

# INDEXA<sup>™</sup> Certificate of Quality

This Lathe Chuck has been tested and approved for sale

IND-475-1010K	80mm	<input type="checkbox"/>	IND-475-1490K	315mm	<input type="checkbox"/>
IND-475-1030K	100mm	<input type="checkbox"/>	IND-475-1630K	100mm	<input type="checkbox"/>
IND-475-1040K	125mm	<input type="checkbox"/>	IND-475-1640K	125mm	<input type="checkbox"/>
IND-475-1060K	160mm	<input type="checkbox"/>	IND-475-1660K	160mm	<input type="checkbox"/>
IND-475-1070K	200mm	<input type="checkbox"/>	IND-475-1670K	200mm	<input type="checkbox"/>
IND-475-1080K	250mm	<input type="checkbox"/>	IND-475-1680K	250mm	<input type="checkbox"/>
IND-475-1090K	315mm	<input type="checkbox"/>	IND-475-1690K	315mm	<input type="checkbox"/>
IND-475-1100K	400mm	<input type="checkbox"/>	IND-475-3160K	160mm	<input type="checkbox"/>
IND-475-1220K	80mm	<input type="checkbox"/>	IND-475-3170K	160mm	<input type="checkbox"/>
IND-475-1230K	100mm	<input type="checkbox"/>	IND-475-3200K	200mm	<input type="checkbox"/>
IND-475-1240K	125mm	<input type="checkbox"/>	IND-475-3350K	250mm	<input type="checkbox"/>
IND-475-1260K	160mm	<input type="checkbox"/>	IND-475-3390K	315mm	<input type="checkbox"/>
IND-475-1270K	200mm	<input type="checkbox"/>	IND-475-3400K	315mm	<input type="checkbox"/>
IND-475-1280K	250mm	<input type="checkbox"/>	IND-475-5050K	200mm	<input type="checkbox"/>
IND-475-1290K	315mm	<input type="checkbox"/>	IND-475-5060K	250mm	<input type="checkbox"/>
IND-475-1300K	400mm	<input type="checkbox"/>	IND-475-5070K	315mm	<input type="checkbox"/>
IND-475-1450K	125mm	<input type="checkbox"/>	IND-475-5090K	400mm	<input type="checkbox"/>
IND-475-1460K	160mm	<input type="checkbox"/>	IND-475-5100K	500mm	<input type="checkbox"/>
IND-475-1470K	200mm	<input type="checkbox"/>	IND-475-5110K	630mm	<input type="checkbox"/>
IND-475-1480K	250mm	<input type="checkbox"/>			

Inspector:

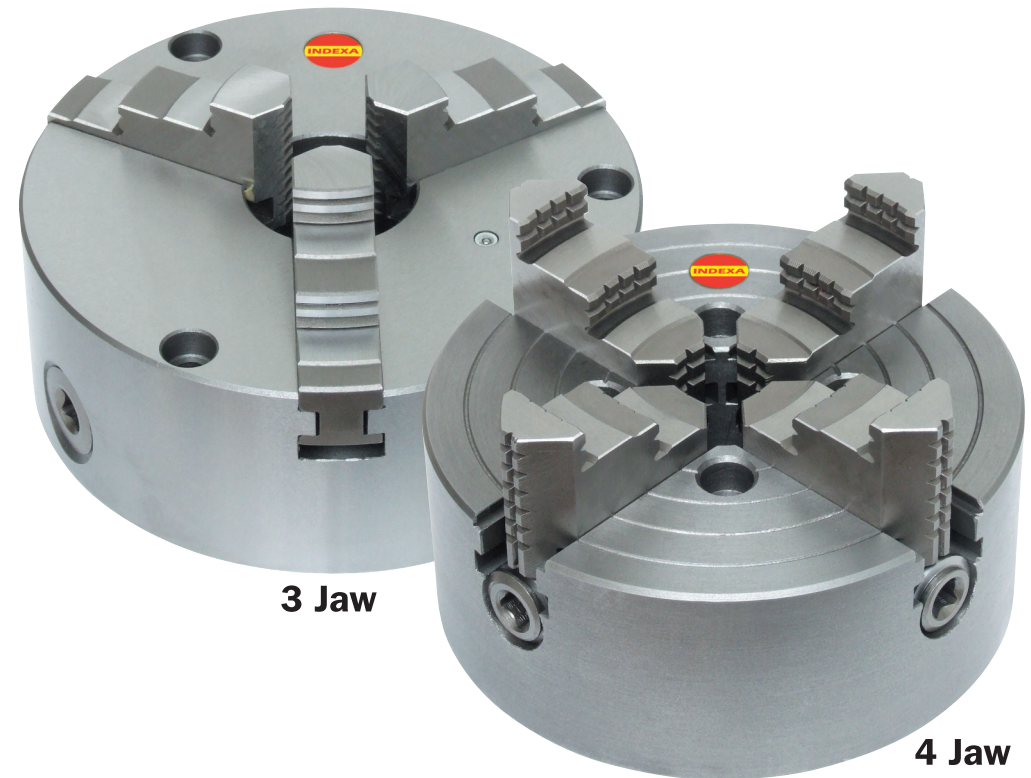
Date of Manufacture:

Batch Number:

INDEXA-SEIKI, WIGSTON, LEICESTER, ENGLAND, LE18 2FS

# INDEXA<sup>™</sup>

## Lathe Chucks



3 Jaw

4 Jaw

## Instruction Manual

Always read instructions before use!

# INDEXA™

You have purchased a Quality Industrial Product that is designed for high performance and long service life. With correct use, safety and maintenance procedures observed, this lathe chuck will give you many years of service.

## Scope

This chuck is suitable for use on all types of lathes, and on different milling, drilling and CNC attachments.

## Construction

The chuck comes complete with jaws and mounting bolts. It has a high quality steel or cast iron body (depending on model), with all guide ways and bearing surfaces precisely machined. The scroll plate is of case hardened drop forged alloy steel and the thread flanks are ground on both sides. The jaw's teeth and guide ways are hardened and ground on both sides, as are the pinions.

## Safety



Due to chuck rotating speeds and cutting forces during machining, care should be taken to ensure proper and safe use of your chuck. Before use of your lathe chuck, please:

- Always** read the instruction manual
- Always** keep your chuck clean and lubricated.
- Always** remove the chuck wrench before starting the machine.
- Never** remove the safety spring from the chuck wrench.
- Never** start the lathe until all is clear. A collision between the chuck and the lathe will cause damage to both.
- Never** use the chuck on heavy work where the jaws on the chuck project appreciably from the chuck body.
- Never** clamp long pieces of work in the chuck without additional support, this can cause heavy damage to the lathe and work environment.
- Never** operate the chuck if any parts are damaged, missing or cracked.
- Never** tamper with the chuck. If an inaccuracy is found, check the spindle nose or adaptor plate for true running and make sure there is no dirt or foreign matter between the mounting faces.
- Never** exceed the maximum speed of the chuck (RPM stamped on the chuck face).
- Never** do any unauthorised chuck modifications

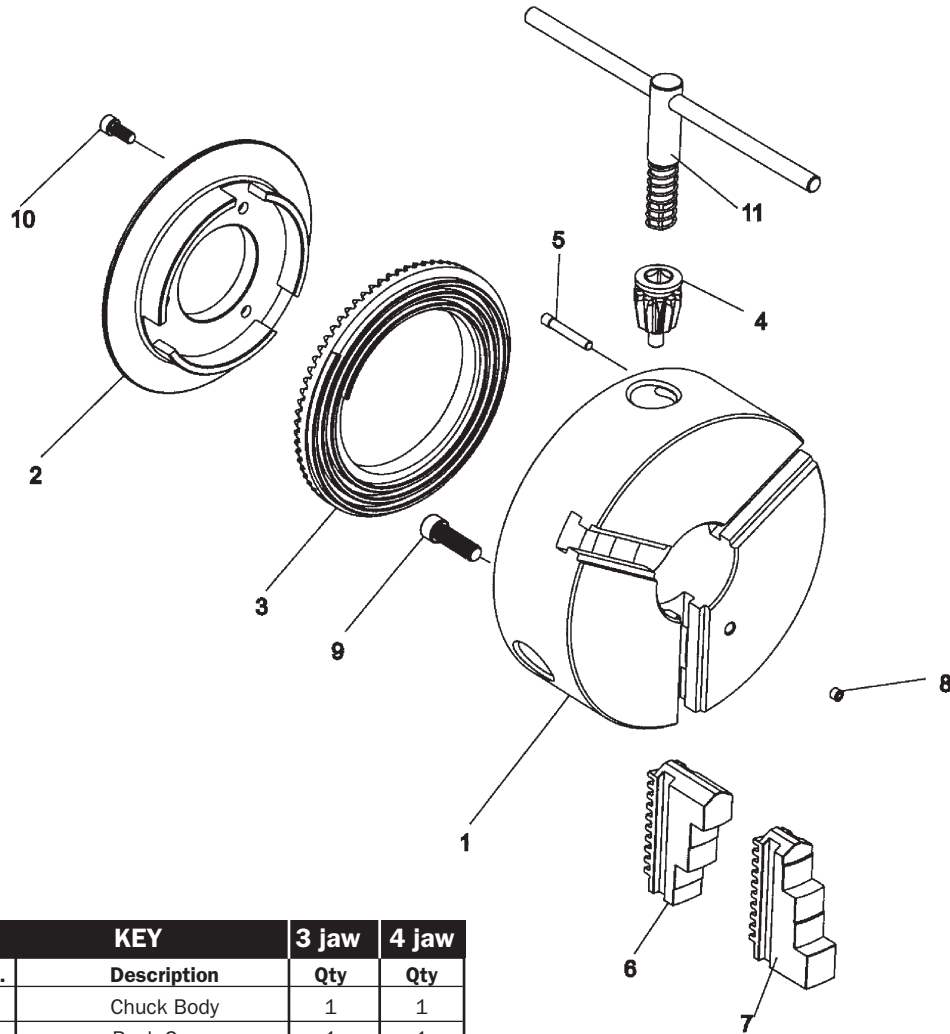
## Accuracy (mm)

This chuck has been inspected for quality and accuracy as follows:

### INSPECTION CHECKLIST

Diagramatic of Test	Test item	Chuck Diameter						
		80, 100	125, 160	200, 250	315	400	500, 630	800
	a	0.02	0.03	0.04	0.05	0.06	0.10	0.11
	b	0.015	0.02	0.025	0.03	0.03	0.05	0.06
	a	0.02 L = 40	0.03 L = 60	0.04 L = 80	0.05 L = 120	0.06 L = 120	0.10 L = 160	0.11 L = 160
	b	0.015	0.02	0.025	0.03	0.03	0.05	0.06
	a	0.025	0.035	0.045	0.055	0.065	0.10	0.11
	b	0.015	0.02	0.025	0.03	0.03	0.05	0.06
	a	0.025	0.035	0.045	0.055	0.065	0.10	0.11
	b	0.015	0.02	0.025	0.03	0.03	0.05	0.06

## Parts breakdown



KEY		3 jaw	4 jaw
No.	Description	Qty	Qty
1	Chuck Body	1	1
2	Back Cover	1	1
3	Scroll plate	1	1
4	Pinion	3	2
5	Pinion screw	3	2
6	Hard solid outside jaws	3	4
7	Hard solid inside jaws	3	4
8	Grease nipple	1	1
9	Chuck mounting bolts	Size dependant	
10	Back cover mounting bolts	Size dependant	
11	Chuck wrench	1	1

## User Instructions

Before mounting the chuck on the lathe, clean grease and oil from the threaded mounting holes and make sure all mating faces are clean of dirt and debris.

Care should be taken when mounting the chuck onto the lathe to ensure machined surfaces are protected, and to avoid any impact.

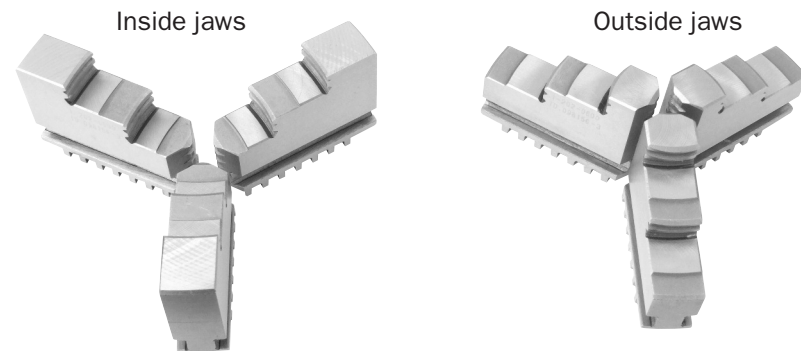
Check the spindle runout to make sure it meets required runout limits.

Mount the chuck onto the spindle and fix with machine screws tightening carefully to avoid damage to the threads.

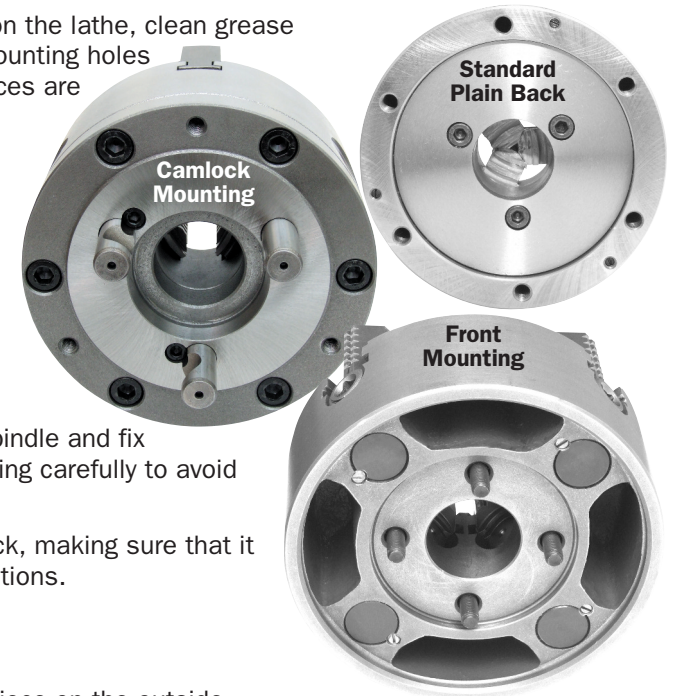
Check the runout of the chuck, making sure that it meets the required specifications.

### CHANGING JAWS

If you need to grip the workpiece on the outside you will need to use a concave set of outside jaws or to grip the workpiece on the inside you will need to use convex inside jaws.



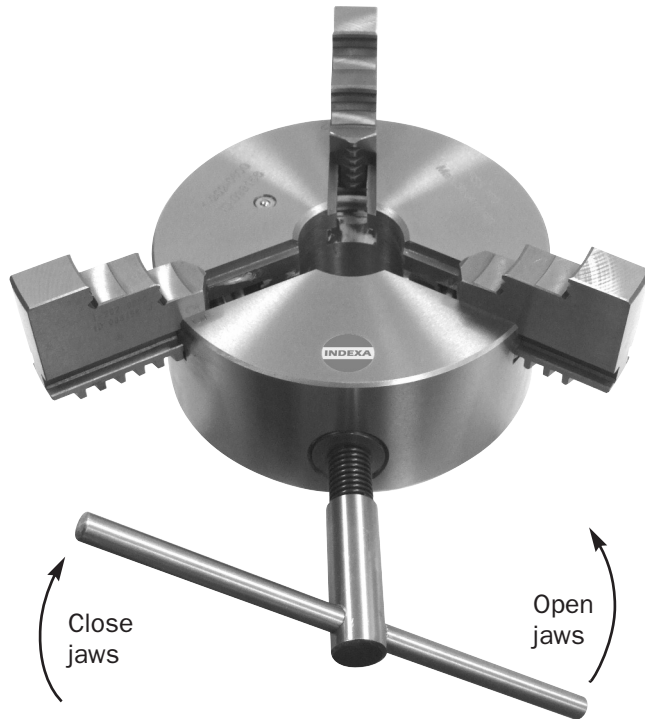
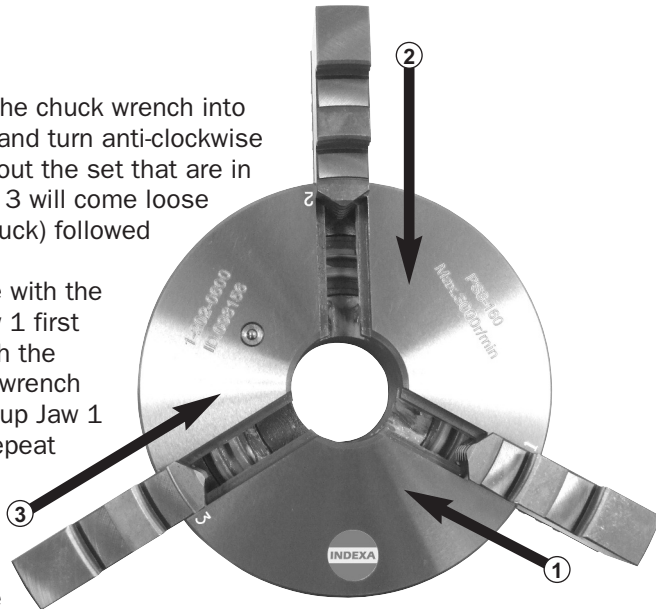
The jaws are in sets of 3 or 4 individually ground jaws each having its individual code ending with either 1, 2, 3 or 4.



To remove the jaws, insert the chuck wrench into the most accessible pinion and turn anti-clockwise in order to completely wind out the set that are in place. You will find that Jaw 3 will come loose first (or Jaw 4 on a 4 jaw chuck) followed by Jaw 2 and Jaw 1 last.

Remove the set and replace with the ones required, inserting Jaw 1 first until it comes in contact with the scroll plate. Turn the chuck wrench clockwise until it has taken up Jaw 1 so it cannot be removed. Repeat with Jaw 2 and then Jaw 3.

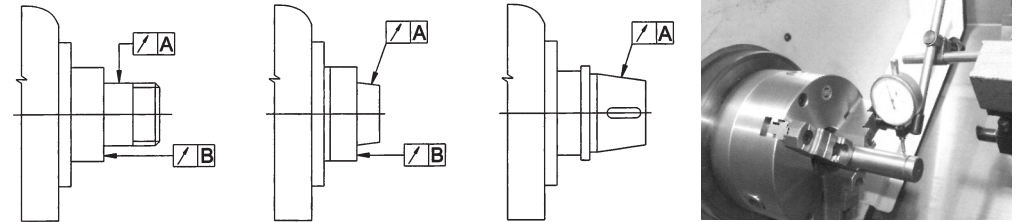
Turn the chuck wrench clockwise until all three jaws meet together in the centre of the chuck to make sure they have been seated correctly on the scroll plate.



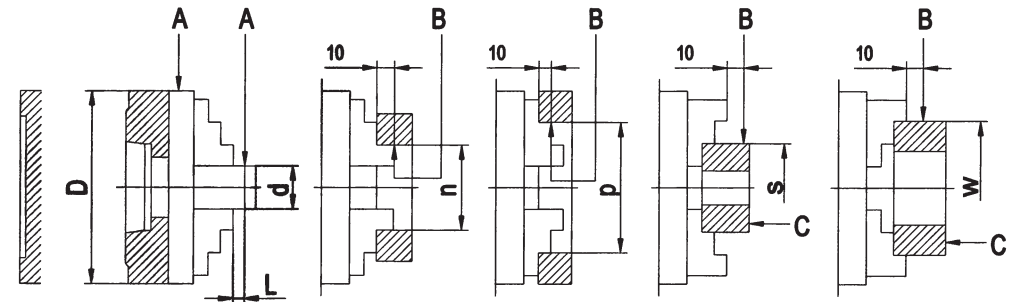
## Permissible Spindle Runout

To obtain the specified clamping accuracy of a chuck on a machine tool, it is necessary to:

1. Reduce play in the spindle bearings to allowable minimum.
2. Ensure the machine spindle nose does not exceed the values specified
3. Meet the basic requirements for correct mounting of the chuck on the spindle nose.



Chuck Diameter	80	100	125	160	200	250	315	400	500	630	800
Spindle Runout	0.003mm max.				0.005mm max.						

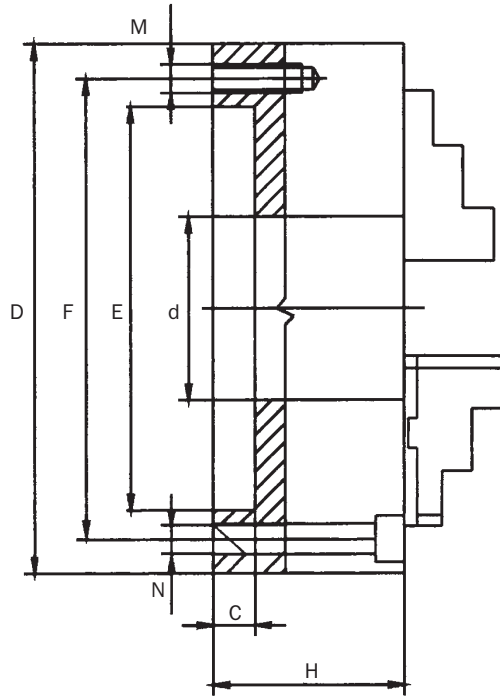


### CHUCK ACCURACY (mm)

Chuck Dia. D	1	d 2	3	L	n	p	s	w	Radial Runout		Axial Runout C
									A	B	
80	10	-	14	40	40	60	35	63	0.02	0.025	0.015
100	10	14	18	40	40	75	50	80	0.02	0.025	0.015
125	18	25	30	60	50	100	62	100	0.03	0.035	0.02
160	18	30	40	60	50	135	88	100	0.03	0.035	0.02
200	30	40	53	80	80	162	96	160	0.04	0.045	0.025
250	30	53	75	80	80	200	150	160	0.04	0.045	0.025
315	53	75	100	120	125	252	210	250	0.05	0.055	0.03
400	53	100	125	120	125	282	250	250	0.06	0.065	0.03
500	75	100	125	160	200	282	300	400	0.10	0.10	0.05
630	75	125	160	160	200	325	400	400	0.10	0.10	0.05
800	160	200	250	160	325	500	400	500	0.11	0.11	0.06



## Dimensions



**DIMENSIONS (mm)**

Chuck D	F	E	Hole d	C	H	Thread	M Qty	N Qty
80	67	56	16	3	44	M6	3	3
100	83	70	20	3	50	M8	3	3
125	108	95	32	4	56	M8	3	3
160	140	125	42	4	64.5	M10	6	3
200	176	160	55	4	75	M10	6	3
250	224	200	76	5	85	M12	6	3
315	286	260	103	5	94	M16	6	3
400	362	330	136	5	105	M16	6	3
500	458	420	190	5	120	M16	6	6
630	586	545	252	7	135	M16	6	6
800	368.3	450	320	20	159	M24	-	6

## LOADING A WORKPIECE

First check that the diameter of the workpiece falls within the parameters of the chuck that you have fitted. Open the jaws by using the chuck wrench to rotate the most accessible pinion anti-clockwise until the opening is large enough to accommodate the workpiece.

Insert the workpiece into the jaws as far as possible whilst still enabling the required machining to be carried out. If the workpiece protrudes excessively and causes unacceptable runout it will be necessary to support the other end using a revolving centre.

Tighten jaws again to lock the workpiece in place.

**VERY IMPORTANT!**  
Make sure the chuck wrench has been removed and all is clear before starting the machine.



## MAINTENANCE

Wash and lubricate the chuck regularly in order to maintain its accuracy and durability.

Clean grease and oil from the threaded mounting holes prior to mounting the chuck on the lathe and make sure all mating faces are clean of dirt and debris.

Care should be taken when mounting the chuck onto the lathe to ensure machined surfaces are protected, and to avoid any impact.

This chuck is a precision piece of equipment and care should be taken to prevent corrosion and damage during use or storage. Failure to do so may invalidate any warranty.

## Safe operating parameters

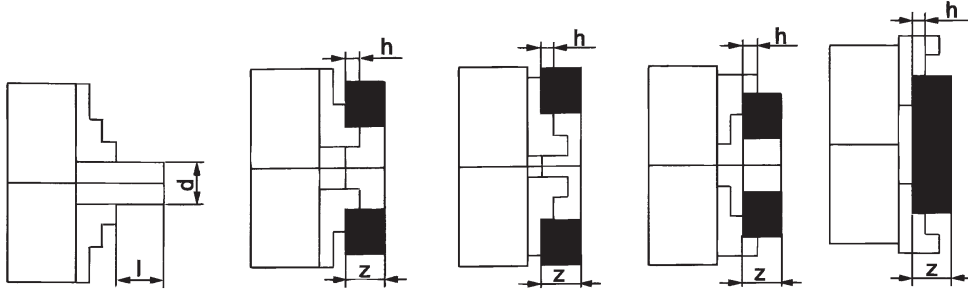
### CONDITIONS:

l & Z = maximum length of workpiece

d = workpiece diameter

h = height of the clamping jaw step

Workpiece is clamped into the chuck jaws without additional support



Chuck Diameter	80	100	125	160	200	250	315	400	500	630	800
l	1.2 x d						1.5 x d			1 x d	
Z	4 x h										

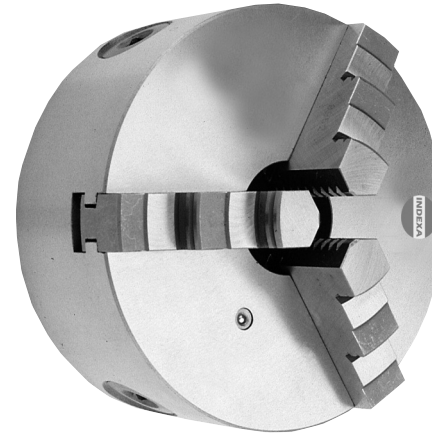
### TOTAL GRIPPING FORCE (daN)

Chuck Diameter	80	100	125	160	200	250	315	400	500	630	800
Cast Iron Body Chucks	1000	1700	2400	3100	3700	4600	5500	6500	7200	8000	9000

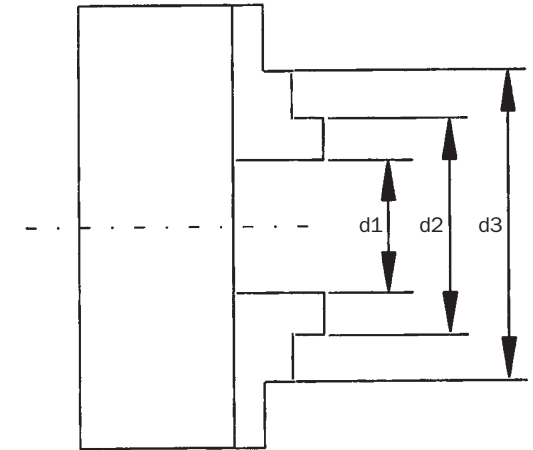
### RECOMMENDED MAXIMUM SPEEDS (RPM)

Chuck Diameter	80	100	125	160	200	250	315	400	500	630	800
Cast Iron Body Chucks	4000	3500	3200	3000	2500	2000	1500	1000	700	500	300

## Clamping ranges for solid jaw chucks



(3 or 4 jaws)



Chuck Diameter	DIMENSIONS (mm)		
	d1	d2	d3 max.
80	2 - 27	22 - 46	45 - 69
100	3 - 33	25 - 56	56 - 87
125	3 - 50	34 - 74	72 - 115
160	3 - 64	42 - 100	94 - 154
200	4 - 90	52 - 135	120 - 202
250	5 - 118	62 - 174	145 - 256
315	10 - 131	78 - 200	172 - 299
400	10 - 180	82 - 252	210 - 380
500	20 - 235	120 - 335	245 - 476
630	30 - 335	160 - 465	325 - 630
800	150 - 482	282 - 614	448 - 780