

# Trough vibrators





# Rösler provides total finishing solutions



When it comes to surface finishing, Rösler is known to offer complete, well-engineered process solutions. Based on our comprehensive knowledge of **mass finishing** and **shot blasting technologies**, we can provide our customers with practically unlimited finishing solutions. In our state-of-the-art test lab, we conduct meaningful test trials to develop the optimum finishing processes for our customers because only complete solutions yield the best results. We are not simply offering specific surface finishing processes but we are also supply perfectly matched auxiliary equipment and consumables. This approach has proven to be highly successful and has established Rösler as the global technological and market leader, with groundbreaking innovations and extremely high quality standards.



In more than 60 countries we support our customers with a comprehensive network of Rösler sales branches and independent distributors.

Rösler is the only supplier in its field maintaining **test labs** all over the world, where we develop process solutions under actual operating conditions and select the most suitable equipment. This approach saves our customers not only long travel distances and high freight costs, but it also provides them with products and processes that have been extensively tested by our specialists under the most severe operating conditions.



### Global network of test labs

Test labs for mass finishing and shot blasting at the Rösler headquarters in Untermerzbach:

- More than 95 mass finishing and shot blast machines.
- About 2,700 m² (27,000 sqft)
   workspace

Our teams in USA, Great Britain, France, Netherlands, Belgium, Spain, Turkey, Romania, Italy, Austria, Switzerland, Russia, Brazil, Serbia and India provide similar test lab services.

### Complete solutions

Besides demanding high quality, environmentally safe and efficient products, our customers also prefer to purchase all process components from one single source. That is why we offer not merely the processing equipment but the complete package with perfectly matched consumables. This quarantees the best finishing results and absolute process safety. Our global service teams take care of the delivery and the installation for you. Qualified engineers train our customers right at their location. And, of course, our after-sales service members will answer all of your questions. Quick supply of all spare parts and professional consultation by our experienced process specialists ensure that your finishing processes are always running smoothly.

### Team spirit

Rösler is a dynamic company, where the initiative and dedication of each team member plays a central role. Systematic advanced professional training and cooperative, lean management are essential elements of our corporate philosophy. With our established internship programs, we are able to development of tomorrow's professional team members, today.







# Typical applications

# Machine Overview



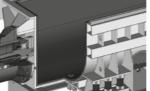


Trough vibrator



Trough vibrator TUD





Trough vibrator details



Trough vibrator TUM



17



Trough vibrator TE Trough vibrator Minor-T



6 - 7

8 - 9

12

13

Trough vibrator TU





Trough vibrator RMO



Trough vibrators - custom engineered solutions



18 - 19



Trough vibrator TS



Trough vibrator TSD



## Trough vibrators

Trough vibrators are mass finishing machines that can be used for a wide range of applications. They are mostly employed for the processing of delicate, heavy, long or bulky work pieces. Even components with lengths of 6,000 mm (20 ft) or diagonal cross sections of 1,000 mm (3.3 ft) can be processed in the powerful Rösler Trough mass finishing machines.















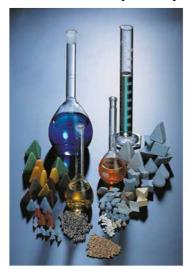
### Fields of application

Trough vibrators are suitable for all mass finishing objectives, such as: deburring, surface grinding, edge radiusing, polishing, pressure deburring and ball burnishing of stampings, castings, forgings or machined components. They are mainly used for single piece processing but multiple work piece treatment is also possible, for example, in Troughs with built-in dividers, or with the work pieces mounted onto special fixtures.

### Functional description

Depending on the machine type and size, Rösler Trough vibrators are equipped with different vibratory drive systems. The induced vibration causes a rotational movement of the mix of grinding or polishing media and work pieces in the work bowl. With certain work pieces part-on-part processing, without any media, is also possible. The addition of fresh water or process water cleaned in Rösler centrifugal recycling systems supports the cleaning of the work pieces and ensures stability of the finishing processes.

### Media and compound production



Rösler produces the most comprehensive range of mass finishing media and compounds in the world. 60 years of R & D and production are the basis for more than 8,000 different types of compounds and ceramic & plastic media. Our global customers can select the right compounds and media for every conceivable surface finishing application.













## Technical details of the Rösler Trough vibrators

The diverse use of Trough vibrators requires a particularly efficient machine design. That is why our engineers are working closely with our process specialists to further refine and improve an already excellent equipment concept. At Rösler you will find innovative equipment designs with exceptionally high quality!

### Quality/Work bowl design

- ▶ U shaped work bowl profile; optional curvature in the work bowl wall improves the movement of the media/work piece mix
- Sturdy welding construction with special ribbing, heat treated for stress relief
- T groove clamping of the dividers allows easy adjustment of the length of the processing chambers
- ▶ Stainless steel process water distribution pipe over the entire work bowl length
- Work bowl placed on special coil springs for optimum transfer of the vibratory energy
- Media unload plug
- Easily replaceable drains with built-in screens in the work bowl bottom

### 2 Multiple vibratory drive systems

Rösler offers the largest Trough vibrator range in the industry. The various machine types are equipped with different drive systems suitable for a wide spectrum of applications.

### ▶ TE - range / Minor-T / RMO:

Direct drive vibratory foot motor, mounted underneath the work bowl

### TS - range:

Two imbalance units are mounted to the front and rear walls of the work bowl; driven by electric motors equipped with special vibration absorption device

### TSD - range:

Two Rösler vibratory motors are directly mounted to the front and rear walls of the work bowl

### 3 Perfect wear lining

The wear linings of all Rösler machines are made in-house. Before a wear liner is placed into the work bowl, the surface area is shot blasted to improve its adhesion characteristics. Customers can choose between:

- ▶ Hot poured polyurethane with special molds
- Sprayed polyurethane

# Glued-in rubber sheets Glued-in polyurethane sheets 3 TSD-range

Machine base

The machine base design of all our Trough vibrators is characterized by heavy-duty and sturdy welding construction. Special coil spring sockets on the machine base ensure that no vibrations are transferred from the work bowl to the machine base. Large service doors allow easy access to any areas that require maintenance. Vibration dampers minimize the transfer of vibrations to the building floor.

### 5 Easy to operate machine controls

- Contactor or PLC control panels
- Variable speed of the drive motor optional
- Precise control of the process water dosing

### 6 Precise compound and water dosing

- Fresh water dosing with the waste water going to drain, or recycling of the process water
- Control valves for process water dosing
- Water flow meters
- Precise setting of the compound dosing







### TUD - range:

One drive motor mounted underneath the work bowl. The motor drives multiple imbalance units placed in-line over the complete work bowl length.

### TUM - range:

Drive motor mounted underneath the center of the work bowl. The motor drives multiple In-line imbalance units placed left and right of the drive motor.

### TU - range:

Drive motor equipped with special vibration absorption device. The motor drives multiple in-line imbalance units mounted underneath the work bowl.







Adjustment of the process intensity by different machine speeds.

Standard applications:

Standard speed = 1,500 RPM;

Special applications like ball burnishing/ vibro peening and pressure deburring: Standard speed = up to 3,000 RPM

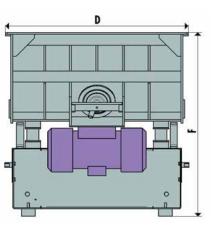
Variable speed:

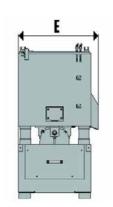
Optional with variable frequency drive (VFD)

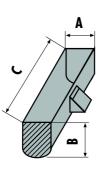
# Trough vibrators, model range TE

"Economy" Trough vibrators of the TE – range are equipped with a vibratory foot motor mounted underneath the work bowl. This direct drive system generates a powerful vibratory force at relatively low energy costs and allows for a compact machine design.

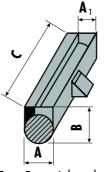








Type A standard work bowl profile



**Type B** special work bowl profile

TE- drive system

Trough vibrators, model range TE-30	Туре А	Type B	Drive speed			Diı	mensions (m	ım)			Тур А	Тур В	Drive power
	TUTA	792. <sup>♣1</sup> Γ	3,000 RPM		Work bowl	with lining		Cor	mplete mach	nine			
	B A	A B	"super speed"	A	<b>A</b> ,	В	С	D	E	F	work bowl volume (I)	work bowl volume (I)	(kW)
R 300/600	•	•	•	300	240	420	600	890	480	950	70	40	1.3
R 360/870	•	-	•	360	-	440	870	1,160	520	1,000	120	-	2.2

Trough vibrators, model range TE-15	Type A	Туре В	Drive speed			Di	mensions (n	nm)			Туре А	Drive power
			1,500 RPM		Work bow	l with lining	ı	Co	mplete mac	hine	(Type B)	
	B A	A B		А	<b>A</b> ,	В	С	D	E	F	work bowl volume (l)	(kW)
R 300/600	•	•	•	300	240	420	600	890	480	950	70 (40)	0.9
R 360/870	•	-	•	360	-	440	870	1,160	520	1,000	120	1.6
R 400/1200	•	-	•	400	-	490	1,200	1,340	640	1,050	210	1.6
R 430/1100	•	-	•	430	-	540	1,100	1,300	680	1,220	230	1.6
R 500/1000	•	-	•	500	-	580	1,000	1,200	710	1,150	260	2.2
R 500/1500	•	-	•	500	-	580	1,500	1,780	800	1,150	390	2.5
R 500/1750	•	-	•	500	-	620	1,750	1,920	850	1,150	490	3.6
R 580/1100	•	-	•	580	-	640	1,100	1,370	855	1,370	360	1.6
R 600/1000	•	-	•	600	-	680	1,000	1,200	940	1,280	360	2.5
R 600/1500	•	-	•	600	-	680	1,500	1,700	940	1,280	550	6.0
R 650/1500	•	-	•	650	-	730	1,500	1,700	1,030	1,280	640	6.0
R 670/1950	•	-	•	670	-	650	1,950	2,230	1,010	1,220	750	6.0
R 750/1200	•	-	•	750	-	800	1,200	1,420	1,170	1,300	640	6.0
R 750/1600	•	-	•	750	-	800	1,600	1,870	1,170	1,300	860	2.5 6.0 6.0 6.0 6.0 7.5
R 800/1500	•	-	•	800	-	850	1,500	1,740	1,195	1,400	910	40
R 850/1200	•	-	•	850	-	880	1,200	1,470	1,215	1,400	800	6.0
R 910/1200	•	-	•	910	-	970	1,200	1,470	1,325	1,680	950	7.5

# Trough vibrators, model range Minor

The compact Minor model is equipped with the same direct drive system as the TE range. Compact and powerful, this machine can be used for finishing a wide variety of small work pieces produced in relatively small batches. Part-on-part processing without any media is also possible in these machines (for dimensions please refer to the drawings on page 10).



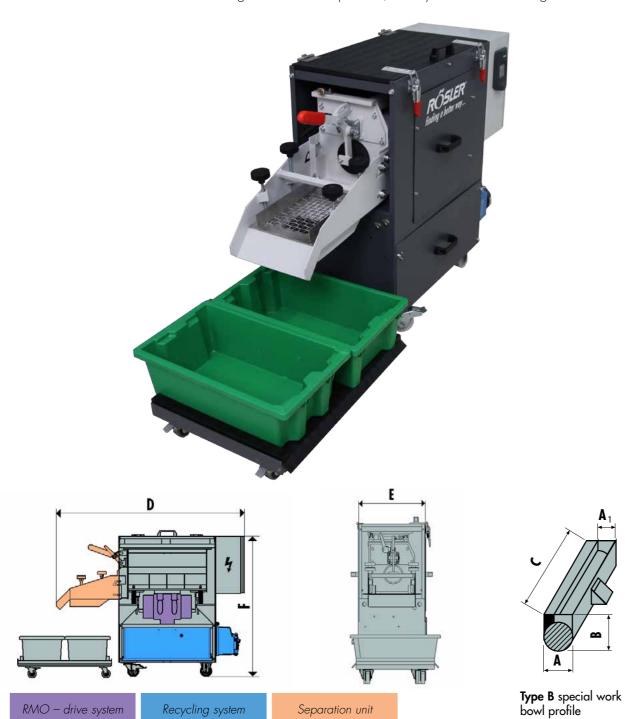
					•						
Trough vibrators, model range Minor		Drive speed				Drive power					
	793 <sup>A</sup> ₁ Γ	3,000 RPM		Work bowl	with lining		Co	mplete mach			
	B A	"super speed"	A	A,	В	С	D	E	F	Work bowl volume (I)	(kW)
R 180/530 TE-30	•	•	180	120	230	530	650	360	600	10	0.65
R 210/530 TE-30	•	•	210	150	270	530	660	330	670	20	0.65

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11

# Trough vibrators, model range RMO

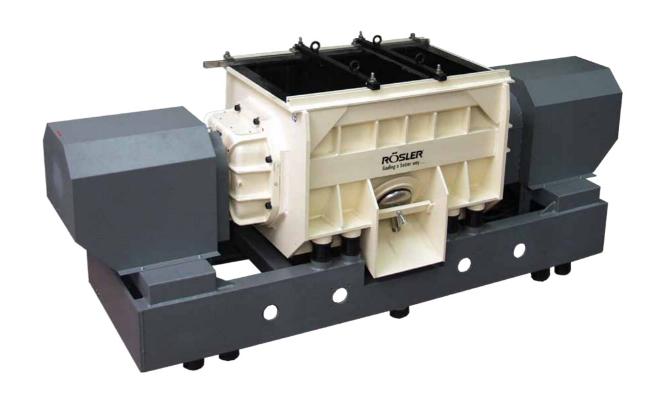
Rösler "mobile" Trough vibrators, model range RMO, with built-in separation unit can be easily integrated into manufacturing lines. This machine type, equipped with process water recycling tank, is ideal for any wet mass finishing processes. The RMO allows cost efficient surface finishing in stand-alone operation, directly in the manufacturing line.

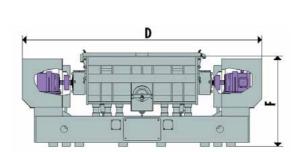


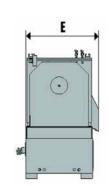
Trough vibrators, model range RMO		Drive speed				Drive power						
	A <sub>1</sub>	3,000 RPM		Work bowl with lining Complete machine								
	Ä	"super speed"	Α	<b>A</b> 1	В	С	D	E	F	Work bowl volume (I)	(kW)	
RMO 180/530 TE-30	•	•	180	120	230	530	1,250	485	990	10	0.65	
RMO 210/530 TE-30	•	•	210	150	270	530	1,250	525	1,025	20	0.65	

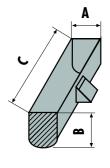
### Trough vibrators, model range TS

The TS-30 Trough vibrators, equipped with two imbalance units mounted to the front and rear walls of the work bowl, are ideal for ball burnishing. This unique vibratory drive system guarantees an intensive, homogeneous movement of the media/part mix over the entire work bowl length.









**Type A** standard work bowl profile

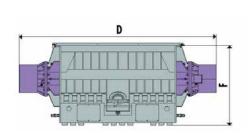
T	$\varsigma$ – .	drive	system

Trough vibrators,		Drive speed			Dimension	ons (mm)				Drive power
model range TS-30		3,000 RPM	Wor	k bowl with l	ining	Co	mplete mach	ine		
	B A	"super speed"	Α	В	С	D	E	F	Work bowl volume (l)	(kW)
R 250/1150	•	•	250	400	1,150	2,710	600	970	100	2 x 3.0
R 300/1200	•	•	300	400	1,200	2,730	550	950	130	2 x 3.0
R 400/1200	•	•	400	480	1,200	2,910	640	1,040	210	2 x 4.0
R 500/800	•	•	500	580	800	2,355	715	1,100	210	2 x 4.0
R 500/1000	•	•	500	580	1,000	2,590	715	1,100	260	2 x 4.0
R 500/1500	•	•	500	610	1,500	3,525	840	1,100	410	2 x 7.5

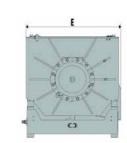
### Trough vibrators, model range TSD

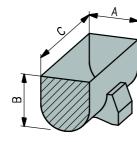
The TSD drive system, based on special vibratory motors built by Rösler, is very powerful, allows for a compact machine design and can be used for practically any finishing applications. The vibratory energy is directly transferred from the front and rear work bowl walls into the media/part mix.





TSD – drive system





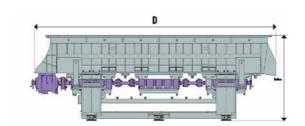
**Type A** standard work bowl profile

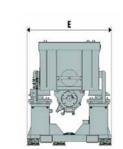
Trough vibrators,	Туре	Drive speed			Dimensio			Drive power		
model range TSD	A B	1,500 RPM	Wor	k bowl with	lining	Cor	mplete macl	hine	W 11 1	
	A B		Α	В	С	D	E	F	Work bowl volume (l)	(kW)
R 425/2700	•	•	425	540	2,700	4,240	715	1,050	560	2 x 4.0
R 500/2000	•	•	500	620	2,000	3,550	810	1,065	560	2 x 4.0
R 550/2200	•	•	550	670	2,200	3,730	900	1,130	730	2 x 4.0
R 600/2000	•	•	600	680	2,000	3,550	950	1,135	730	2 x 4.0
R 600/2500	•	•	600	680	2,500	4,040	950	1,135	920	2 x 4.0
R 600/3000	•	•	600	680	3,000	4,570	950	1,180	1,100	2 x 7.5
R 650/2000	•	•	650	740	2,000	3,550	1,000	1,155	870	2 x 4.0
R 750/3000	•	•	750	810	3,000	4,580	1,120	1,210	1,640	2 x 7.5
R 800/2000	•	•	800	810	2,000	3,700	1,180	1,250	1,150	2 x 7.0
R 800/2200	•	•	800	810	2,200	3,840	1,180	1,250	1,270	2 x 7.0
R 800/3000	•	•	800	810	3,000	4,620	1,180	1,250	1,730	2 x 15.0
R 1000/1500	•	•	1,000	1,050	1,500	3,180	1,360	1,470	1,410	2 x 7.0
R 1000/2000	•	•	1,000	1,050	2,000	3,600	1,380	1,470	1,880	2 x 15.0
R 1000/3000	•	•	1,000	1,050	3,000	4,620	1,380	1,470	2,820	2 x 15.0
R 1100/2000	•	•	1,100	1,050	2,000	3,560	1,455	1.470	2,050	2 x 15.0
R 1200/2300	•	•	1,200	1,300	2,300	3,960	1,600	1,720	3,230	2 x 15.0
R 1300/2000	•	•	1,300	1,150	2,000	3,600	1,690	1,500	2,620	2 x 15.0
R 1400/1800	•	•	1,400	1,240	1,800	3,400	1,800	1,770	2,740	2 x 15.0
R 1600/1500	•	•	1,600	1,400	1,500	3,160	2,040	1,920	2,940	2 x 15.0

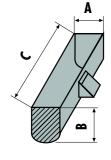
### Trough vibrators, model range TUD

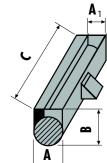
Trough vibrators have been traditionally used for the finishing of long, bulky components that require cost effective deburring, edge radiusing and a homogeneous surface finish. The TUD model range is utilizing a proven drive concept from our continuous feed in-line systems. The combination of a special Rösler drive motor, with multiple imbalance units, ensures the intensive movement of the media/part mix, even in machines with lengths of up to 6,000 mm (20 ft).











TUD – drive system

Type A standard work bowl profile

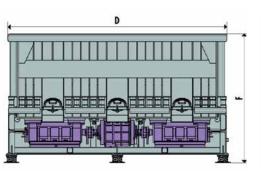
**Type B** special work bowl profile

Trough vibrators, model range TUD	Туре А	Туре В	Drive speed			Dii	mensions (n	nm)					Drive power
		751.A1	1,500 RPM		Work bow	with lining	ı	Cor	mplete macl	hine	Туре А	Туре В	
	B A	A A		Α	<b>A</b> ,	В	с	D	E	F	work bowl volume (I)	work bowl volume (I)	(kW)
R 425/4600	•	•	•	425	330	520	4,600	5,115	1,420	1,490	920	650	18.0
R 425/6600	•	•	•	425	330	520	6,600	7,115	1,460	1,490	1,330	930	18.0
R 550/4000	•	•	•	550	430	650	4,000	4,900	1,370	1,670	1,300	950	18.0
R 550/6000	•	•	•	550	430	650	6,600	6,775	1,370	1,670	2,140	1,560	18.0
R 650/4000	•	•	•	650	490	720	4,000	4,865	1,370	1,670	1,690	1,320	18.0
R 650/6000	•	•	•	650	490	720	6,000	6,775	1,370	1,670	2,530	1,990	18.0
R 850/6000	•	•	•	800	680	930	6,000	7,060	1,885	2,400	4,050	3,010	40.0

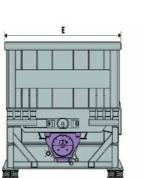
# Trough vibrators, model range TUM

The TUM drive concept allows for the building of large Trough vibrators for processing long, bulky components. The large width and length of these machines allows for the efficient treatment of very large work pieces. The location of the powerful drive motor underneath the center of the work bowl, with multiple in-line imbalance units placed left and right, allows for automatic unloading of the work bowl.

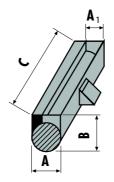








Type A standard work bowl profile



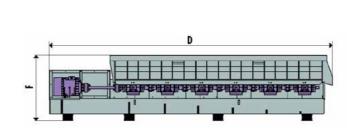
**Type B** special work bowl profile

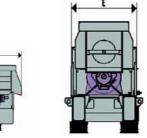
Trough vibrators, model range TUM	Туре А	Туре В	Drive speed			Dir	mensions (m	ım)					Drive power
	В	B <sup>A</sup> ,	1,500 RPM		Work bowl	with lining	1	Cor	nplete mach	nine	Туре А	Туре В	
	Ā	A		A	A <sub>1</sub>	В	С	D	E	F	work bowl volume (l)	work bowl volume (I)	(kW)
R 850/4000	•	•	•	850	680	930	4,000	4,500	1,885	2,400	2,850	2,260	40.0
R 1500/3300	•	-	•	1,500	-	1,360	3,300	3,860	1,965	2,190	5,930	-	40.0

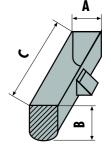
### Trough vibrators, model range TU

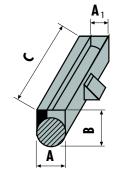
Ball burnishing and vibro peening require media made from carbon steel or stainless steel. This heavy load requires an especially powerful drive system with a speed of 3,000 RPM. Such a high speed can also be beneficial for other mass finishing











TU – drive system

 $\textbf{Type A} \ \text{standard work}$ bowl profile

**Typ B** special work bowl profile

Trough vibrators, model range TU	Type A	Type B	Drive speed			Dir	mensions (n	nm)					Drive power
	В	- B	3,000 RPM		Work bowl	with lining		Cor	nplete macl	nine	Туре А	Туре В	
	A	A	"super speed"	Α	<b>A</b> ,	В	с	D	E	F	work bowl volume (I)	work bowl volume (I)	(kW)
R 250/4200	•	-	•	250	-	310	4,200	5,530	660	1,030	290	-	18.5
R 350/4000	•	•	•	350	295	440	4,000	5,530	780	1,270	560	380	18.5
R 350/6000	•	•	•	350	295	440	6,000	7,530	780	1,270	840	570	18.5

16

# Trough vibrators — the perfect machine concept for many applications

### Special Trough vibrator solutions

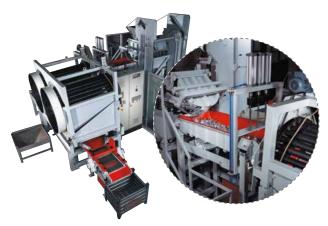
Finishing and washing of airplane components with lengths of up to 6,000 mm (20 ft).





### **Automated Trough vibrators**

Machines equipped with automatic work piece unloading and separation systems. Application: Removal of gates and risers from zinc die-castings with simultaneous deburring and general improvement of the surface finish.





### Trough vibrators with unload gates

"Antiquing"— edge radiusing and changing of the surface pattern – of natural stones with simultaneous separation of the media and the work pieces.



### Noise protection

The suppression of noise creates a comfortable working environment. The noise level emitted by mass finishing vibrators depends on the machine size, the process intensity, the shape and size of the media and the work pieces. Without noise protection the noise levels can vary between 75 and 140 dB(A). Typically these values range from 80 to 95 dB(A).

With noise protection, for example, with complete cabins, the noise levels can be substantially reduced.







### **Dividers**

The work bowl is divided into separate chambers. This is essential for preventing part-on-part contact, when processing several delicate work pieces in a single batch. The T - groove clamping system for fastening the dividers allows for easy adjustment of the processing chamber's length.



### Special work piece fixtures



To prevent part-on-part contact, multiple delicate work pieces can be mounted to a special fixture.

### Trough vibrators with special material handling



Loading and removal of high value work pieces into and from the work bowl with custom engineered handling systems.



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