ATLINGS MASKINFABRIK AB

SELF CENTERING STEADY REST
LE / LZ / LA

This catalog lists all self centering Steady Rests and their accessories.

Note: Dimensions and data given in this catalog may not always correspond to the latest design features and are subject to change without notice.

Self-centering Steady Rests

Application, operation and construction

APPLICATIONS

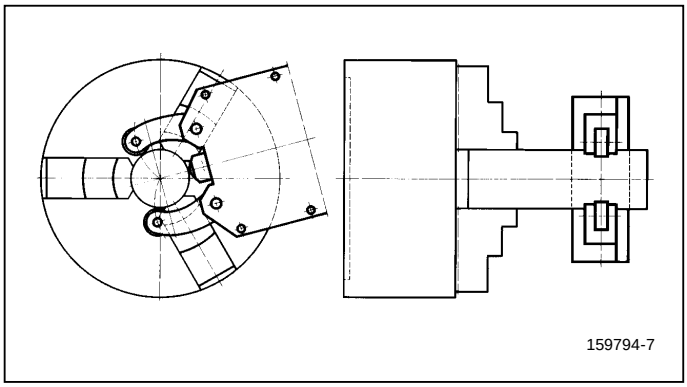
Steady Rests are an essential accessory for turning machines during the manufacture of slim shaft type work-pieces, which under the influence of cutting loads become unstable with a liability to bend or deflect. Without the use of steady rests the physical properties are not maintained and problems of concentricity and surface finish (chatter) become apparent.

The bulk of ATLING STEADY REST installations are supporting shafts held between centers with the steady fixed to the machine bed. It's possible to relocate the steady along the bed length for variations in shaft lengths. In many cases it is an advantage to have two or more steadies to support the workpiece in appropriate positions.

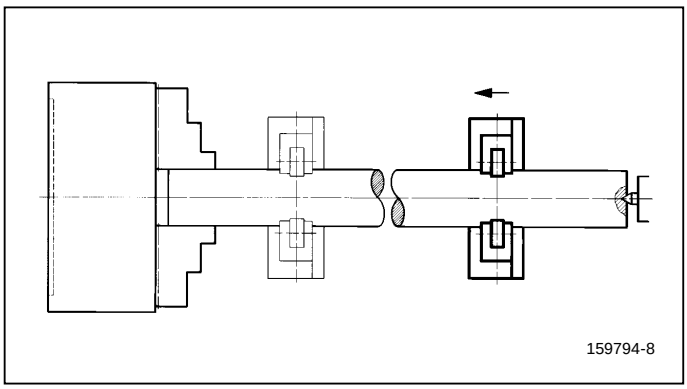
In cases of extreme workpiece length it is recommended that a traveling steady be installed. This enables proper support against the cutting forces. Under these circumstances a programmable slide is essential.

A further possible application is the "flying" mode, whereby the workpiece is chucked but the tailstock is withdrawn for a facing or centering operation.

For best results our steadys should be used on a pre turned surface.



Picture 1 *Fixed steady rest for supporting the free end of overhung workpieces.*



Picture 2 *Traveling steady rests, e.g. for machining long shafts.*

INSTALLATIONS

The self-centering ATLING Type L Steady Rest is a result of many years of development in design, manufacture and application. It is suitable to fit to practically any CNC or conventional lathe in the most critical space conditions. Mounting the unit requires a fixed bracket (stationary applications) or a moving slide (travelling applications).

Many machine tool manufacturers can offer the bracket as an option, or we can supply the necessary mounting accessories for any flat or slant bed machine.

By knowing the machine details we can supply accessory brackets to suit special applications.

In addition to the standard Type L, a variety of special designs (size variations, external dimension changes, mounting, operating and roller options etc) can be supplied.

OPERATION

ATLING Type L Steady Rests are typically operated by hydraulics or pneumatics.

Communication between the machine tool manufactures dealer and end user is imparitive, to ensure proper integration of controls, positioning signals, mounting brackets, lubrication decisions, and tool clearance considerations.

Application, operation and construction

Construction

The ATLING-Steady Rests Type L housings are made from high-strength cast iron. All moving parts are made from tempered and hardened steel. Wiper seals are fitted to the housing at the openings for roller levers and centerpart to prevent ingress of coolant and chips. Manual or automatic lubrication and an air barrier provide precision, smooth running and an extraordinary life span for the inner parts.

The three roller levers enclose the workpiece at an angle of 120 degrees. Both the wide opening roller levers and the center support arc towards the center of the workpiece through precisely machined curved surfaces.

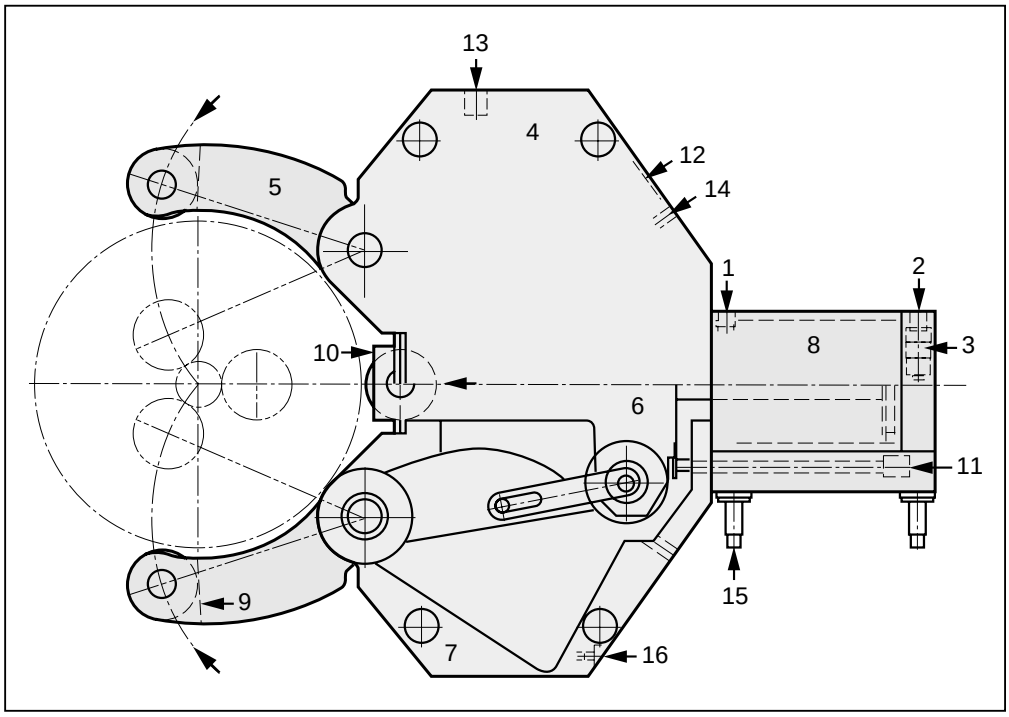
This patented design of the precise machined angle on the roller levers gives us far superior performance of uniform camping force throughout the camping range of each steady.

ATLING-Steady Rests are made according to the latest technical improvements.

This catalog contains detailed technical data and applications of the Atling Steady Rests and their options.

Contact the local Atling representative for further details.

For the L-version steady, the control curves are put on the roller levers.
This version has several advantages:
- *increased clamping range compared to the outside measurements.*
- *uniform clamping force for the complete clamping range.*
- *centering can be repeated with higher accuracy.*



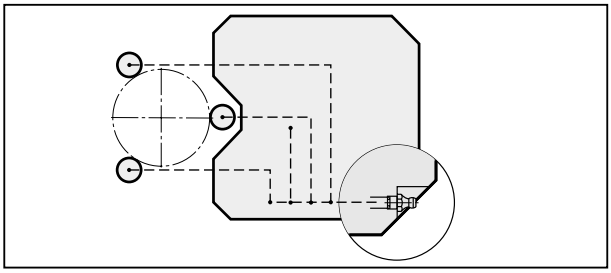
1. *Connection for opening of cylinder*
2. *Connection for closing of cylinder*
3. *Check valve*
4. *Cover*
5. *Lever*
6. *Piston rod*
7. *House*
8. *Cylinder*
9. *Wiper, lever/roller*
10. *Wiper, piston rod/roller*
11. *Stroke control - accessories*
12. *Name plate*
13. *Thread for eye bolt*
14. *Air barrier or Drainage*
15. *Proximity switch*
16. *Manual or Automatic lubrication*

System description - Steady Version LE/LZ/LA

Design features

Manual lubrication

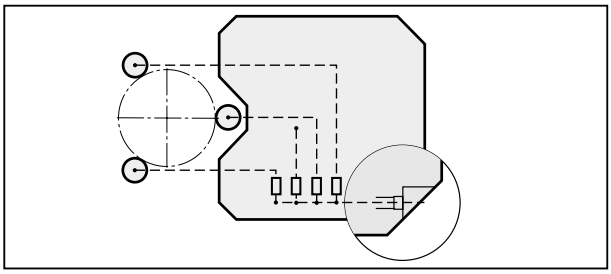
Steady Rests furnished with manual lubrication are thoroughly greased internally before delivery. Continual lubrication of the steady rest and all its moving parts is performed through one, easily accessible, single grease nipple.



Automatic lubrication

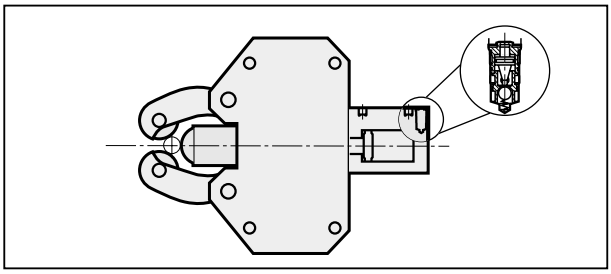
All lubrication points are provided with oil through integrated metering valves. Lubrication intervals depend on the amount of load and other circumstances that affects the steady rest.

Note: Machine needs to be equipped with auto-lube system, in order to use this feature. If required, Atling can provide.



Check valve

Check valves are delivered as standard on all cylinders. If the main pressure suddenly drops, the check valve keeps the cylinder pressure in order to prevent accidents. When turning tapered workpieces or applied as a travelling unit the check valve has to be disconnected.

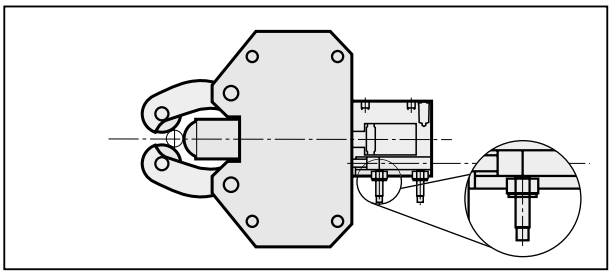


Stroke control

Stroke control is made possible by two separate proximity switches.

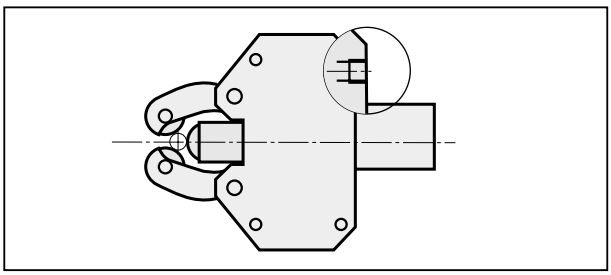
Proximity switch 1: Monitors the maximum open position
The switch is infinitly adjustable.

Proximity switch 2: Monitors a determinated diameter position
The proximity switch is infinitly adjustable to any desired diameter of work piece.



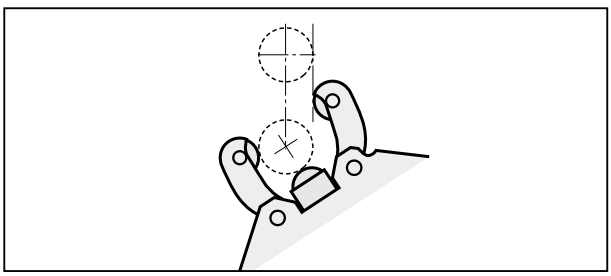
Air barrier

Compressed shop air can be connected to the housing to discousage chips and coolant from entering the housing.



Swing-away lever

The swing-away lever allows automatic workpiece loading from above.



Type designation

Steady Rests with:	Rear mounted cylinder		Side mounted cylinder	
	Manual lubrication	Automatic lubrication	Manual lubrication	Automatic lubrication
Check valve	**L E**	**L Z**	**L E B**	**L Z B**
Check valve Stroke control	**L E W**	**L Z W**	**L E B W**	**L Z B W**
Check valve Swing-away lever	**L E A**	**L Z A**	**L E B A**	**L Z B A**
Checkvalve Swing-away lever Stroke control	**L E A W**	**L Z A W**	**L E B A W**	**L Z B A W**

Steady size and performance data

	Total max. gripping force	Max. peripheral speed of rollers	Centering accuracy	Repeatability	Weight	Min. gripping diameter	Max. gripping diameter	Roller diameter	Rear mounted cylinder	Piston area	Side mounted cylinder	Piston area	Max. operating pressure
Steady size = Gripping range	daN	m/min	mm	mm	kg	mm	mm	mm	mm	cm^2	mm	cm^2	bar
3 - 65	*300	1190	0,02	0,005	6	3,2	65	19	40	12,6	40	12,6	25
8 - 100	*1200	930	0,02	0,005	17	8	100	35	50	19,6	50	19,6	60
12 - 120	*1200	930	0,02	0,005	24	12	120	35	50	19,6	50	19,6	60
12 - 155	*3000	805	0,02	0,005	35	12	155	47	80	50,2	65	33,2	60
20 - 170	*3500	890	0,04	0,005	42	20	170	52	80	50,2	65	33,2	70
35 - 245	*4500	890	0,04	0,005	60	35	245	52	90	63,6	90	63,6	70
50 - 310	*5500	655	0,06	0,005	100	50	310	62	100	78,5	90	63,6	70

*Gripping force = Piston area x max. operating pressure

Order code example

Steady rest type	**L Z B A W**	**35 - 245**	**1 5 8 7 5 7**
Designation		Steady size	Model number
L	Type	Gripping range	See page 7
	Check valve		
Z	Automatic lubrication		
B	Side mounted cylinder		
A	Swing-away lever		
W	Stroke control		

Model number

Steady Rests with:
Check valve

	Rear mounted cylinder		Side mounted cylinder	
	Manual lubrication	Automatic lubrication	Manual lubrication	Automatic lubrication
Steady size	**L E**	**L Z**	**L E B**	**L Z B**
3 - 65	158650	158561	158706	159707
8 - 100	158654	158655	158710	158711
12 - 120	158658	158659	158714	158715
12 - 155	158662	158663	158718	158719
20 - 170	158666	158667	158722	158723
35 - 245	158670	158671	158726	158727
50 - 310	158674	158675	158730	158731

Steady Rests with:
Check valve
Stroke control

Steady size	**L E W**	**L Z W**	**L E B W**	**L Z B W**
3 - 65	158652	158563	158708	159709
8 - 100	158656	158657	158712	158713
12 - 120	158660	158661	158716	158717
12 - 155	158664	158665	158720	158721
20 - 170	158668	158669	158724	158725
35 - 245	158672	158673	158728	158729
50 - 310	158676	158677	158732	158733

Steady Rests with:
Check valve
Swing-away lever

Steady size	**L E A**	**L Z A**	**L E B A**	**L Z B A**
3 - 65	158678	158579	158734	159735
8 - 100	158682	158683	158738	158739
12 - 120	158686	158687	158742	158743
12 - 155	158690	158691	158746	158747
20 - 170	158694	158695	158750	158751
35 - 245	158698	158699	158754	158755
50 - 310	158602	158603	158758	158759

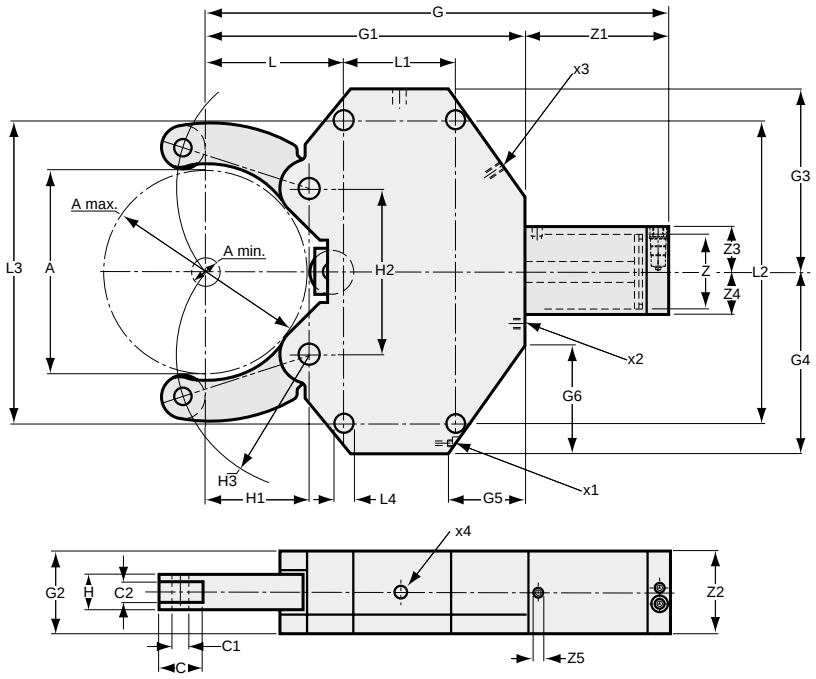
Steady Rests with:
Check valve
Swing-away lever
Stroke control

Steady size	**L E A W**	**L Z A W**	**L E B A W**	**L Z B A W**
3 - 65	158680	158581	158736	159737
8 - 100	158684	158685	158740	158741
12 - 120	158688	158689	158744	158745
12 - 155	158692	158693	158748	158749
20 - 170	158696	158697	158752	158753
35 - 245	158600	158601	158756	158757
50 - 310	158604	158605	158760	158761

Steady Rests (standard models)
are delivered with

Check valve
1 Set of cylindrical rollers and
1 Set of roller wiper seals as standard equipment.

LE/LZ with Rear mounted cylinder



x1 *M8*1*
Automatic Lubrication

x2 *M12*1*
Proximity switch
Stroke control

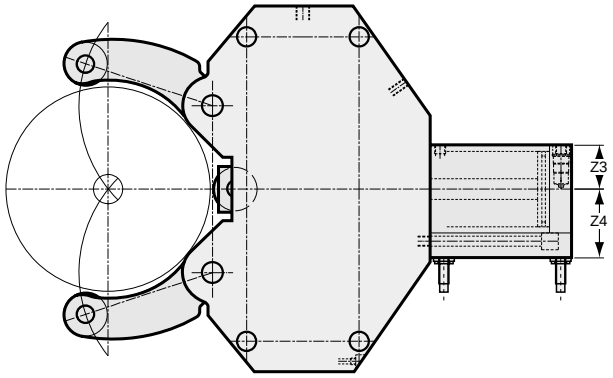
x3 *R1/8"*
Air barrier

x4 *Transport*

Steady rest size = Gripping range			**3 - 65**	**8 - 100**	**12 - 120**	**12 - 155**	**20 - 170**	**35 - 245**	**50 - 310**
Gripping range	A min.	[mm]	3,2	8	12	12	20	35	50
	A max.	[mm]	65	100	120	155	170	245	310
	A	[mm]	68	103	125	158	175	248	320
Rollers	C	[mm]	19	35	35	47	52	52	62
	C 1	[mm]	6	15	15	20	20	20	30
	C 2	[mm]	12	19	19	25	25	25	29
Lever	H	[mm]	22	36	36	42	42	42	60
	H 1	[mm]	40	60	65	90	102,5	125	169
	H 2	[mm]	60	90	120	146	160	200	250
	H 3	[mm]	50	75	88	116	130	160	210
Housing	G	[mm]	229	309	355	426	445	555	668
	G 1	[mm]	135	200	235	290	305	386	470
	G 2	[mm]	57	70	70	90	90	100	110
	G 3	[mm]	70	102,5	142	157,5	157,5	219	250
	G 4	[mm]	70	102,5	142	157,5	157,5	219	250
	G 5	[mm]	5	42	69	30	45	92	106
	G 6	[mm]	5	42	75	30	45	132	106
Hole pattern	L	[mm]	51	70	77	115	123	166	178
	L 1	[mm]	64	85	102	135	135	135	210
	L 2	[mm]	118	170	220	262	262	365	400
	L 3	[mm]	118	170	210	262	262	365	400
	L 4	[mm]	11	14	14	18	18	23	23
Cylinder	Z	[mm]	40	50	50	80	80	90	100
	Z 1	[mm]	94	109	120	136	140	169	198
	Z 2	[mm]	57	70	70	90	90	100	110
	Z 3	[mm]	35	37,5	37,5	50	50	52,5	55
	Z 4	[mm]	25	37,5	37,5	50	50	52,5	55
	Z 5	[Zoll]	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Piston area		[cm^2]	12,6	19,6	19,6	50,2	50,2	63,6	78,5

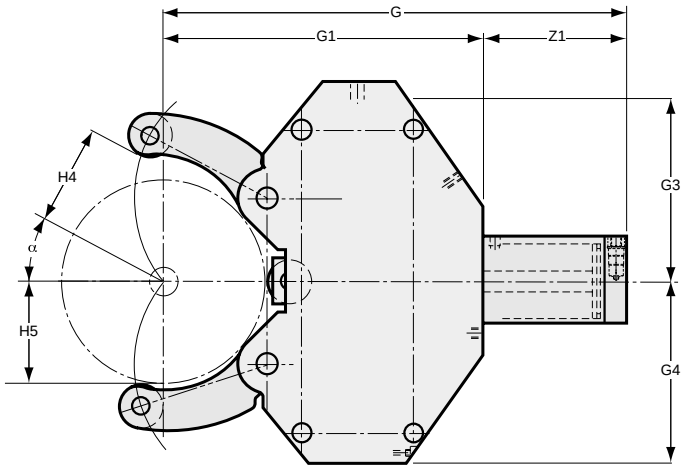
Steady Rest dimensions

LEW/LZW with Stroke control



Steady rest size = Gripping range			3 - 65	8 - 100	12 - 120	12 - 155	20 - 170	35 - 245	50 - 310
Cylinder	Z 3	[mm]	35	37,5	37,5	50	50	52,5	55
	Z 4	[mm]	55	67,5	67,5	80	80	82,5	85

LEA/LZA with Swing-away lever



Steady rest size = Gripping range			3 - 65	8 - 100	12 - 120	12 - 155	20 - 170	35 - 245	50 - 310
Lever		[Degr.]	20	22	20	25	25	28	26
	H 4	[mm]	32,5	50	60	77,5	85	122,5	155
	H 5	[mm]	34	51,5	62,5	79	87,5	124	160
Housing	G	[mm]	231	319	365	436	459	565	692
	G 1	[mm]	135	205	240	295	312	386	482
	G 3	[mm]	70	110	147	170	170	239	270
	G 4	[mm]	70	102,5	142	157,5	157,5	219	250
Cylinder	Z 1	[mm]	96	114	125	141	147	179	210

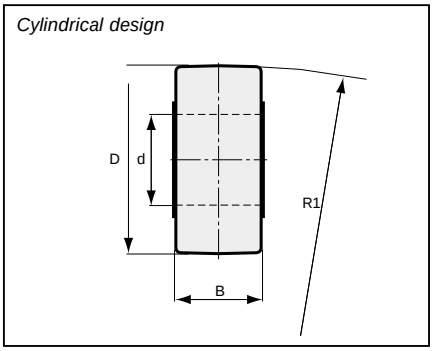
Rollers

ATLING Steady Rests are equiped with

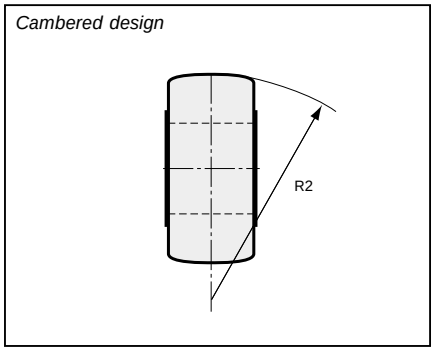
1 Set of sealed, cylindrical standard rollers.
Your advantage: - inexpensive spare parts
- constant quality
- in stock inventory

Cambered Rollers R2 for travelling steady rests are available on special request.

Cylindrical design



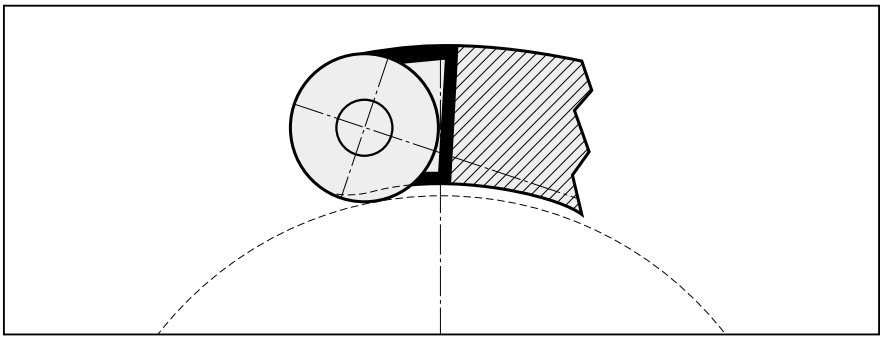
Cambered design



Steady rest size = Gripping range			**3 - 65**	**8 - 100**	**12 - 120**	**12 - 155**	**20 - 170**	**35 - 245**	**50 - 310**
Rollersize	D	[mm]	19	35	35	47	52	52	62
	d	[mm]	6	15	15	20	20	20	30
	B	[mm]	12	19	19	25	25	25	29
Cylindrical design	**R 1**	[mm]	500	500	500	500	500	500	500
	Model number		158028	158585	158585	157882	157886	157886	157888
Cambered design	**R 2**	[mm]	80	150	150	150	150	150	150
	Model number		158029	158586	158586	157883	157887	157887	157889

Roller wiper seal for Lever

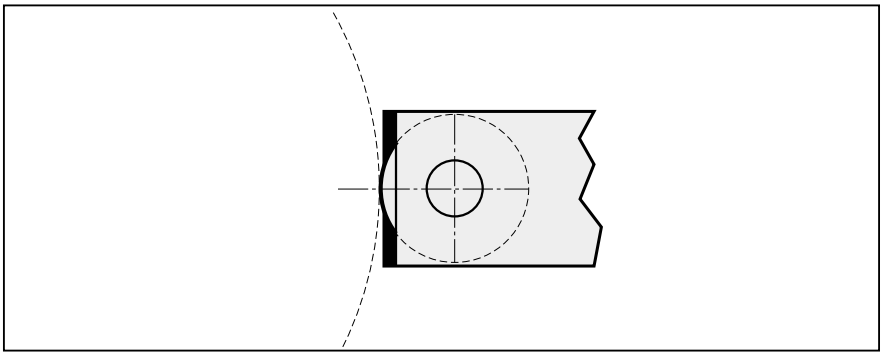
Standard models are furnished with roller wiper seals.



Steady rest size = Gripping range	**3 - 65**	**8 - 100**	**12 - 120**	**12 - 155**	**20 - 170**	**35 - 245**	**50 - 310**
Model number	158762	158530	158530	158763	158083	158083	158084

Roller wiper seal for Center piece

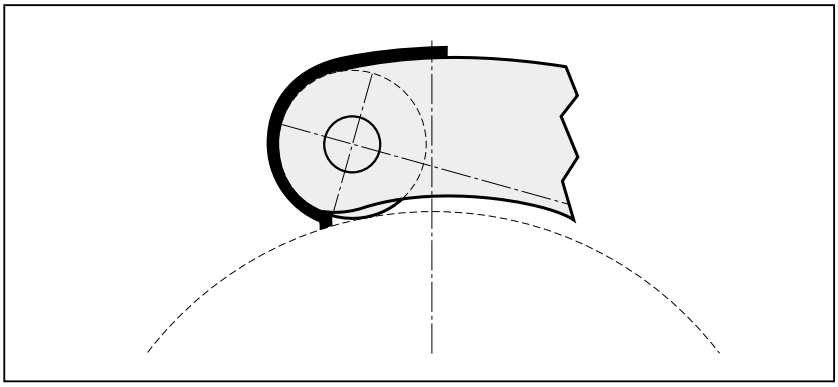
Standard models are furnished with roller wiper seals.



Steady rest size = Gripping range	**3 - 65**	**8 - 100**	**12 - 120**	**12 - 155**	**20 - 170**	**35 - 245**	**50 - 310**
Model number	–	158765	158766	158767	158768	158769	158770

Standard workpiece wiper seals

The ATLING Steady Rest can also be equiped with a standard workpiece wiper seal. The seal is fitted to the lever for the right diameter of work and is then attached to the lever with two screws.

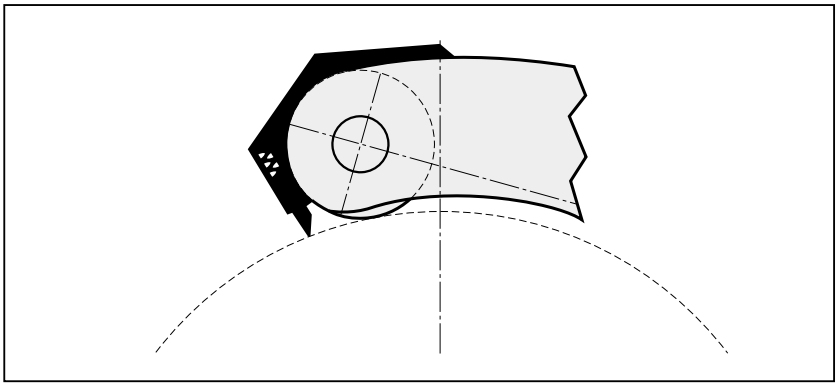


Steady rest size = Gripping range	3 - 65	8 - 100	12 - 120	12 - 155	20 - 170	35 - 245	50 - 310
Model number	158771	158772	158773	158774	158775	158776	158777

Resilient workpiece wiper seal

The ATLING Steady Rest can also be equiped with a resilient workpiece wiper seal. The seal conforms to the workpiece diameter and does not need any adjustments.

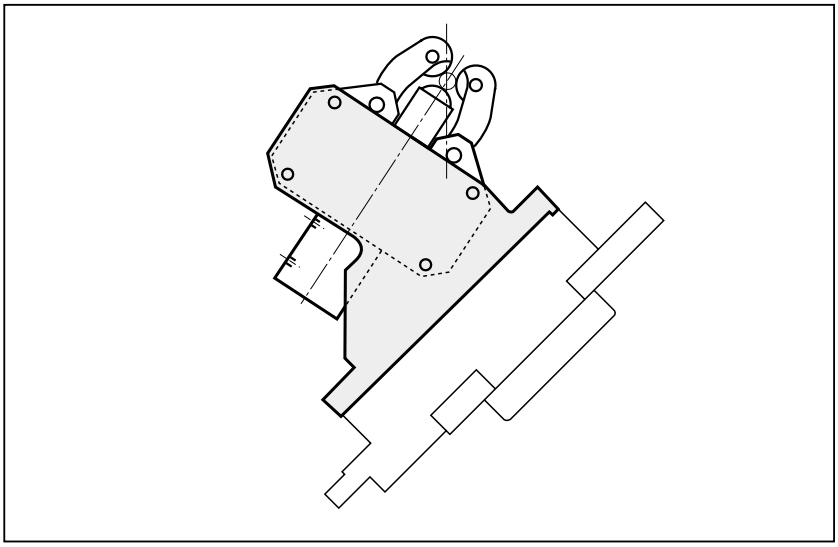
Please note that the gripping range is decreased during the use of this seal!



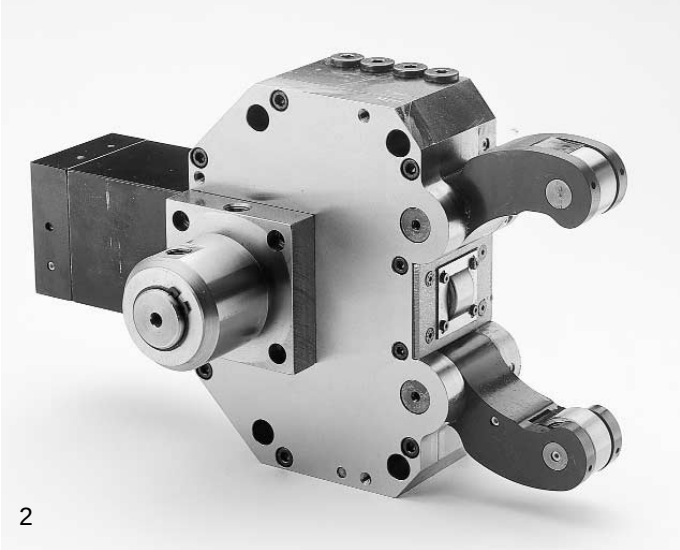
Steady rest size		3 - 65	8 - 100	12 - 120	12 - 155	20 - 170	35 - 245	50 - 310
Gripping range	[mm]	**–**	**28 - 90**	**30 - 112**	**35 - 140**	**35 - 158**	**35 - 232**	**50 - 302**
	Model number	158771	158772	158773	158774	158775	158776	158777

Mounting bracket

The specifications of the mounting bracket will be unique to the particular machine to be accommodated. (see page 15)



1



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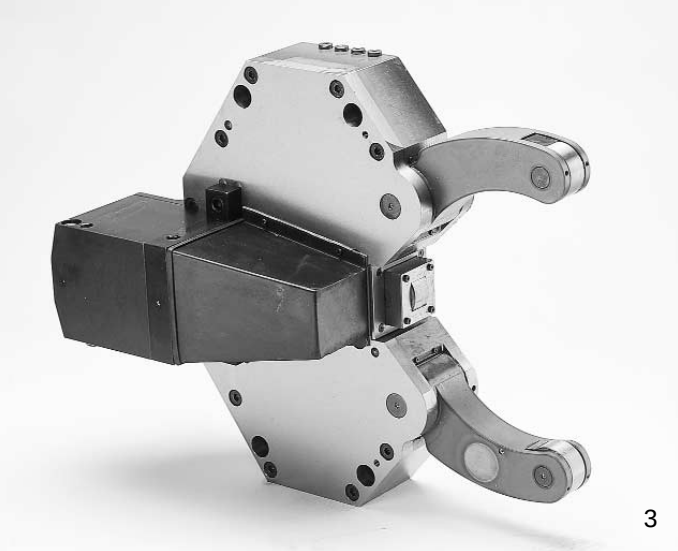


3

1) Steady rest with internal cylinder.

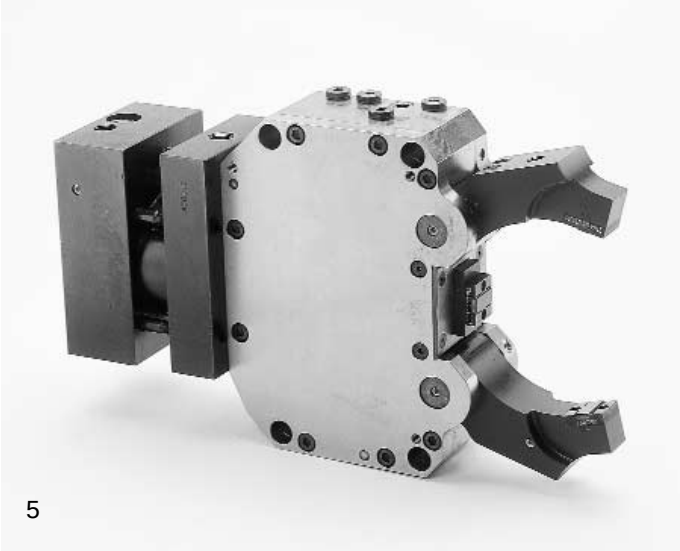
2) Steady rest with coupling for turret applications.

3) Steady rest with side mounted cylinder.

4) Steady rest with thin levers for crankshaft or camshaft.

5) Steady rest with diamond shoes for turning or grinding machine.

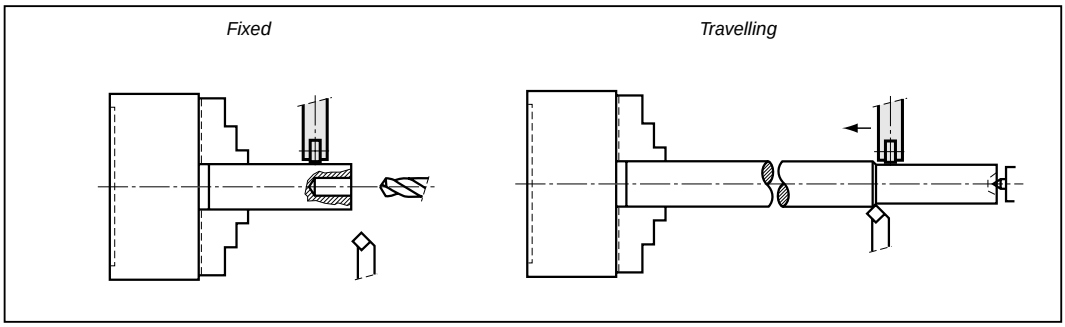
4



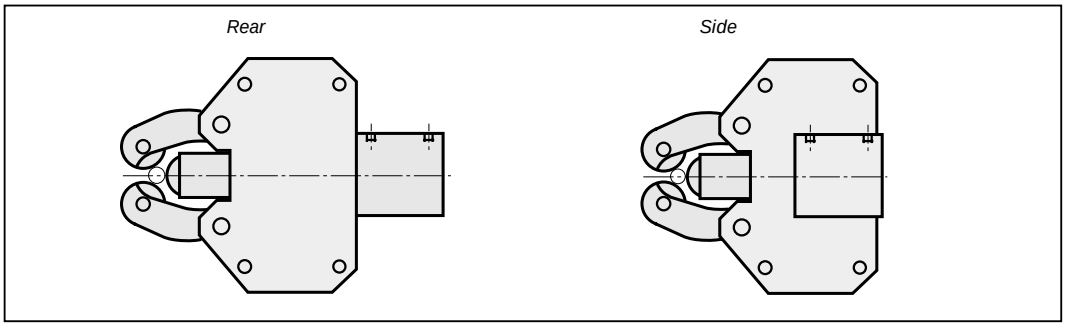
5

Special designs

Mode of operation

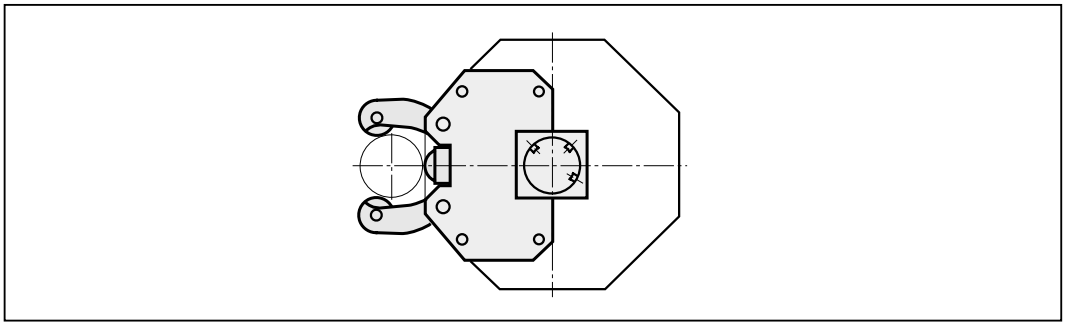


Cylinder location



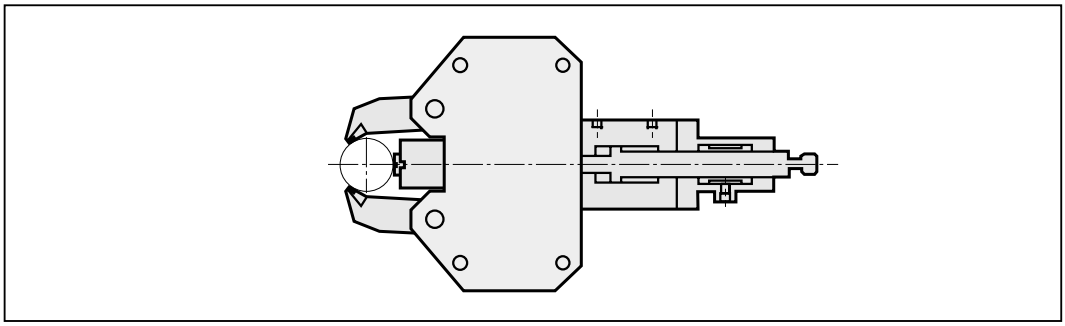
Turret mounted

Rotating coupling



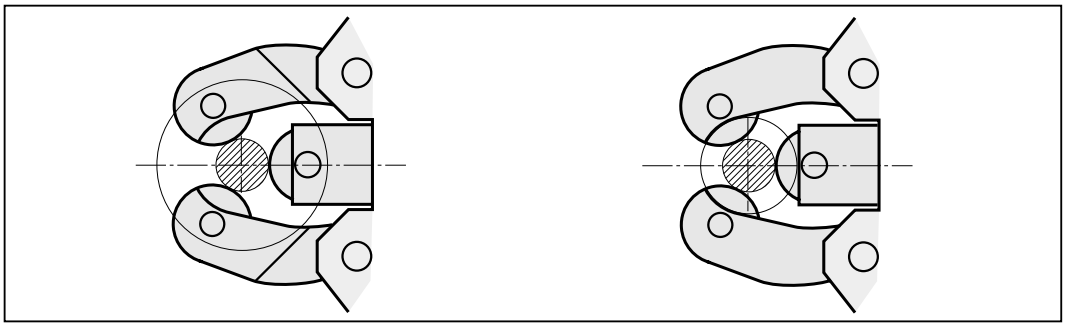
Grinding operation

Locking sleeve
Slide plate



Crank and Camshaft operation

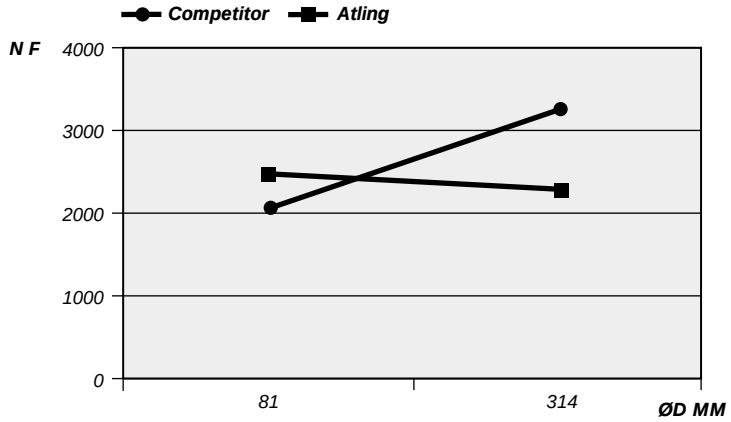
Gripping diameter
Max. Turning diam.
Max. Lever width



Gripping force

As a result of our unique patent, we achieve precise contact between the guide rollers and the machines angle of the levers, giving us the most consistant range of gripping force throughout the industry.

Tempered and hardened steel surfaces and accuratly machined working components give us 5 times more accuracy over our competition. This unique design allows for a larger gripping range in a more compact housing. This means less machine sheet metal modification is necessary.



C: (Competitor)

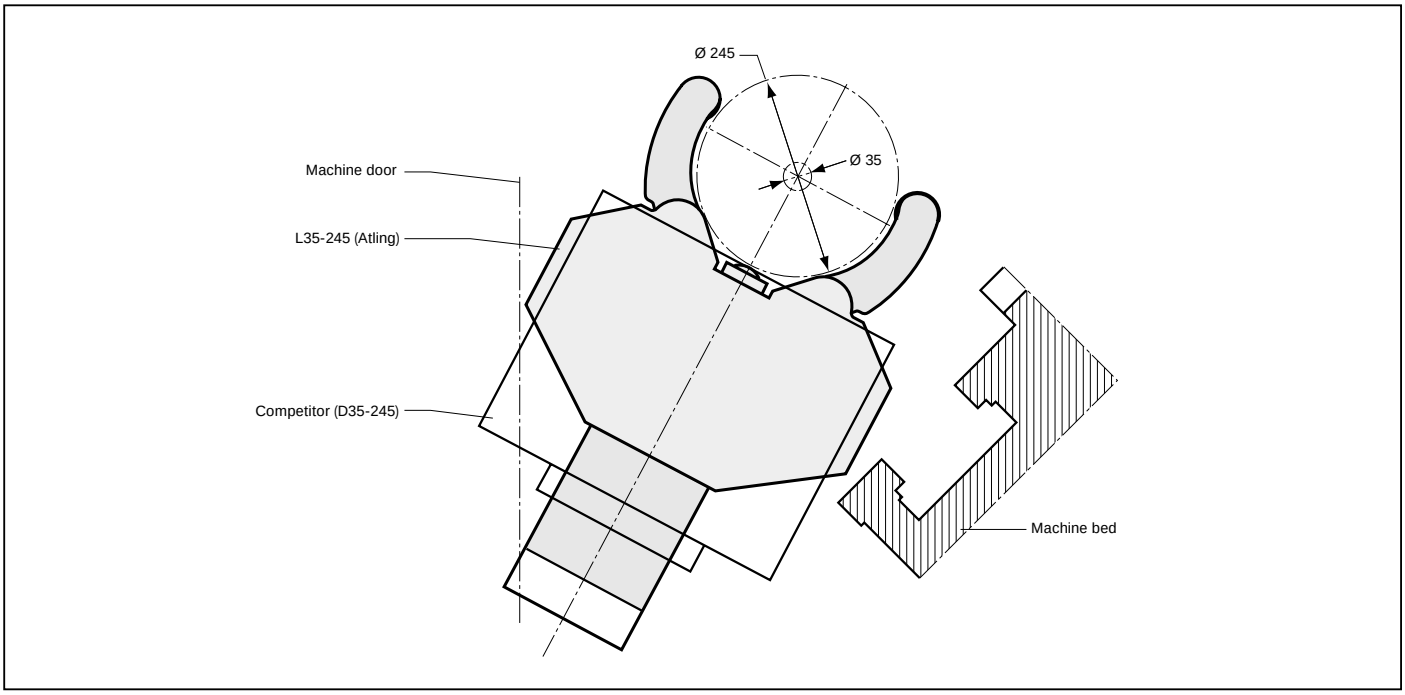
ØD = 81 mm → F = 2085 N
ØD = 314 mm → F = 3272 N

$$\frac{3272 - 2085}{3272} = 36.3\ \%$$

L: (Atling)

ØD = 81 mm → F = 2485 N
ØD = 311 mm → F = 2307 N

$$\frac{2485 - 2307}{2485} = 7.2\ \%$$



Example of compact design.

Request for quote/order form

If you have require a specially designed Steady Rest,
please fill in this form and send it by FAX to ATLINGS MASKINFABRIK AB:

Workpiece			X			X	Ident.-No.	Comments
Type of Machining	Turning			Grinding				
Mode of operation	Fixed			Travelling				Page 13
Workpiece								
Workpiece diameter	Min.	[mm]		Max.	[mm]			
Workpiece weight	Max.	[kg]						

Steady rest data

Gripping range	Min.	[mm]		Max.	[mm]			
Lubrication	Central			Manual				Page 5
Stroke control	Yes			No				Page 5
Swing-away lever	Yes			No				Page 5
Cylinder location	Rear			Side				Page 13
Cylinder diameter		[mm]						
Cylinder operation	Hydraulic			Pneumatic				
Special actuation								
Rollers	Diameter	[mm]		Width	[mm]			Page 10
Rollers	Cylindrical			Cambered				Page 10
Roller wiper seal	Yes			No				Page 10
Workpiece wiper seal	Yes			No				Page 11
Rotating coupling, (turret appl.)	Yes			No				Page 13

Grinding operation steady rests

Locking sleeve	Yes			No				Page 13
Slide plate	Yes			No				Page 13

Crank- and Cam-shaft steady rests

Gripping diameter		[mm]						Page 13
Max Turning diameter		[mm]						Page 13
Max Lever width		[mm]						Page 13

Mounting bracket

Machine tool manufacturer	
Machine, type	
Machine-No.	
Year	

Company _____

Name _____

Dept. _____

Address _____

City/Country _____

Phone No. _____

Fax-No. _____

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