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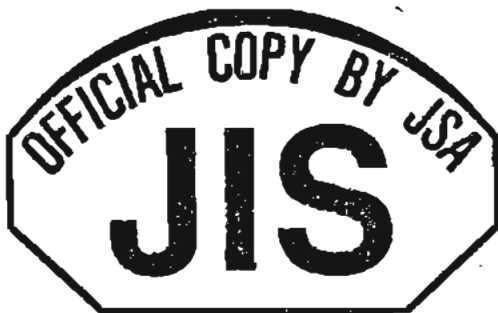
JAPANESE INDUSTRIAL STANDARD

Tooling Dimensions for the Straight-side
Mechanical Presses

JIS

B 6451-1975

(Reaffirmed: 1984)



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JAPANESE INDUSTRIAL STANDARD

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Tooling Dimensions for the Straight-side
Mechanical PressesB 6451-1975
(Reaffirmed: 1984)1. Scope

This Japanese Industrial Standard specifies the tooling dimensions of slide and bolster as well as the dimensions concerning bed face for the straight-side mechanical presses for plate metal forming of (50 to 2000) $\times 10^3$ kgf(¹) { 0.49 to 19.61 MN } in capacity.

Note (¹) It indicates the nominal capacity of main slide.

Remark 1. The straight-side mechanical presses are classified as follows on the base of JIS B 0111.

Name of press	Reference Classification number according to JIS B 0111
Single action crank press	111
Double action crank press	112
Single action crankless press	113
Double action crankless press	114

2. In this Standard the units and numerical values shown in { } are in accordance with the International System of Units (SI) and are appended for informative reference.

Applicable Standards:

JIS B 0111-Glossary of Terms for the Presswork Machinery

JIS B 0407-Permissible Deviations in Dimensions without Tolerance
Indication for Iron Castings

JIS B 0952-T Slots

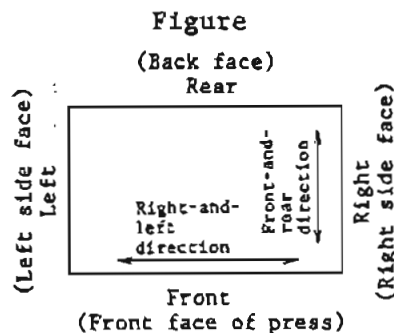
Reference Standard:

JIS Z 8203-SI Units and the Use of their Multiples and of Certain
other Units

2. Definitions

For the purposes of this Standard, following definitions apply (Refer to Figure).

- (1) right-and-left direction It means the direction connecting side faces of right and left towards the front face of press.
- (2) front-and-rear direction It means the direction connecting the front face and the back face.



3. Shape and Dimensions of Slide Face, Bolster and Bed Face

3.1 Straight-side Single Action Single Crankless Press and One-Point Suspension Crankless Press

- (1) Shape and dimensions of slide face shall be in accordance with Attached Table 1.
- (2) Shape and dimensions of bolster shall be in accordance with Attached Table 2.
- (3) Shape and dimensions of bed face shall be in accordance with Attached Table 3.

3.2 Straight-side Single Action Double Crank Press, Two-Point Suspension Crankless Press and Four-Point Suspension Crankless Press

- (1) Shape and dimensions of slide face shall be in accordance with Attached Table 4.
- (2) Shape and dimensions of bolster shall be in accordance with Attached Table 5.
- (3) Shape and dimensions of bed face shall be in accordance with Attached Table 6.

3.3 Straight-Side Double Action Single Crank Press, Double Action Double Crank Press, Double Action One-Point Suspension Crankless Press, Double Action Two-Point Suspension Crankless Press and Double Action Four-Point Suspension Crankless Press

- (1) Shape and dimensions of inner slide face shall be in accordance with Attached Table 7.

- (2) Shape and dimensions of outer slide face shall be in accordance with Attached Table 8.
- (3) Shape and dimensions of bolster shall be in accordance with Attached Table 9.
- (4) Shape and dimensions of bed face shall be in accordance with Attached Table 10.

4. Shape and Dimensions of Cushion Pinhole, T Groove, Bolster Fastening Hole

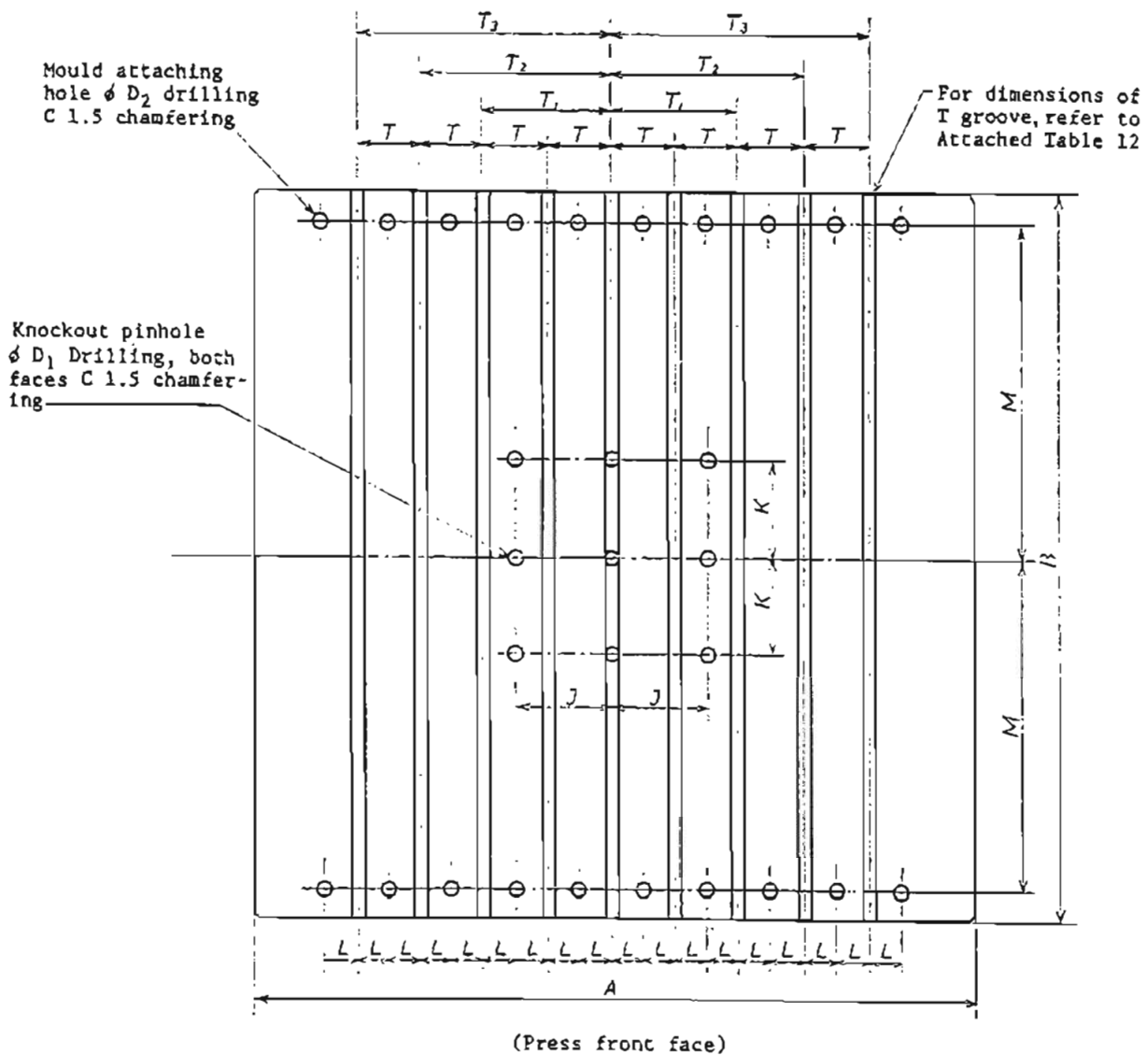
- (1) Shape and dimensions of cushion pinhole shall be in accordance with Attached Table 11.
- (2) Shape and dimensions of T groove shall be in accordance with Attached Table 12.
- (3) Shape and dimensions of bolster fastening hole shall be in accordance with Attached Table 13.

Attached Table 1 (Continued)

Shapes and Dimensions of Slide Faces of Straight-Side
Single Action Single Crank Press and One-Point
Suspension Crankless Press

(b) In the Case of $(500 \text{ to } 2000) \times 10^3 \text{ kgf}$ { 4.90 to 19.61 MN }

Unit: mm



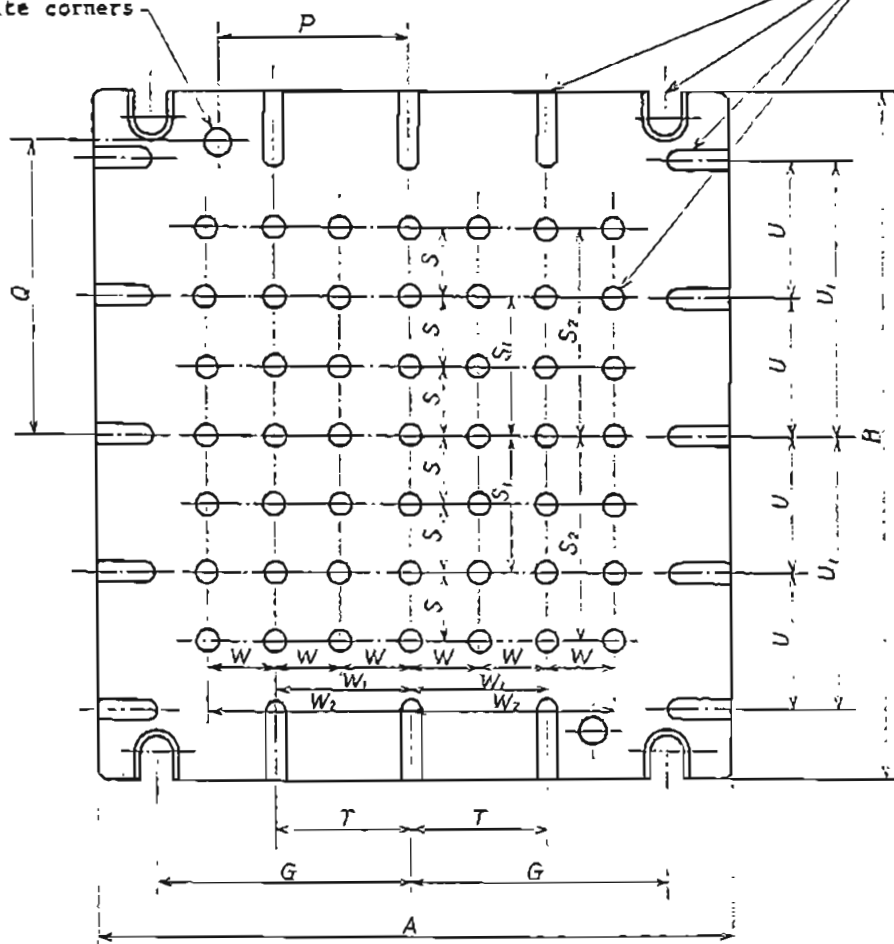
Attached Table 2. Shape and Dimensions of Bolsters of
Straight-Side Single Action Single Crank Press
and One-Point Suspension Crankless Press

Bolsters of Straight-Side Single Action Single Crank Press
and One-Point Suspension Crankless Press

(a) In the Case of $(50 \text{ to } 150) \times 10^3 \text{ kgf}$ $\{0.49 \text{ to } 1.47 \text{ MN}\}$

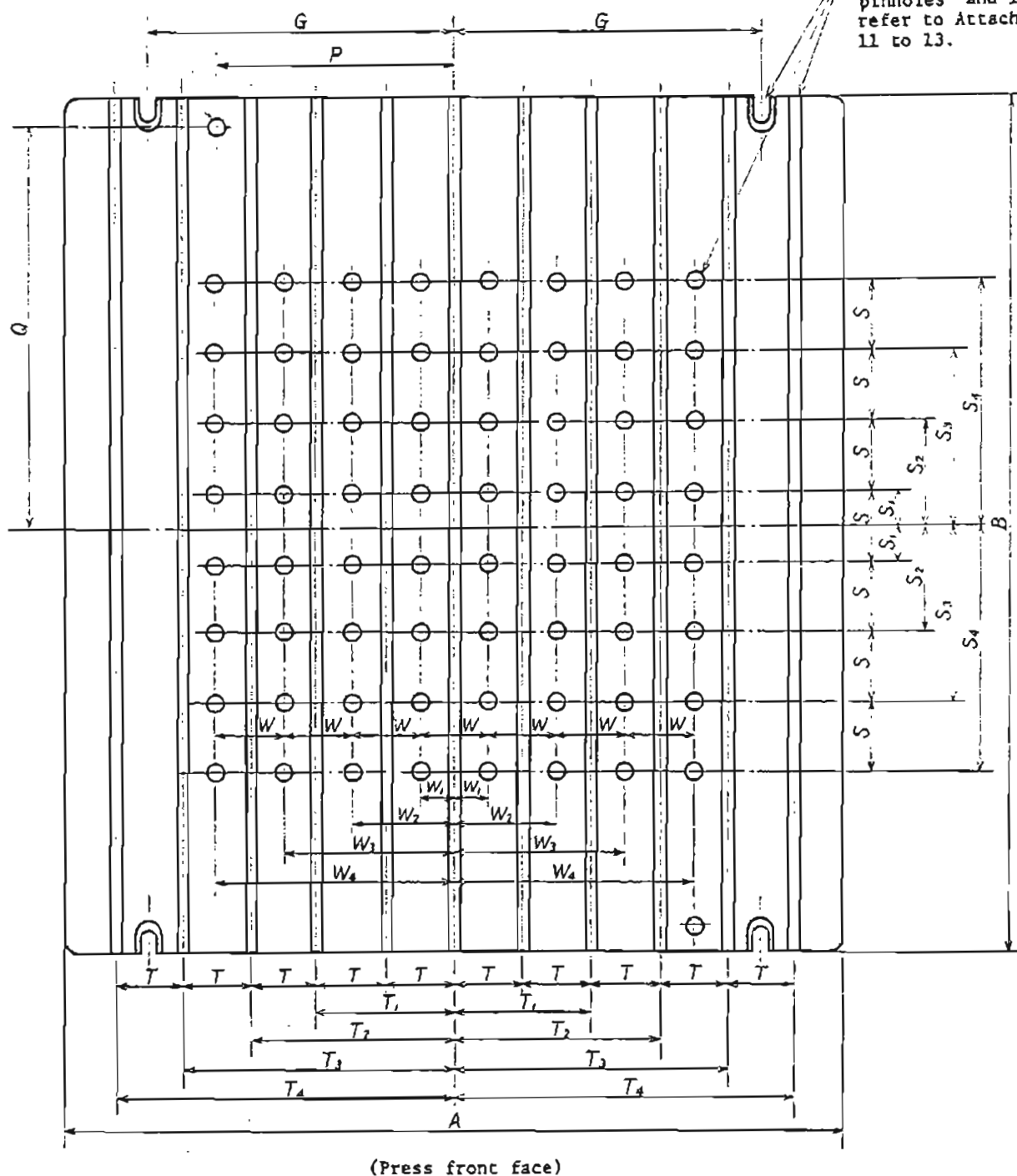
Positioning pin-
hole ϕD_3 reamer
Two pieces at
opposite corners

For dimensions of bolster
fastening holes, cushion
pinholes and T grooves,
refer to Attached Tables
11 to 13.



(Press front face)

Attached Table 2 (Continued)

Bolsters of Straight-Side Single Action Single Crank Press
and One-Point Suspension Crankless Press(b) In the case of $(200 \text{ to } 2000) \times 10^3 \text{ kgf}$ { 1.96 to 19.61 MN }Positioning pin-
hole ϕD_3 reamer
Two pieces at
-opposite cornersFor dimensions of bolster
fastening holes, cushion
pinholes and T grooves,
refer to Attached Tables
11 to 13.

(Press front face)

Attached Table 2. (Continued)

Unit: mm

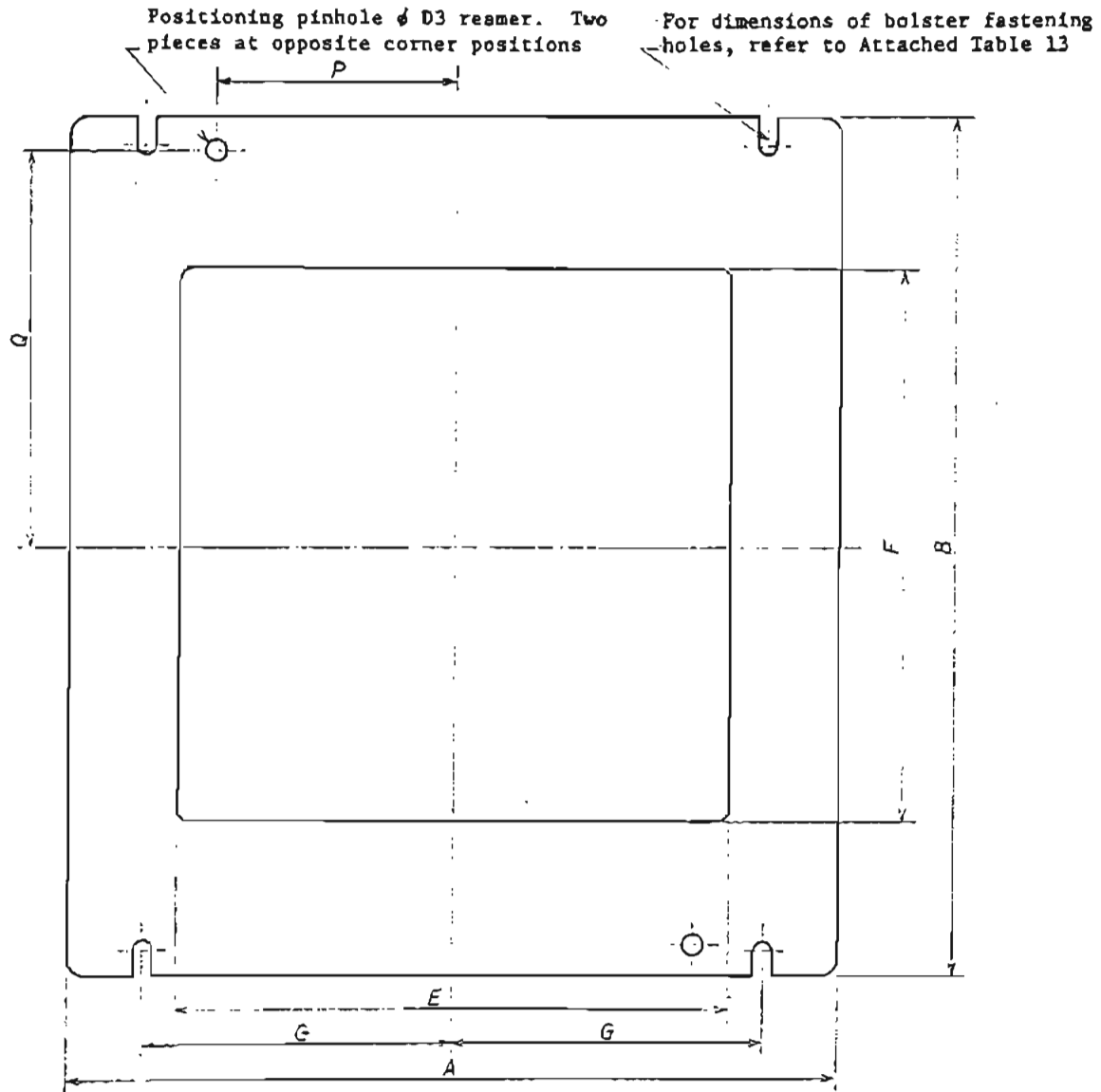
Range of capacity 10 ³ kgf{[MN]}	Range of slide mass	Right-and-left direction										Front-and-rear direction										No. of positions D ₁								
		A		G		P		T		T' ~ T'		W'		W' ~ W'		B		Q		U			U ₁		S		S ₁ ~ S ₄		Toler- ance	Design pinhole No. number
		Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance		Ref. dimen- sion	Toler- ance	Ref. dimen- sion	Toler- ance				
50 {0.49} to 75 {0.74}	90	550	±4	225	75											3	5	600	±4	250								3	5	
100 {0.98} to 125 {1.23}	100 to 110	600	±4	225	75											3	5	750	±4	325								3	5	
150 {1.47}	130	700	±4	275	200											3	7	750		325								5	7	
200 {1.96} to 250 {2.45}	130 to 140	750		225												5	4	900		350									4	4
300 {2.94} to 400 {3.92}	150 to 170	900		375	225											5	4	1100		490									4	4
500 {4.90} to 600 {5.88}	180 to 190	1100			±0.8	±0.4	150	±0.5												±0.4									4	4
800 {7.84} to 1000 {9.81}	220 to 230	1200	±5	375	225																								6	6
1250 {12.26}	240	1400		525	375																								6	6
1500 {14.71}	250	1500		525	375																								6	6
2000 {19.61}	280	1700	±7	675	525																								8	8

Note (2) The tolerances of A and B shall, respectively, be in accordance with coarse grade of JIS B 0407.

- Remarks
1. Cushion pinholes should preferably be at the middle position of interval of centre lines of two T grooves coming between them.
 2. In the slide face and the bolster to be attached opposite thereto, the positions in right-and-left direction of centre lines of corresponding T grooves should preferably be coincident as far as possible.

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Attached Table 3. Shape and Dimensions of Bed Faces of
Straight-Side Single Action Single Crank Press and
One-Point Suspension Crankless Press



(Press front face)

Unit: mm

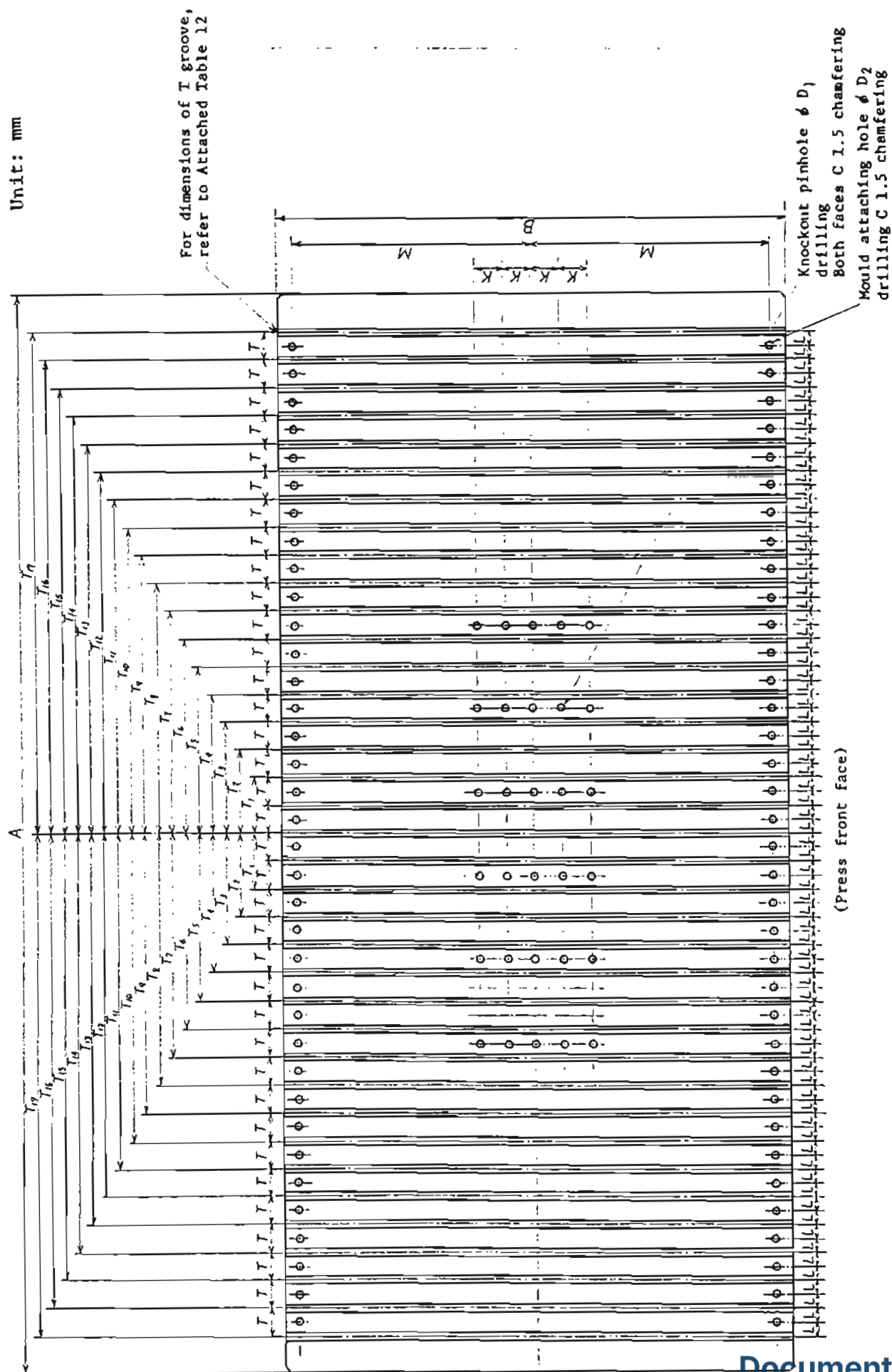
Range of capacity 10 ³ kgf(MN)	Right-and-left direction								Front-and-rear direction						D ₁
	A		E	G		P		B		F	Q				
	Ref. dimension	Tolerance (°)	(Ref.)	Ref. dimension	Tolerance	Ref. dimension	Tolerance	Ref. dimension	Tolerance (°)	(Ref.)	Ref. dimension	Tolerance			
50 {0.49} to 75 {0.74}	550	± 4	400	225	± 0.8	75	± 0.4	600	± 4	400	250	± 0.4	30		
100 {0.98} to 125 {1.23}	600		450	225		75		750		450	325				
150 {1.47}	700		550	275		200		750		550	325				
200 {1.96} to 250 {2.45}	750	± 5	550	225	± 0.8	225	± 0.4	900	± 5	550	350	± 0.4	30		
300 {2.94} to 400 {3.92}	900		610	375		225		1100		610	490				
500 {4.90} to 600 {5.88}	1100		690	375		225		1200		690	540				
800 {7.84} to 1000 {9.81}	1200	± 7	840	525	± 0.8	225	± 0.4	1400	± 7	840	640	± 0.4	30		
1250 {12.26}	1400		1000	525		375		1500		1000	690				
1500 {14.71}	1500		1100	525		375		1700		1100	790				
2000 {19.61}	1700	± 7	1200	675	± 0.8	525	± 0.4	1850	± 7	1200	870	± 0.4	30		

Note (2) The tolerances of A and B shall, respectively, be in accordance with coarse grade of JIS B 0407.

Documents

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Attached Table 4. Shapes and Dimensions of Slide Faces of Straight-Side Single Action Double Crank Press, Two-Point Suspension Crankless Press and Four-Point Suspension Crankless Press



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Attached Table 4 (Continued)

Unit: mm

Range of capacity 10 ³ kgf(MN)	A × B	Right-and-left direction										Front-and-rear direction						D ₁	D ₂
		A		L		T		T ₁ to T ₁₇		Number of grooves	Hole attaching hole number	B		K		M			
		Ref. dimension	(?) Tolerance	Ref. dimension	Tolerance	Ref. dimension	Tolerance	Ref. dimension	Tolerance			Ref. dimension	(?) Tolerance	Ref. dimension	Tolerance	Ref. dimension	Tolerance		
50 {0.49 to 125 {1.23}	1200	750	± 5	1200						7	6	750	± 4			300			
75 {0.74 to 200 {1.96}		900										900				375			
100 {0.98 to 250 {2.45}		1100										1100	± 5			475			
150 {1.47 to 250 {2.45}		1200										1200				525			
50 {0.49 to 125 {1.23}	1500	750	± 5	1500				± 0.7		9	8	750	± 4			300			
75 {0.74 to 200 {1.96}		900										900				375			
100 {0.98 to 250 {2.45}		1100										1100				475			
150 {1.47 to 300 {2.94}		1200										1200	± 5			525			
200 {1.96 to 300 {2.94}	1850	1350		1850						11	10	1350				600			
250 {2.45 to 300 {2.94}		1500										1500				675			
75 {0.74 to 200 {1.96}		900										900				375			
100 {0.98 to 250 {2.45}		1100										1100				475			
150 {1.47 to 300 {2.94}	2150	1200		2150	75	± 0.4	150	± 0.5		13	12	1200	± 5	150	± 0.5	525	± 0.8	28	
200 {1.96 to 500 {4.90}		1350										1350				600			
250 {2.45 to 500 {4.90}		1500										1500				675			
75 {0.74 to 200 {1.96}		900										900				375			
100 {0.98 to 250 {2.45}	2450	1100		2450						15	14	1100				475			
150 {1.47 to 300 {2.94}		1200										1200	± 5			525			
200 {1.96 to 500 {4.90}		1350										1350	± 5			600			
250 {2.45 to 800 {7.84}		1500										1500				675			
250 {2.45 to 800 {7.84}	2750	1700		2750						17	16	1700				775			
400 {3.92 to 800 {7.84}		1850										1850				850			
150 {1.47 to 300 {2.94}		1200										1200				525			
200 {1.96 to 500 {4.90}		1350										1350	± 5			600			
250 {2.45 to 800 {7.84}	3050	1500		3050						19	18	1500	± 5			675			
250 {2.45 to 800 {7.84}		1700										1700				775			
400 {3.92 to 1250 {12.26}		1850										1850	± 7			850			
500 {4.90 to 1250 {12.26}		2150										2150				1000			
250 {2.45 to 800 {7.84}	3050	1500		3050						19	18	1500	± 5			675			
250 {2.45 to 800 {7.84}		1700										1700				775			
400 {3.92 to 1250 {12.26}		1850										1850	± 7			850			
500 {4.90 to 1250 {12.26}		2150										2150				1000			