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IS 6893-11 (1992): Proforma for purchase specification for machine tools, Part 11: Capstan and turret lathes [PGD 3: Machine Tools]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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IS 6893 ( Part 11 ) : 1992

भारतीय मानक

मशीनी औजारों की क्रय-विशिष्टि का प्रपत्र

भाग 11 कैपस्टन और टुरेट खराद

*Indian Standard*

**PROFORMA FOR PURCHASE SPECIFICATION  
FOR MACHINE TOOLS**

**PART 11 CAPSTAN AND TURRET LATHES**

UDC 658.711.6 ( 083.22 ) : 621.941.23

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**BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002**

*August 1992*

**Price Group 2**

## Machine Tool Basics and Modular Units Sectional Committee, PE 03

### FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Machine Tool Basics and Modular Units Sectional Committee had been approved by the Production Engineering Division Council.

The proforma for preparation of purchase specification for machine tools has been prepared to enable a prospective buyer to collect data from various manufacturers/suppliers for purposes of comparison. This is meant to be sent out with an enquiry by the purchaser so that the manufacturers/suppliers can fill in the data and send to the purchaser to make the comparison easier for the purchaser.

In the preparation of this standard, considerable assistance has been taken from the details supplied by the leading manufacturers and users of the product.

*Indian Standard***PROFORMA FOR PURCHASE SPECIFICATION  
FOR MACHINE TOOLS****PART 11 CAPSTAN AND TURRET LATHES**

<b>1 SCOPE</b>	<i>IS No.</i>	<i>Title</i>
This standard lays down the proforma for the preparation of purchase specification for Capstan and Turret Lathes. It also gives essential information about the capstan and turret lathes and their accessories which will enable the user to assess their usefulness and applicability.	1983 : 1985	Shank sections for single point turning and planning tools ( <i>first revision</i> )
	2161 : 1962	Coolant pumps for machine tools
	2582 : 1972	Dimensions for lathe spindle noses and face plates
	4537 : 1968	Test chart for capstan and turret lathes
<b>2 REFERENCES</b>		
<b>2.1</b> The following Indian Standards are necessary adjuncts to this standard :	4691 : 1985	Degrees of protection provided by enclosures for rotating electrical machinery ( <i>first revision</i> )
<i>IS No.</i>		<i>Title</i>
5 : 1978	6362 : 1971	Colours for ready mixed paints and enamels ( <i>third revision</i> )
1231 : 1974	12075 : 1987	Designation of methods of cooling for rotating electrical machines
1715 : 1987		Dimensions of three-phase foot-mounted induction motors ( <i>third revision</i> )
		Mechanical vibration of rotating electrical machines with shaft heights 56 mm and higher — measurement, evaluation and limits of vibration severity
		Dimensions for self-holding tapers ( <i>second revision</i> )

**3 PROFORMA**

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
<b>3.1 Capacity</b>			
<b>3.1.1 Maximum swing:</b>			
a) Over bed and under pilot bar		mm	
b) Over bed without pilot bar		mm	
c) Over cross-slide		mm	
<b>3.1.2</b> Distance between spindle flange to turret face, <i>Max/Min</i>		mm	
<b>3.1.3</b> Maximum facing diameter		mm	
<b>3.1.4</b> Bed width		mm	
<b>3.1.5</b> Maximum weight of workpiece on spindle (including weight of chuck/fixture)		kg	

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
<b>3.2 Main Spindle</b>			
3.2.1 Type and size of spindle nose	IS 2582 : 1972		
3.2.2 Type and size of taper bore in spindle ( if provided )	IS 1715 : 1986		
3.2.3 Type and size of internal taper in socket ( if provided )	IS 1715 : 1986		
3.2.4 Size of bore in spindle		mm	
<b>3.3 Turret/Capstan</b>			
3.3.1 Turret configuration			
3.3.2 Number of tool holes and diameter		No./mm	
3.3.3 Stroke			
a) Manual		mm	
b) Automatic		mm	
<b>3.4 Tool Post</b>			
3.4.1 Type of tool holder			
3.4.2 Maximum shank section of tool	IS 1983 : 1985	mm × mm	
3.4.3 Stroke of cross-slide		mm	
<b>3.5 Main Spindle Speeds</b>			
3.5.1 No. of speeds and range — forward direction		No./rpm	
3.5.2 No. of speeds and range — reverse direction		No./rpm	
<b>3.6 Feeds</b>			
3.6.1 Saddle:			
a) No. of longitudinal feeds and range, per revolution of spindle		No./mm	
b) No. of transverse feeds and range per revolution of spindle		No./mm	
3.6.2 Turret/Capstan slide:			
a) No. of longitudinal feeds and range, per revolution of spindle		No./mm	
b) Rate of rapid traverse ( for turret lathes only )		mm/min	
<b>3.7 Threads</b>			
3.7.1 No. and pitch range :			
a) Metric		mm No./range	
b) Any other type		No./range	
<b>3.8 Lubrication : Type of Lubrication ( Details to be specified )</b>			
<b>3.9 Safety Provisions: ( Details to be specified )</b>			
<b>3.10 Electricals</b>			
3.10.1 Total power		kW	

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
<b>3.10.2</b> Power supply		V, ph, Hz	
<b>3.10.3</b> Motor ( s )			
<b>3.10.3.1</b> Main:			
a) Type			
b) Frame size and mounting	IS 1231 : 1974		
c) Output(s)		kW	
d) Speed(s)		rev/min	
e) No. of phase			
f) Power factor			
g) Efficiency		percent	
h) Rated voltage		V	
j) Frequency		Hz	
k) Type of duty			
m) Class of insulation			
n) Ambient temperature		deg C	
p) Type of protection	IS 4691 : 1985		
q) Type of cooling	IS 6362 : 1971		
r) Vibration limits	IS 12075 : 1987		
s) Any other features			
<b>3.10.3.2</b> Other motor(s)			
a) Type			
b) Frame size and mounting	IS 1231 : 1974		
c) Output(s)		kW	
d) Speed(s)		rev/min	
e) No. of phase			
f) Power factor			
g) Efficiency		percent	
h) Rated voltage		V	
j) Frequency		Hz	
k) Type of duty			
m) Class of insulation			
n) Ambient temperature		deg C	
p) Type of protection	IS 4691 : 1985		
q) Type of cooling	IS 6362 : 1971		
r) Vibration limits	IS 12075 : 1987		
s) Any other features			
<b>3.11</b> Coolant pump	IS 2161 : 1962		
a) Output(s) of motor		kW	
b) Speed(s) of motor		rev/min	
c) Discharge of pump at maximum working height ( see dimensions H in the figure in Annex A )		l/min	



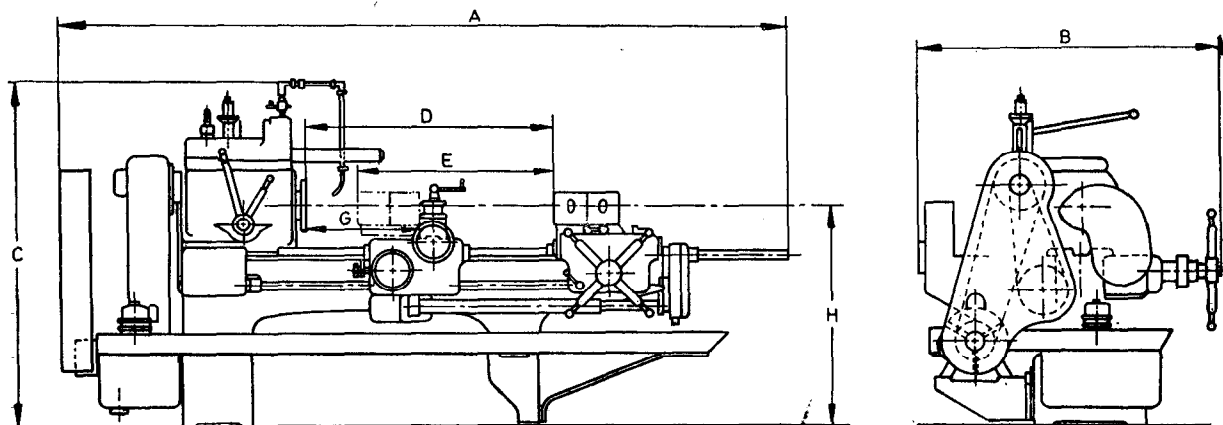
Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
3.12 Geometrical and Practical Tests	IS 4537 : 1968		
3.13 Colour	IS 5 : 1978		
3.14 Weight of Machine with Electricals and Standard Accessories		kg	
3.15 Floor Space Required ( Length × Width )		mm × mm	
3.16 Standard Accessories :			
( Details of accessories — IS No. to be specified wherever applicable like centres, spanners etc. )			
3.17 Special Accessories:			
( Details of accessories — IS No. to be specified wherever applicable like chuck, live centre, bar feeding attachments and collets etc ).			

NOTE — While submitting quotations, the following information shall be furnished by manufacturers/ suppliers, together with technical literature and capacity chart of the machine ( see Annex A for representative capacity chart for Capstan and Turret Lathes ):

- a) Hardness of bed guideways, and
- b) Any other special features.

### ANNEX A

#### REPRESENTATIVE CAPACITY CHART FOR CAPSTAN AND TURRET LATHES



- |   |   |   |
|---|---|---|
| A | Overall length  | = |
| B | Overall width   | = |
| C | Overall height  | = |
| D | Distance between spindle flange to turret face, <i>Max/Min</i>        | = |
| E | Stroke of turret/capstan, <i>Max</i>                                  | = |
| F | Height of spindle centre above ground level                           | = |
| G | <i>Min/Max</i> distance between spindle flange and square turret face | = |

NOTE — Overall dimensions shown shall cover all standard accessories.

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