachments a **long service life of the rolls** will be achieved by large rolls. Owing to their big size a long thread profile line for abrasion is available.

With WAGNER® Thread Rolling Attachments **very precise thread profiles** can be rolled, because the rolls are synchronised by very solid gear-box wheels. By means of an adjusting screw, thread rolls can be synchronised precisely. Thus a state of the art thread rolling process will be achieved.

WAGNER® Thread Rolling Attachments have **a large cut-out in the tool body** which is needed for building in of the matching thread rolls as far as size and diameter is concerned.

There are **low expenses of spare parts**, because WAGNER® Thread Rolling Attachments last long and are solidly built. Each tool should meet the highest standards of stability and rigidity.

WAGNER® Thread Rolling Attachments are **rigid** and **have a solid tool body**. Thus the moulding forces are taken up directly in the tool body during thread rolling without stressing the rolls.



**Plug body**



**Threaded joint**



**Injector Body**

## Examples Of Production And Performance

Workpiece:	Plug body	Threaded joint for cable supply	Injector body
Thread:	NPT 1/8 - 27	M 14 x 1,25	M 15 x 0,5
Material:	Machining steel	C 35	C 45
Tool size:	B 15-W	B 13-W	B 15-W
Shape of roll:	K 2	C 1	C 2
Rolling speed:	50 m/min	60 m/min	78 m/min
Necessary turnings of the workpiece:	19	18	27
Tool life quantity per pair of rolls:	150,000 pieces	40,000 pieces	80,000 pieces
Cooling lubricant:	Oil	Emulsion	Oil
Type of machine:	Multi spindle turning lathe	Single spindle turning lathe	Multi spindle turning lathe
Manufacturer:	Index	Gildemeister	Schütte
Type:	MS 42	CTX 200 E	AFH 130
Location of the spindle/ carriage:	Pos. 5.1	Revolver	Pos. 6
Type of infeed:	CNC-controlled 0.26 mm/rev	CNC-controlled 0.25 mm/rev	Cam-controlled 0.12 mm/rev
Remarks:	Compared to chasing thread is rolled to save time.	Thread is rolled owing to screw-in abrasion (surface density).	For stability reasons a rolled thread is needed.



# Comparison

## Thread cutting = chip removing

### Strength:

lower, as the fibre motion of the work piece will be interrupted.  
Notch effect in the groove of the thread.

### Manufacturing time:

Cutting time: 3 - 40 m/min.  
Deep thread profiles have to be cut in several steps.  
Higher primary processing times, but shorter set-up time because of tool default.

### Preparation of the moulding blank:

The initial diameter can be of the same size as the external diameter of the thread.  
It may also be bigger since an excessive amount can be removed.  
The moulding blank need not be chamfered.

### Subsequent machining:

A cut thread can be finished off at anytime.

### Finishing quality of the thread flank:

dependant on the work piece and the cutting conditions. The rougher the surface the more likely is it to corrode.

### Tool costs:

very low as the chasers can be reground.

### Material:

Non cold-moulded work pieces such as cast iron, annealed cast iron and gun-metal can be cut.

## Thread rolling = non-cutting

### Strength:

higher, because of strain hardening of the work piece. Fibre motion of the work piece won't be de-stroyed resulting thereof is a higher static and dyna-mic tensile strength.

### Manufacturing time:

Rolling time: 30 - 100 m/min.  
The thread will be rolled in just one step.  
Very short primary processing times, higher set-up times when setting the tools.

### Preparation of the moulding blank:

The initial diameter has to be prepared in tight mea-surements. The processing diameter approximately complies with the effective diameter.  
The exact diameter can be obtained through testing.  
You will need a chamfer with a chamfer angle of 12-30°.

### Subsequent machining:

Subsequent machining is hardly possible owing to the work piece's hardening of rolled threads.

### Finishing quality of the thread flank:

very high since it is burnished.  
Very low falling gradient.

### Tool costs:

high cost-effectiveness with large-volume because of the very high tool service life.

### Material:

All cold-moulded work pieces owing to the non-cutting moulding can be rolled. Easy to process for long-chipping work pieces.



**Axial Driven Tools**



**Radial Driven Tools**



**Multi-Cutter Turning Heads  
MSD**

## **WAGNER® Tooling Systems Offer Even More!**

A fourth tooling system is the multi-cutter turning head. With its four carbide tipped cutting tools it is able to turn more than common tools.

Furthermore, we offer a whole range of driven tools which find their use on your CNC lathe. They have various cutting edges in axial and radial positions to drill, mill and thread cut. With our additional equipment, we recommend ourselves as your competent partner within every area of metal machining.



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