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मानक

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IS 6893-8 (1992): Proforma for purchase specification for machine tools, Part 8: Internal cylindrical grinding machines with horizontal spindle [PGD 3: Machine Tools]



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भारतीय मानक

मशीनी औजारों की क्रय – विशिष्ट का प्रपत्र

भाग 8 क्षैतिज तकुओं वाली आन्तरिक बेलनाकार पेषण मशीने

*Indian Standard*

**PROFORMA FOR PURCHASE  
SPECIFICATION FOR MACHINE TOOLS**

**PART 8 INTERNAL CYLINDRICAL GRINDING MACHINES  
WITH HORIZONTAL SPINDLE**

UDC 658.711.6 (083.22) : 621.924.57

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

October 1992

Price Group 2

## FOREWORD

This 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 the data and send to the purchaser to make the comparison easier for the purchaser.

While preparing 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 8 INTERNAL CYLINDRICAL GRINDING MACHINES WITH HORIZONTAL SPINDLE

#### 1 SCOPE

This standard lays down the proforma for purchase specification for internal cylindrical grinding machines. It also give essential information about the internal cylindrical grinding machines and their accessories which will enable to assess their applicability.

#### IS No.

#### Title

(Part 1) : 1981 Spindle noses, camlock, type  
(*second revision*)  
(Part 2) : 1987 Camlock type (*second  
revision*)  
(Part 3) : 1987 Spindle noses, bayonet type  
(*second revision*)

#### 2 REFERENCES

IS No.	Title	IS No.	Title
5 : 1978	Colours for ready mixed paints and enamel ( <i>third revision</i> )	6362 : 1971	Designation of methods of cooling for rotating electrical machines
1231 : 1974	Dimensions of three-phase foot-mount induction motors ( <i>third revision</i> )	12075 : 1987	Mechanical vibration of rotating electrical machines with shaft heights 56 mm and high — measurement, evaluation and limits vibration severity
1715 : 1987	Dimensions for self-holding tapers ( <i>second revision</i> )		
2161 : 1962	Coolant pumps for machine tools	10352 : 1982	Test chart for internal cylindrical grinding machines with horizontal spindle
2582 : 1987	Dimensions for lathe spindle noses and faceplates		

#### 3 PROFORMA

<i>Specifications</i>	<i>Reference to Indian Standard</i>	<i>Unit</i>	<i>Actual Value</i>
(1)	(2)	(3)	(4)

##### 3.1 Capacity

3.1.1 Diameter of bore ground <i>Max</i> <i>Min</i>	mm
3.1.2 Maximum grinding depth	mm
3.1.3 Maximum taper that can be ground	Degree
3.1.4 Maximum swing with guard	mm
3.1.5 Maximum collet dia	
3.1.6 Maximum weight of work piece that can be held in chuck	kg

##### 3.2 Table

3.2.1 Maximum and minimum travel	mm
3.2.2 Maximum swivel on either side if applicable	Degree

<i>Specifications</i>	<i>Reference to Indian Standard</i>	<i>Unit</i>	<i>Actual Value</i>
(1)	(2)	(3)	(4)
<b>3.2.3</b> Table travel per revolution of hand wheel			
a) slow		mm	
b) fast		mm	
<b>3.2.4</b> Infinitely variable speed		range mm/min	
<b>3.3 Work Head</b>			
<b>3.3.1</b> Type and size of spindle nose	IS 2582 ( Parts 1 to 3 ) : 1987		
<b>3.3.2</b> Type and size of internal taper in spindle	IS 1715 : 1987		
<b>3.3.3</b> Spindle speeds No. and range		No./rpm range	
<b>3.3.4</b> Swivel ( either side if applicable )		Degree	
<b>3.4 Grinding Wheels Spindle Drive</b>			
<b>3.4.1</b> — Belt Driver			
— Electrogrinding high frequency			
<b>3.4.2</b> Speed			
— Maximum		rpm	
— Minimum		rpm	
<b>3.4.3</b> In feed range for Automatic Machines			
— Coarse		mm/stroke	
— Fine		mm/stroke	
<b>3.4.4</b> Maximum permissible peripheral speed		m/s	
<b>3.5 Lubrication</b> : Type of lubrication ( details to be specified )			
<b>3.6 Safety Devices</b> Details to be specified			
<b>3.7 Electricals</b>			
<b>3.7.1</b> Total power		kW	
<b>3.7.2</b> Power supply		V, pH, Hz	
<b>3.7.3</b> Motor(s)			
<b>3.7.3.1</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	

<i>Specifications</i>	<i>Reference to Indian Standard</i>	<i>Unit</i>	<i>Actual Value</i>
(1)	(2)	(3)	(4)
h) Rated voltage		V	
j) Frequency		Hz	
k) Type of duty			
m) Class of insulation			
n) Ambient temperature		°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>3.7.3.2 Other motor(s):</b>			
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		°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>3.8 Coolant Pump</b>	IS 2161 : 1962		
a) Output(s) of motor		kW	
b) Speed(s) of motor		rev/min	
c) Discharge of pump at maximum working height		l/min	
<b>3.9 Geometrical and Practical Test</b>	IS 10352 : 1982		
<b>3.10 Colour</b>	IS 5 : 1978		
<b>3.11 Weight of Machine with Electrical and Standard Accessories</b>			
<b>3.12 Floor Space Required (Length × Width)</b>		mm × mm	



<i>Specifications</i>	<i>Reference to Indian Standard</i>	<i>Unit</i>	<i>Actual Value</i>
(1)	(2)	(3)	(4)

**3.13 Standard Accessories**

( Details of accessories IS No. is to be specified wherever applicable like spanners, dressers centres, etc )

**3.14 Special Accessories**

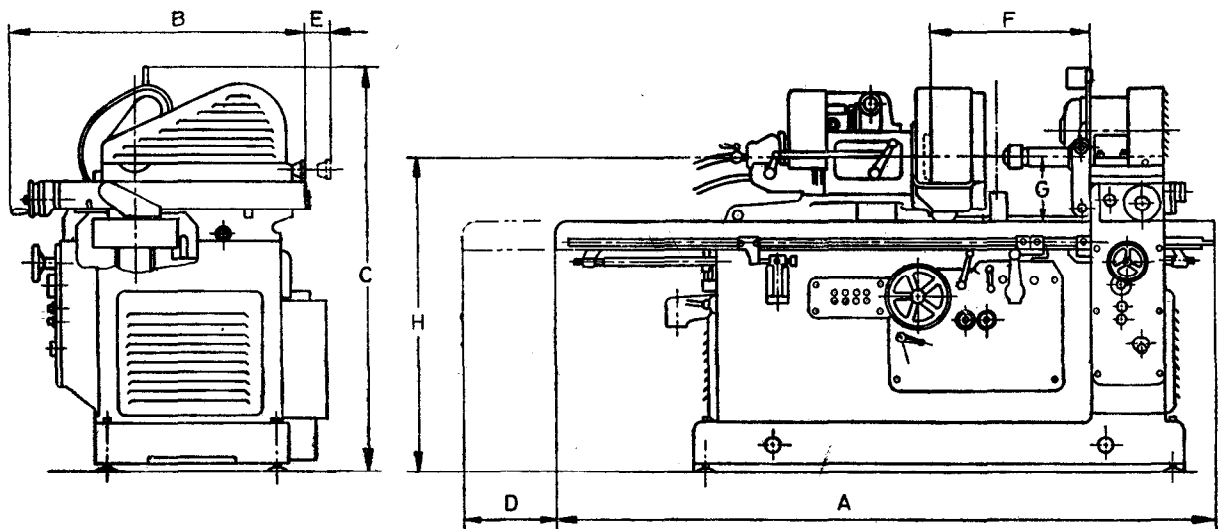
( Details of accessories IS No. is to be specified wherever applicable like, chuck, face grinding attachments, diamond tool, dust collector size controls, autowheel ware compensation, etc )

NOTE — While submitting quotations, the following informations shall be furnished by manufacturers/suppliers, together with technical literature and capacity chart of the machine ( see Annex A for representative capacity chart for Internal Grinding machine with horizontal spindle ):

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

**ANNEX A**

**REPRESENTATIVE CAPACITY CHART FOR INTERNAL CYLINDRICAL GRINDING MACHINES**



- A — Overall length =
- B — Overall width =
- C — Overall height =
- D — Movement of table, *Max* =
- E — Movement of grinding saddle, *Max* =
- F — Distance between headstock spindle and grinding saddle, *Max* =
- G — Height of spindle centre from table surface =
- H — Height of spindle centre from ground level =

NOTE — Dimensions given shall consider all the standard accessories.

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