



POTISJE ADA



PDLL - 1120 M

**HORIZONTAL
UNIVERSAL LATHES
FAMILY PD**

CHARACTERISTICS OF THE PD LATHES

The lathes of PD type constructed to answer to the requests of the market are of modern design and they enlarge the list of POTISJE universal lathes.

The modern design is the result of the long lasting close cooperation between POTISJE and scientific institutes, and it makes these lathes a very competitive ones.

The lathes of PD type have following characteristics:

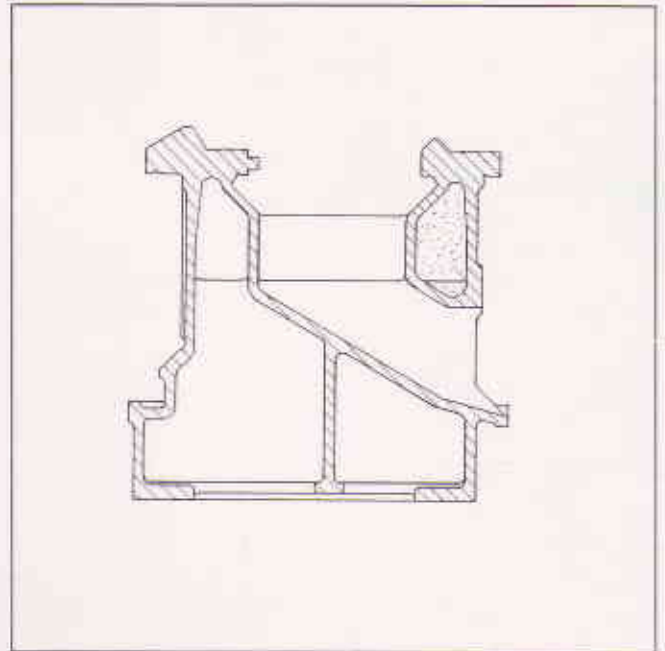
- height of centers 565, 660, 800 and 1000 mm,
- distance between centers 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000 and 10000 mm,
- taper turning attachment,
- driven upper vertical support.

ALL LATHES OF PD TYPE HAVE THE FOLLOWING COMMON CHARACTERISTICS

- Very stable bed with hardened and ground guides of 45 – 50 HRC,
- Headstock with cemented, hardened and ground gears,
- Large choice of revolution numbers in three ranges with a continuous change in a particular range,
- Large choice of metric, Whitworth and module threads without any change of gears,
- Abundant centralised lubrication,
- Completely enclosed feed box with cemented and hardened gears,
- Concentrated controls for easy and simple handling,
- DC driving motor
- Brakeing and rotation changes by motor.

QUALITY CONTROL

All materials and attachments were tested with most modern means before being incorporated into these lathes. Very severe final control of the lathes assures their high accuracy and quality which satisfy the highest world standards.



BED

The bed of the lathe is of a very massive construction and homogeneous consistence, having a width of 710 mm or 1120 mm. It is designed to enable the regular drainage of chips and coolant liquid from the working space.

It is important to mention that the sand is left under the rear guideways what provides the muffling of oscillations.

The bed is made in such a way that different lengths can be easily composed. Subsequent deformations are avoided by natural and artificial ageing.

The sliding guideways are induction hardened on 50 HRC what gives them a very high precision and longevity.

HEADSTOCK

The headstock enables the choice of working regime with a continuous change of revolution numbers in a defined range.

Driving electro-motor is placed on a stable support, specially constructed for this purpose. Massive construction and the stability of the support enables the good centering in relation with the clutch and the entering spindle of the headstock, and by that a good suppression of vibrations.

The design and the execution of the headstock are of a highest quality. The used material is a high quality steel which provides a long and efficient operation. All mobile parts are abundantly lubricated what assures a good and long term functioning.

The headstock lubrication control is set apart on the visible place on the machine so to enable an easy control at any moment.

The main spindle is embedded on high precision conical roller bearings.

The lubrication of the bearings is a continuous one that operates in a way that when a stationary temperature condition is reached a necessary quantity of oil remains inside.

All vital elements of the headstock are cemented and hardened.

The change of revolution numbers can be done automatically in hydasulic way.

The main spindle can be used with automatic clamping and main spindle end is made according to DIN standards size 11.

FEED GEARBOX

The feed gearbox housing is hermetically closed and enables a large choice of feeds by adjustment of corresponding handles on the feed gearbox, so that any change of gears out of the feed gearbox is unnecessary. All feed gearbox elements are made of highest quality materials. Gears and shafts are made of alloy steel, cemented and hardened and embedded on ball bearings.

All parts are abundantly lubricated under premanent oil level control.

The handles are easily replacable what enables a simple choice of pitches while machine is in operation

TOOL POST

The tool post is of a massive construction. Its sliding surfaces are of large dimensions, gided on hardened slide guides of the bed. The clearances are accurately determined and adjusted in a way that frequent adjustments are not necessary.

The cross slider is guided on large guides of a swallow-tail shape and it supports the rotating slider, it is possible to treat cones using the upper slider.

The lubrication of the sliding surfaces of the bed is centralized. The travel of the verical and cross slider is limited by strong stops and electro breakers which avoids the collision of mobile parts.

The lathe is delivered with four side tool holder and it is possible to bild in, upon request, the quick change tool holder.



APRON

The apron is designed in a way to be highly functional. The number of control levers is reduced to the minimum and their disposition provides the operator with a simple command.

The apron's role is to enable:

- choice of steps of threads cutting or turning,
- choice of vertical or cross direction,
- choice of direction of turning,
- choice of automatic or hand feed.

The elements of the apron satisfy all the requirements of strength and rigidity and a special mechanism protects the lathe from overloading. A particular driving motor is designed to provide for a rapid travel. The mobile parts of the apron can be lubricated separately or they are sunk in oil.

TAILSTOCK

The tailstock enables the treatment of work pieces between centers.

Its force has to be big enough to center and maintain the work piece between centers. It is possible to

reposition the tailstock manually or automatically. The bringing of tailstock into desired position is provided by a fixation plate.

A separate mechanism enables the bringing of the tailstock out of the cross axle of the machine.

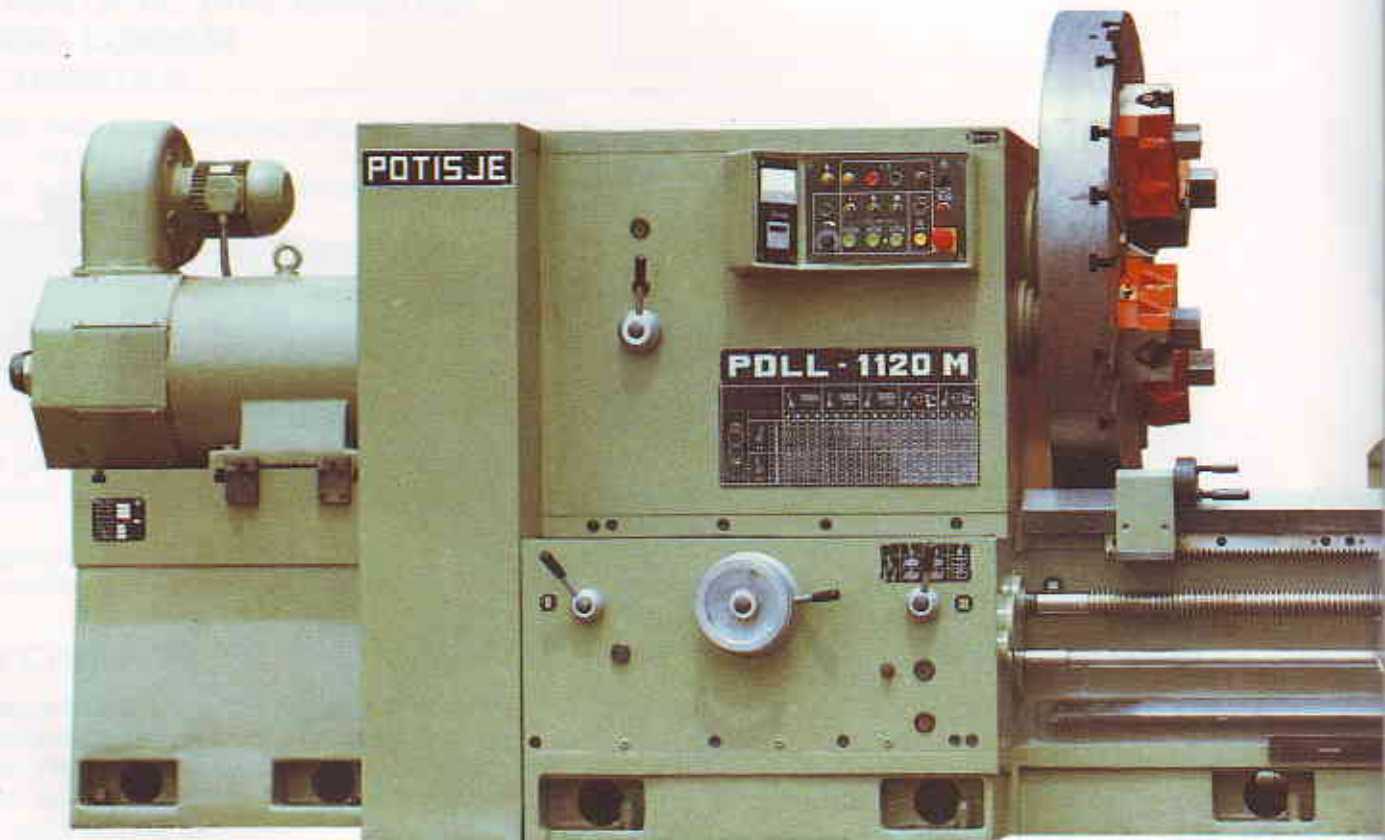
STEADIES

They serve to support the workpieces during treatment. Their aim is:

- during the treating of long flexible workpieces the steadies prevent their bending under the action of cutting forces or due to their own weight,
- during the treating of the ends of long workpieces when the use of tailstock centres is not possible they support these pieces,
- regarding that the workpieces treated on these lathes are very heavy, steadies serve to bring the workpiece axis in machine axis in the process of its setting and clamping.

For PD lathes following steadies are made:

- travelling steady which can be located in different positions along bedways guides,
- fixed steady which is fixed on the support.



The governing of the steadies is manual and they are made to lean on four points. The contact with workpieces is made with sliding and rolling bodies.

COOLING SYSTEM

Main parts of cooling system are

- low pressure pump (1 m) of 60 l/min capacity
- pipeline for drainage of coolant liquid with stopcock for the regulation of the quantity of liquid during operation
- system of tubs for the recuperation of coolant liquid.

The bed of the lathe is designed so to assure the collection and return of coolant liquid into the tubs.

The system for coolant liquid is situated on the rear side of the machine. The recuperation tubs are also at the rear side of the machine. It is necessary to regularly clean the tubs.

LUBRICATION

The lubrication of the machine is one of the most essential function.

In the designing of the machine a special attention was given to the lubrication of the mobile parts so to provide:

- the lubrication of all the parts of the headstock,
- the lubrication of sliding surfaces,
- the manual lubrication of the places on the lubrication scheme.

HYDRAULIC SYSTEM

The hydraulic system represents a compact entirety which provides a safe and quality work. The revolution numbers can be only changed hydraulically.

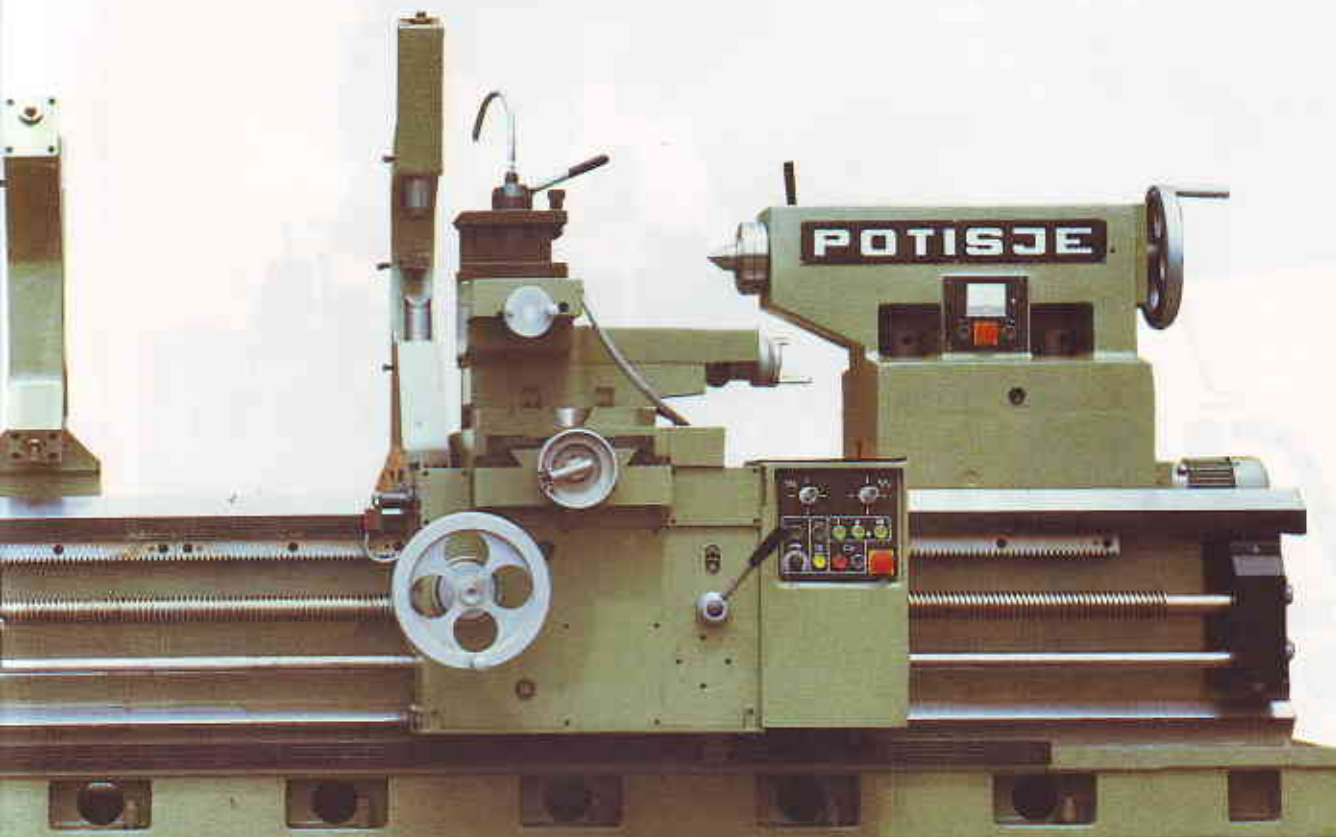
The hydraulic system and the disposition of the pipelines are shown in the catalogue.

ELECTRIC EQUIPMENT

The electric equipment is a very functional one. The machine has an electro cabinet in which all command and control elements are placed.

The control pannels are set on the machine respecting all ergonomic and safety criterions.

The electric conductors are on the rear side of the machine, what gives a better safety in operation.

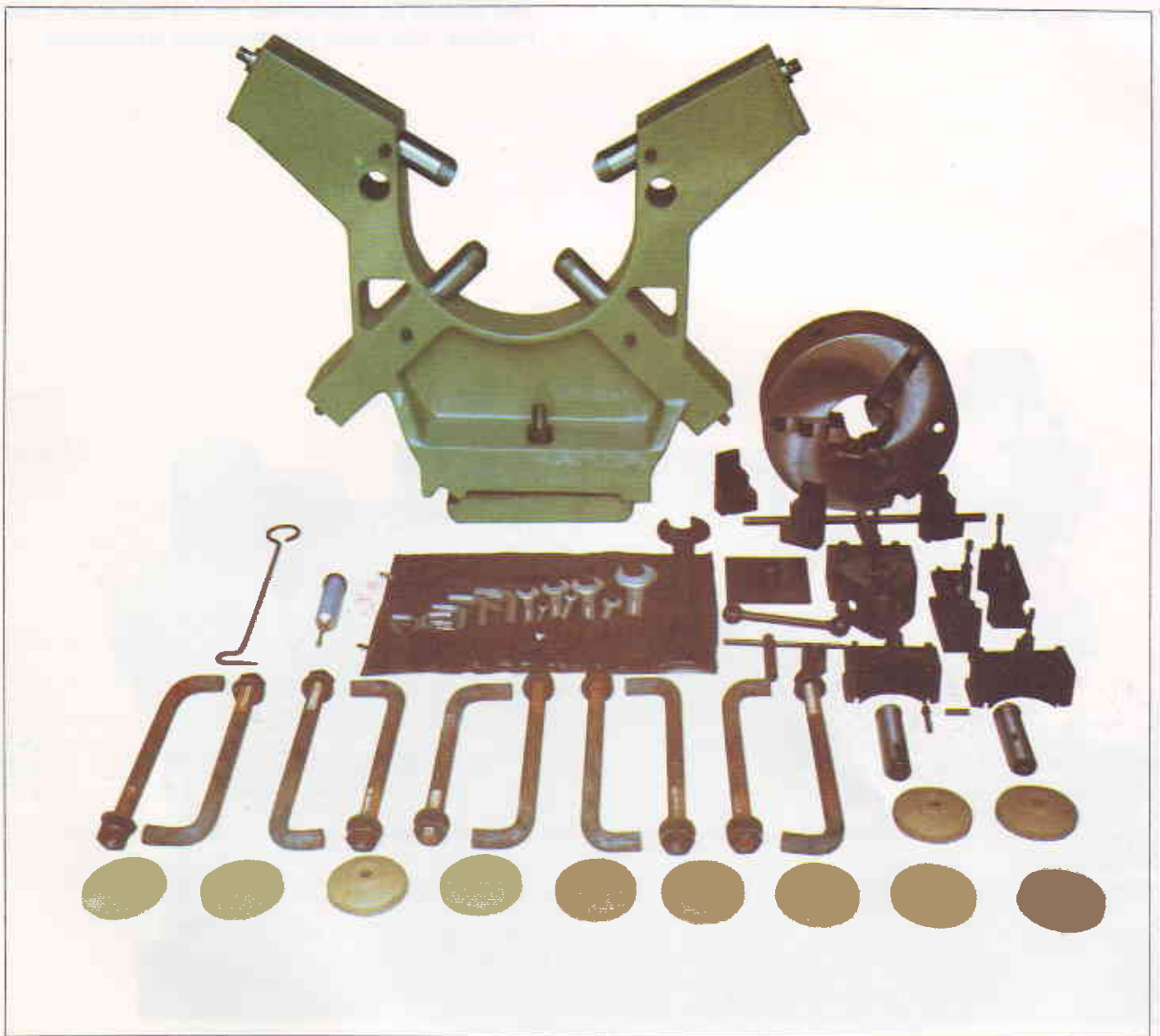


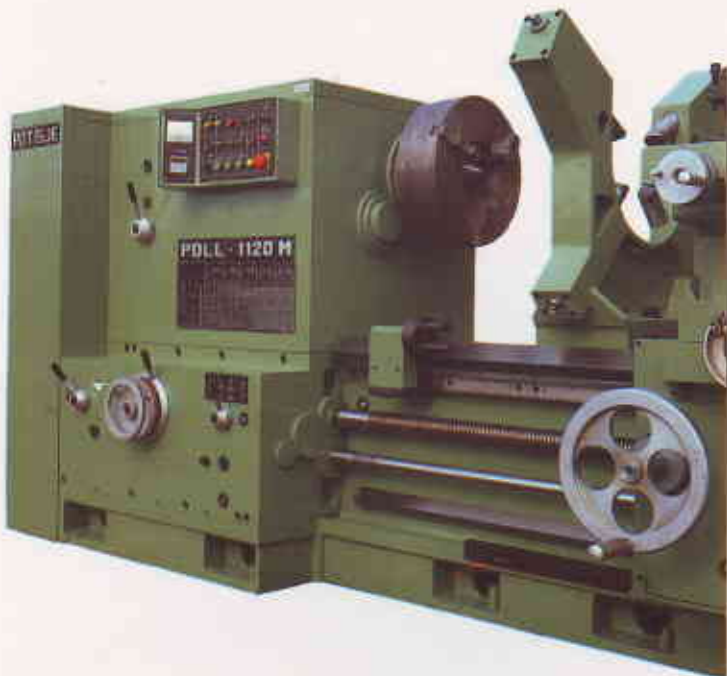
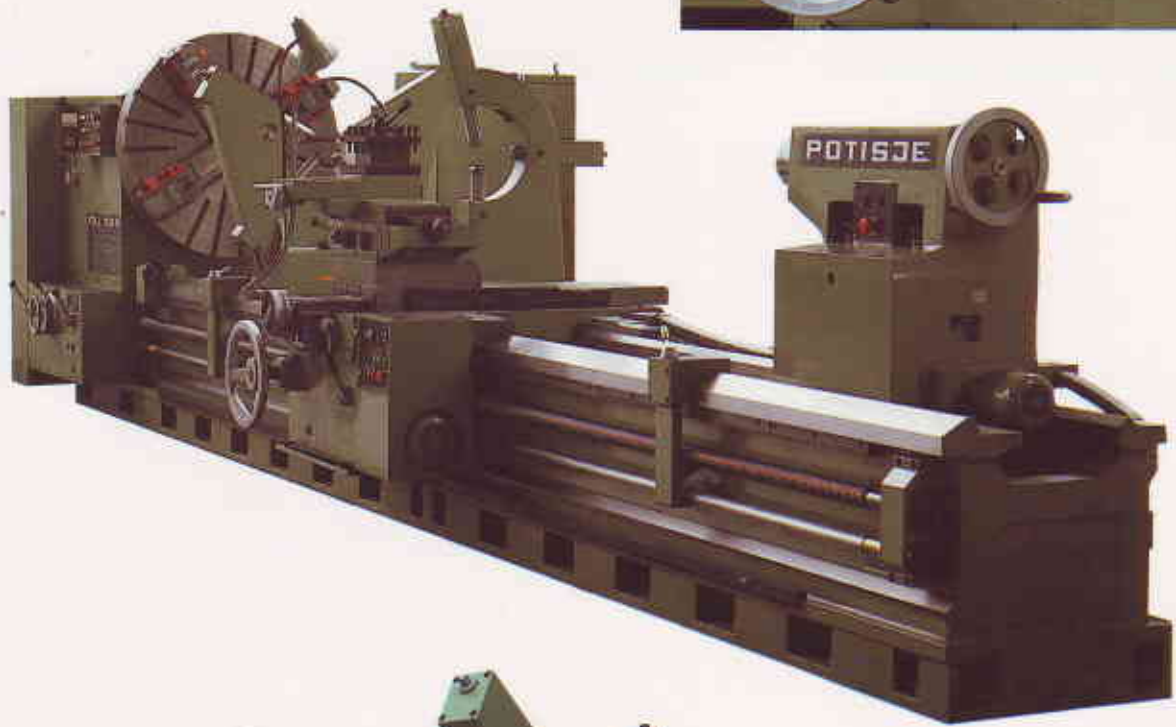
INSTALLATION OF THE MACHINE AND OF THE SYSTEM FOR COOLANT LIQUID

The foundation of the machine plays a very important role in its operation, especially for the machines of large dimensions and very massive construction. The machine should be positioned in a very stable way.

The tanks for collection and distribution of coolant liquid are placed on the rear side of the machine.

ACCESSORIES ON THE MACHINE





TECHNICAL CHARACTERISTIC

HEIGHT OF CENTRES		PD-1120	PD-1250	PD-1600	PD-2000
over the bed	mm	565	660	810	1010
BIGGEST REVOLUTION DIAMETER					
over the bed	mm	1120	1300	1600	2000
over the sliders	mm	760	1000	1200	1600
face plate diameter	mm	1120		1600	
MAIN SPINDLE					
bore diameter	mm	130		210	
nose	DIN N°	55.027		55.026	
		11		15	
front bearing inside diameter	mm	190		260	
number of speeds		1,6 - 630		1 - 350	
I. range	min ⁻¹	1,6 - 125		0,9 - 70	
II. range	min ⁻¹	3,15 - 250		1,8 - 140	
III. range	min ⁻¹	8 - 30		4,5 - 350	
BED AND TOOL POST					
bed width	mm	710		1120	
longitudinal slider length		1000		1200	
cross slide travel	mm	565	660	1000	
upper slide travel	mm	100	130	200	
tolerated tool section	mm				12
lead screw thread	mm	50 × 32		60 × 40	
FEEDS					
Number		48			
range of longitudinal	mm/o	0,09 - 5			
range of cross	mm/o	0,045 - 2,5			
THREADS					
number		48			
metric	mm	0,56 - 128			
Whitworth	pitch 1"	64 - 0,28			
modul		0,25 - 32			
TAILSTOCK					
sleeve diameter	mm	160		220	
sleeve bore taper	Morse N°	6		ME 80	
sleeve travel	mm	250		280	
STEADIES					
fixed steady opening diameter	mm	400 - 760		100 - 500	400 - 800
DRIVING ELECTRIC MOTOR (DC)					
power	HP/kW	66/48,5			
revolution numbers	min ⁻¹	50 - 3700			
ELECTROMOTOR FOR RAPID TRAVEL OF SLIDERS					
power	kW	1,1			
revolution numbers	min ⁻¹	680			
rapid travel speed	m/min z/x	3,6/1,8			
MAXIMAL WEIGHT OF WORKPIECE					
between centres with two steadies	Kp	8000		20000	
between centres with one steady	Kp	6300		16000	
between centres without steady	Kp	5000		12500	
in face plate	Kp	1500		2500	
distance between workpiece gravity center and face plate	mm	215		320	
MAXIMAL ROTATION MOMENT					
mass of the machine of 3000 mm	Nm	9400		1600	
augmentation of the mass for each 1000 mm	t	12,5	13	21	23
	t	1		1,5	

We reserve all rights of modification



POTISJE
MACHINE TOOL FACTORY AND FOUNDRIES
24430 ADA - YUGOSLAVIA

TELEPHONE: (024) 852-236, 852-760, 851-817, TELEGRAM: POTISJE, TELEX: YUFAMILA 15163,
 TELEFAX: (024) 851-317