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IS 8711 (2002): Gap Frame Open Front Mechanical Presses - Capacity Ratings and Dimensions [PGD 4: Metal Forming Machines]



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भारतीय मानक
गैप फ्रेम सामने से खुली यांत्रिक
प्रेसों की क्षमता का संनिर्धारण तथा आयाम
(पहला पुनरीक्षण)

Indian Standard

GAP FRAME OPEN FRONT MECHANICAL PRESSES —
CAPACITY RATINGS AND DIMENSIONS

(First Revision)

ICS 25.040.30

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Metal Forming Machines Sectional Committee had been approved by the Basic and Production Engineering Division Council.

This standard was first published in 1978 with a view to assist the designers in designing new gap frame open-back presses. Variety reduction was one of the objects aimed at by the manufacturers engaged in mass production and also to ensure improved designs within the sizes given in the standard to make it economical in long run. This standard is applicable for left to right shaft mechanical presses.

In view of technological innovation and varied requirements of user industries, national and international, many changes have been introduced in the presses. Also these changes have been included in this standard. In this revision, the following major changes have been incorporated:

- a) Alternate types of bed, one with round opening and the other a rectangular opening have been included. T-slots have been provided in the bed with the round opening so that it can be used without a bedplate if required.
- b) Two types of bedplate are specified as Type 1 and Type 2. Details are also given for bedplug for beds with round holes and for the bedplate ring for bedplates of Type 2.
- c) Table 1 has been thoroughly modified. A choice of two values is given for some dimensions in this table. These are designated as series 1 and series 2. To minimize the variety of dimensions as far as possible it is intended that all the values for a given press should be selected from one of the series. However, in order to meet special requirements it is permitted to select the values for shut height only from either series 1 or series 2.
- d) Title of the standard also has been changed.

While revising this standard considerable assistance has been derived from ISO 6898 : 1984 'Open-front mechanical presses — Capacity ratings and dimensions' issued by the International Organization for Standardization (ISO).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off the numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GAP FRAME OPEN FRONT MECHANICAL PRESSES — CAPACITY RATINGS AND DIMENSIONS (*First Revision*)

1 SCOPE

This standard specifies capacity ratings and dimensions for gap frame open front mechanical presses with or without a passage through the frame and with or without a slope (inclinable or non-inclinable).

2 REFERENCES

The following standards contain provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
919 (Part 1) : 1993	ISO Systems of limit and fits: Part 1 Bases of tolerances, deviations and fits (<i>second revision</i>)

<i>IS No.</i>	<i>Title</i>
1821 : 1987	Dimensions for clearance holes for bolts and screws (<i>third revision</i>)
2013 : 1995	T-Slots — Dimensions and spacing (<i>third revision</i>)
2102 (Part 1) : 1993	General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerances indication (<i>third revision</i>)
8064 : 2002	Method of designation of mechanical and hydraulic presses (<i>second revision</i>)

3 DIMENSIONS

The dimensions of gap frame open back presses shall be as given in Table 1 (read with Fig. 1 to Fig. 7).

4 DESIGNATION

The gap frame open front presses shall be designated as given in IS 8064.

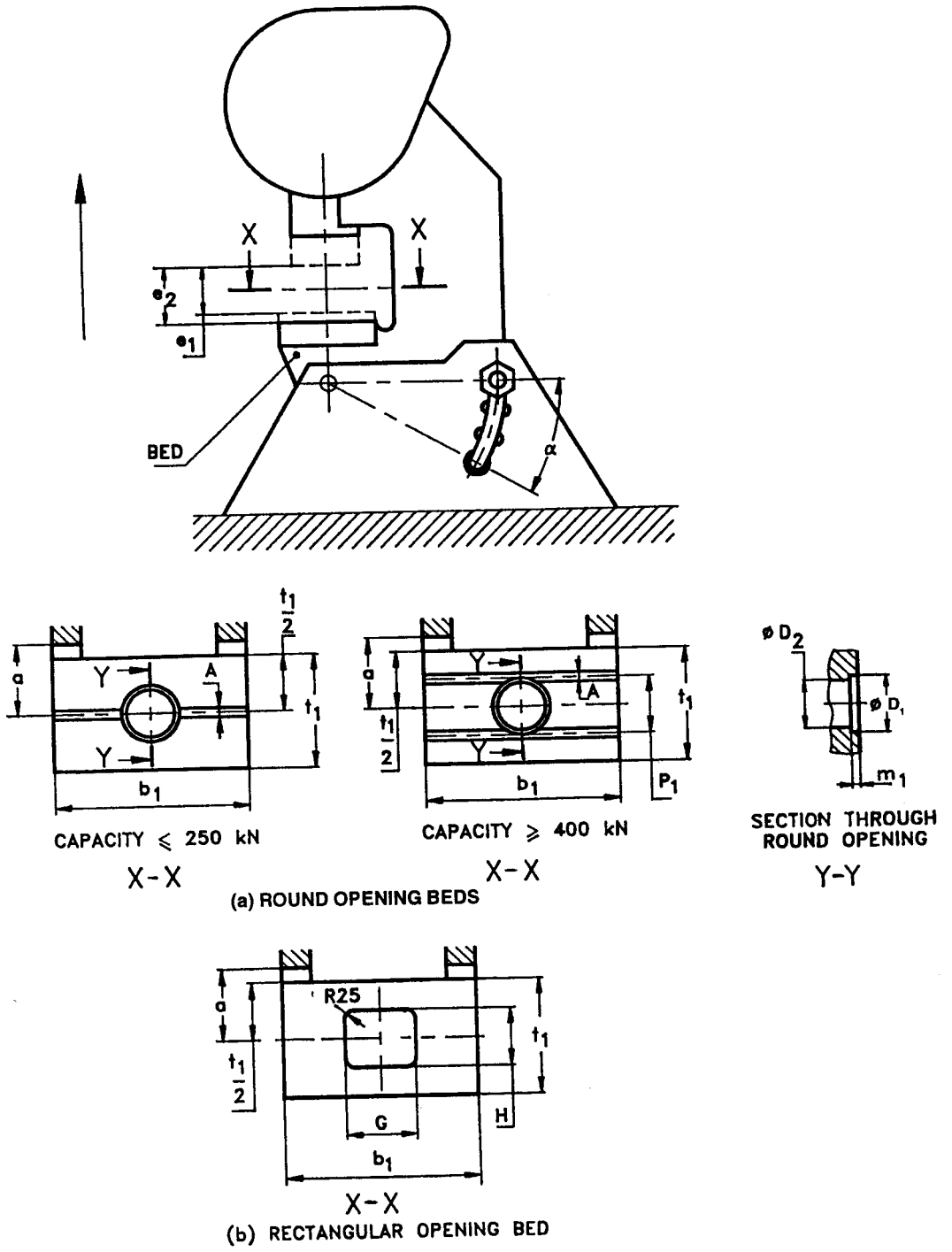


FIG. 1 LAYOUT OF PRESS AND ALTERNATIVE BEDS

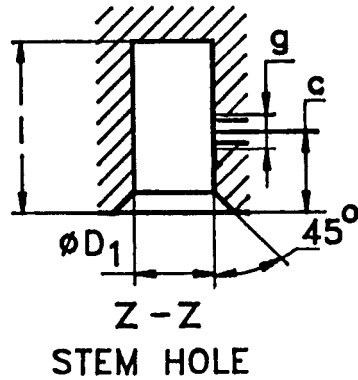
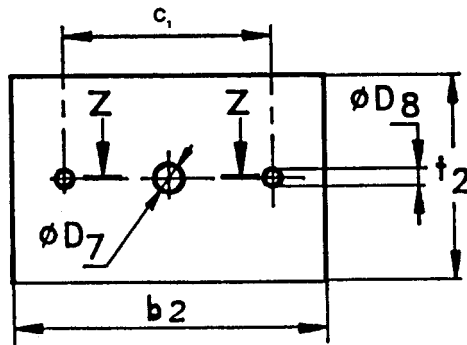


FIG. 2 SLIDE

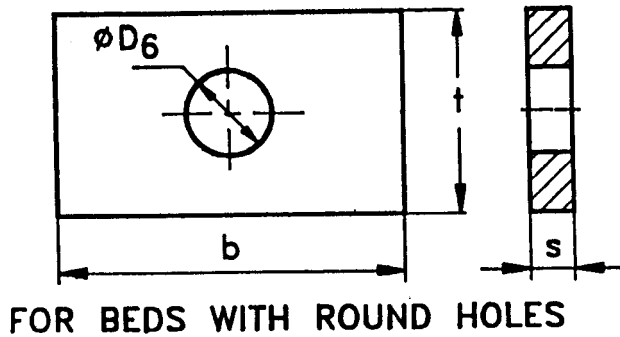


FIG. 3 BEDPLATES TYPE 1

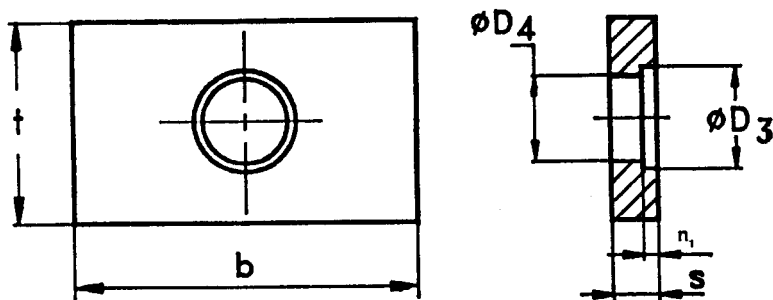


FIG. 4 BEDPLATES TYPE 2

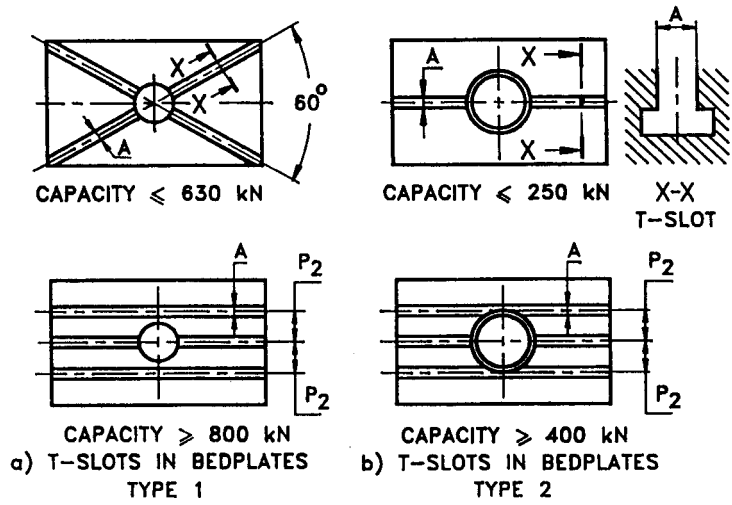


FIG. 5 T-SLOTS FOR BEDPLATES

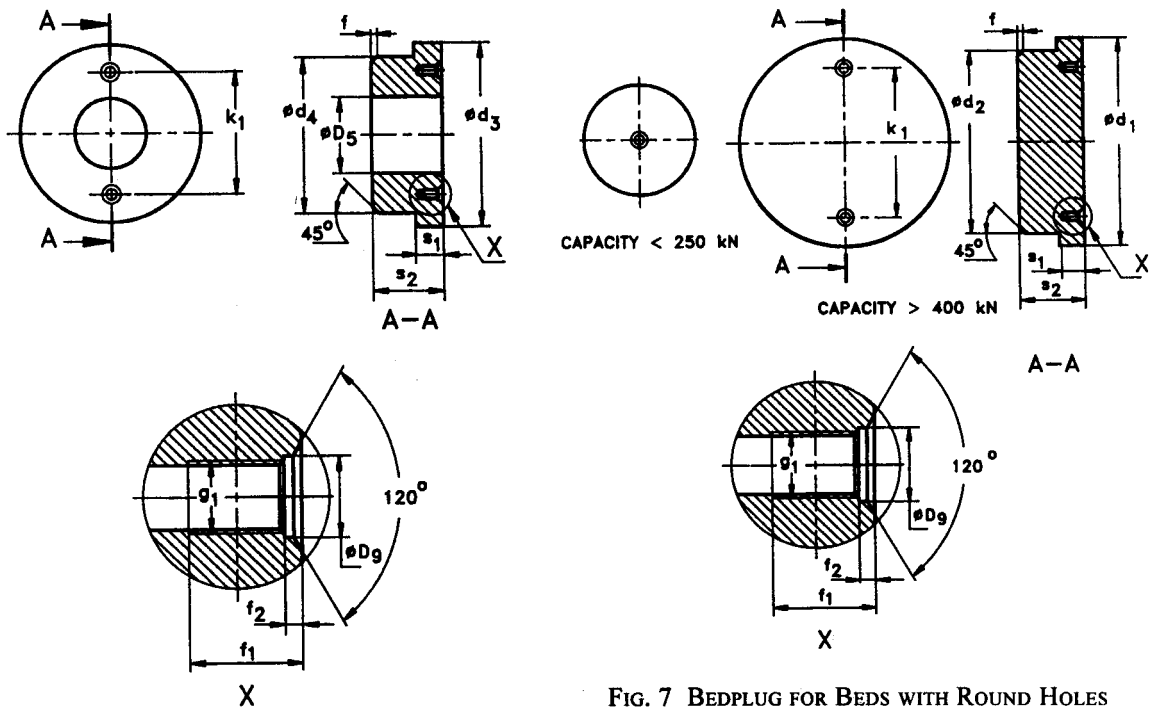


FIG. 7 BEDPLUG FOR BEDS WITH ROUND HOLES

FIG. 6 BEDPLATE RING FOR BEDPLATES TYPE 2

Table 1 The Dimensions of Gap Frame Open Back Presses
(Clause 3)

All dimensions in millimetres.

Nominal Capacity		Note Referring	100	160	250	400	630	(800)	1000	(1250)	1600	(2000)	2500	
General data	Throat depth													
	α_{\min}	series 1	165	180	210	235	260	285	310	340	370	405	440	
		series 2	–	–	–	290	325	355	385	425	465	505	545	
	Shut height													
	e_1	series 1	1	160	180	200	225	250	275	300	325	355	390	425
		series 2		200	225	250	280	315	345	375	410	450	490	530
	Bed to slide distance													
	e_2	series 1	2	225	250	275	305	335	365	395	425	460	500	550
		series 2		265	295	325	360	400	435	470	510	555	600	655
	Side adjustment													
		series 1		40	45	50	56	63	71	80	90	100	112	125
		series 2		–	–	–	80	85	90	100	112	125	140	160
	Stroke length													
		series 1	<i>Max</i>	63	71	80	90	100	112	125	140	160	180	200
			12			16			20			25		
		<i>Min</i>	–			125	140	160	180	200	224	250	280	
	series 2	<i>Max</i>	–			16			20			25		
		<i>Min</i>	–			16			20			25		
Direct drive														
	series 1	3	2	2	2	2.5	2.5	3	3	–				
	series 2		–			3	3	4	4	–				
Gear drive														
	series 1	3	–			4	4	4	4	6	6	6	6	
	series 2		–			6	6	6	6	9	9	9	9	
Nominal air pressure		4	0.5(5)											
Bed	Surface													
	b_1	series 1	450	500	560	630	710	780	850	925	1000	1050	1180	
	t_1		315	355	400	450	500	550	600	655	710	780	850	
	b_1	series 2	–			800	900	980	1060	1155	1250	1375	1500	
	t_1		–			560	630	690	750	825	900	980	1060	
	Round opening													
	D_1 tol. H11	5	180	200	225	250	280	305	335	365	400	435	475	
	D_2		160	180	200	225	250	275	300	325	355	390	425	
	Shoulder depth													
	m_1	6	30			45				56				
Rectangular opening														
G		225	250	280	315	355	390	425	460	500	550	600		
H		160	180	200	225	250	275	300	325	355	390	425		
T-slots														
width A	7	18			22					23				
pitch P_1	8	–			200			250			320			400
Maximum angle of inclination α		30						25						

Table 1 (Continued)

Nominal Capacity		Note Referring	100	160	250	400	630	(800)	1000	(1250)	1600	(2000)	2500	
Slide	Surface b_2 t_2 b_2 t_2	series 1	280	315	355	400	450	490	530	580	630	690	750	
			180	200	225	250	280	305	335	365	400	435	475	
		-			500	560	615	670	735	800	875	950		
		-			315	355	390	425	465	500	550	600		
	Stem hole D_1 tol $H7$ l c	5	40			50			65					
			75			85			105					
			40			45								
	Clamping bolt D_2		M20						M24					
	Attaching holes D_k c_1	series 1	18			22			28					
			235	265	300	335	375	410	450	490	530	580	630	
		series 2	-			425	475	515	560	615	670	735	800	
	Bedplate	Surface b t b t	series 1	440	490	550	620	700	770	840	905	980	1070	1160
305				345	390	440	490	540	590	645	700	770	840	
-			790	890	970	1050	1135	1230	1355	1480				
-			550	620	680	740	815	890	970	1050				
Through hole D_6 D_3 tol. $H11$ D_4		9	90	95	100	106	112	118	125	132	140	150	160	
		5	180	200	225	250	280	305	335	365	400	435	475	
		10	160	180	200	225	250	275	300	325	355	390	425	
		10												
Shoulder depth n_1		10	36			45			56					
		6	36			45			56					
Thickness s			65	70	75	80	85	90	95	100	105	110	125	
T-slots width A pitch P_2 pitch P_2		7	18			22			28					
	9	-			125			160			200			
	10	-			100			125			160			
Bedplug d_1 tol $a9$ d_2 g_1 D_0 k_1 f f_1 f_2 s_1 s_2	5	180	200	225	250	280	305	335	365	400	435	475		
		158	178	198	223	248	273	298	323	353	388	423		
	11	M 10			M 12			M 16						
		10.5			13			17						
	-			180	200	215	235	255	280	305	335			
	2			3										
	15			18			24							
	1.5			2										
	6	36			45			56						
		63	68	73	78	83	88	93	98	103	108	123		

Table 1 (Concluded)

Nominal Capacity		Note Referring		100	160	250	400	630	(800)	1000	(1250)	1600	(2000)	2500
Bedplate ring	d_5 tol d_9	10	5	180	200	225	250	280	305	335	365	400	435	475
	d_4			158	178	198	223	248	273	298	323	353	388	423
	D_5			90	100	112	125	140	155	170	185	200	215	235
	g_1		M 10				M 12				M 16			
	D_6		10.5				13				17			
	k_2		125	140	160	180	200	215	235	255	280	305	335	
	f		2				3							
	f_1		15				18				24			
	f_2		1.5				2							
	s_1		36				45				56			
	s_2		63	68	73	78	83	88	93	98	103	108	123	

NOTES

- 1 Shut height is measured from the bedplate surface to the slide surface with the maximum variable stroke, stroke down and slide adjustment up.
- 2 Bed to slide distance is measured from the bed surface to the slide surface with the maximum variable stroke, stroke down and slide adjustment up.
- 3 Distance above bottom dead centre at which the capacity of the press shall be measured on maximum stroke.
- 4 For the operation of pneumatic equipment.
- 5 Tolerances shall be as given in IS 919 (Part 1).
- 6 Bedplate ring and bedplug may be 0.05 mm *Max* in mm above bedplate surface and bed surface, respectively.
- 7 T-slots dimensions shall be as given in IS 2013.
- 8 Beds with round opening only.
- 9 Values corresponding to bedplate Type 1.
- 10 Values corresponding to bedplates Type 2.
- 11 Dimensions for clearance holes shall be as given in IS 1821.
- 12 All sizes within brackets are non-preferred.
- 13 Tolerances of untoleranced dimensions shall be of medium class according to IS 2102 (Part 1).
- 14 Nominal capacity is given in kilo newtons, pressure in megapascals.

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This Indian Standard has been developed from Doc : No. BP 04 (0013).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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