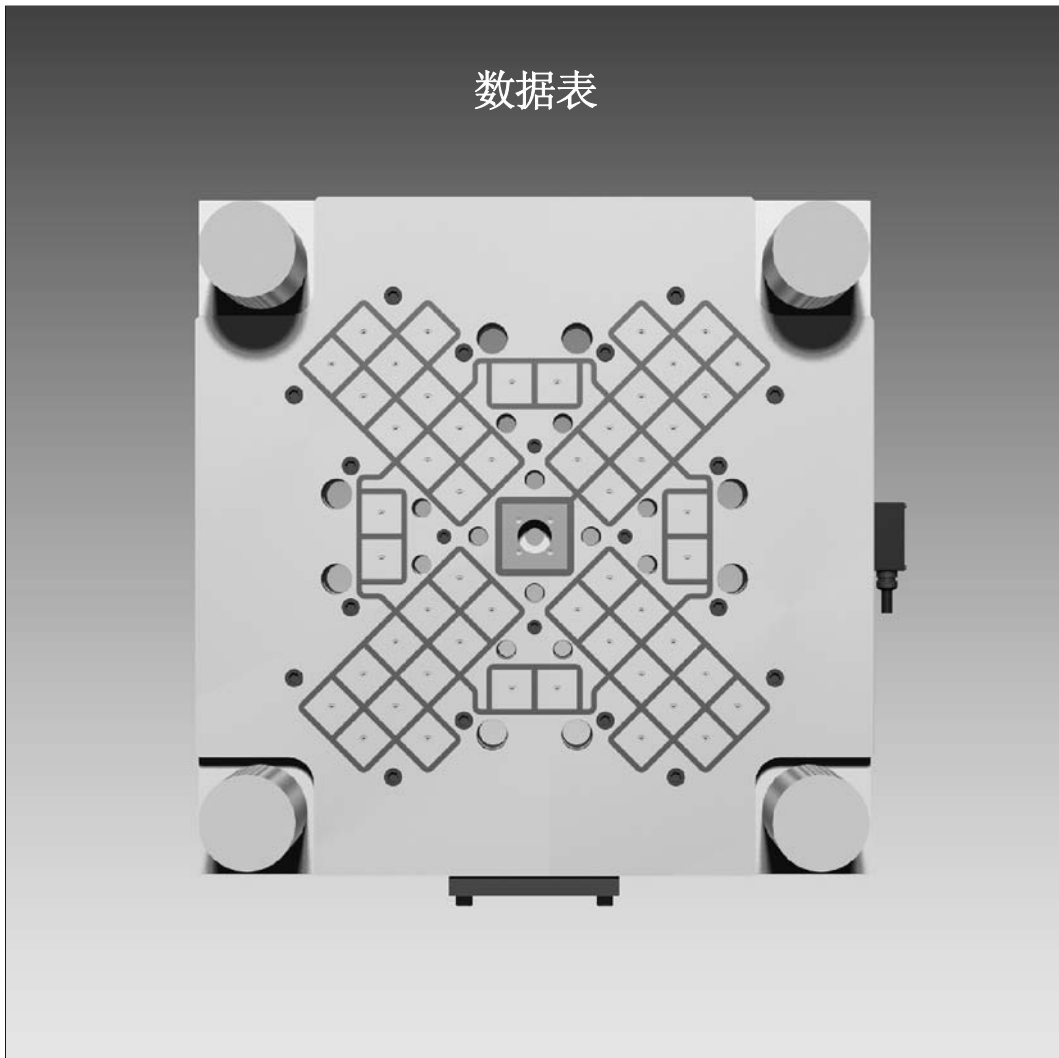


# Pascal mag clamp

帕斯卡电永磁夹紧器 MGA 型

数据表



**Pascal**  
corporation

[www.pascaleng.co.jp](http://www.pascaleng.co.jp)

# 夹紧力的计算

## 标准夹紧力的计算

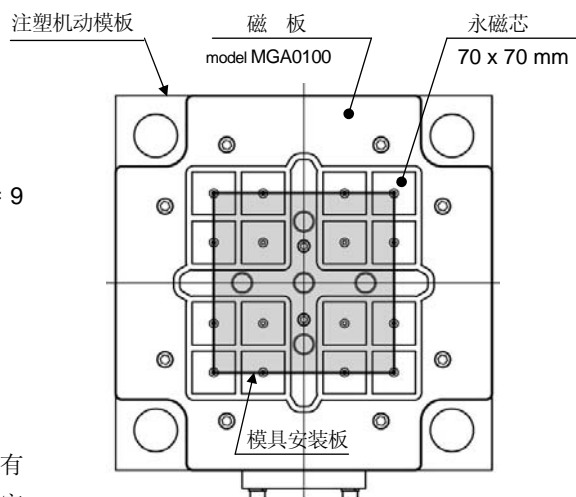
电永磁夹紧器的夹紧能力(磁石的吸着力)根据模具安装板与磁板接触面积(永磁芯的个数)而变化。模具较小、模具安装板没有与全部永磁芯接触时,请参考下面的计算例计算标准夹紧力。

计算例:磁板 model MGA0100 (动模板侧)

1. 与模具安装板完全接触的永磁芯个数 = 4 个
2. 与模具安装板接触一半面积的永磁芯个数 = 8 个
3. 与模具安装板接触 1/4 面积的永磁芯个数 = 4 个
4. 与模具安装板接触的永磁芯总个数 = 4 个 + 8 个 × 1/2 + 4 个 × 1/4 = 9 个
5. 每块永磁芯的夹紧力 = 7.35 kN/个 (参照下页)
6. 标准夹紧力 = 7.35 kN/个 × 9 个 = 66.15 kN

注 1: 模具安装板的背面有洞或缺口时,请减去与其接触的永磁芯个数。

注 2: 根据模具安装板侧的条件,可能出现实际夹紧力比标准夹紧力低的情况。有关模具安装板条件的概要,请参照下面“夹紧力低下”的内容。其详细内容请参照说明书。



## 有关夹紧力低下的情况

根据模具安装板侧的条件,可能发生实际夹紧力比标准夹紧力低下的情况。使用电永磁夹紧器时,请务必按照下记条件检验夹紧力低下的原因,并将电永磁夹紧器的夹紧力设定在大于开模力的状态下使用。

$$(\text{实际夹紧力}) = (\text{标准夹紧力} - \text{夹紧力低下数值}) \geq (\text{注塑机开模力})$$

夹紧力不足时,请使用大的模具安装板,以增加模具安装板与磁板的接触面积。

### 模具安装板的材质

材质	夹紧力
SS400 S55C S45C-H	100% (标准)
S45C	95%
SK3 SUJ	85%
SUS430 FC250 FCD600	80%
SKH51 SKD11	70%

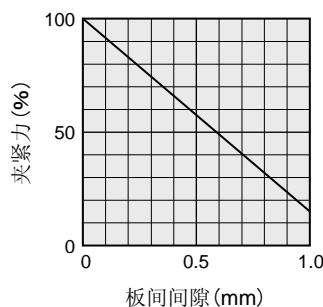
根据模具安装板材质不同,夹紧力按上表降低。

### 模具安装板的光洁度

光洁度	夹紧力
▽▽▽ (Rz1.6~3.8)	100% (标准)
▽▽ (Rz7.5~15.5)	约 100%
▽ (Rz85~150)	约 90%

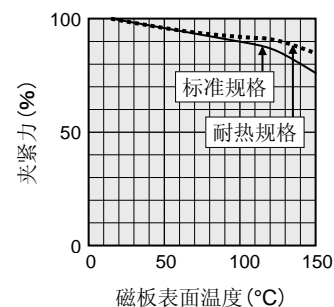
根据模具安装板与磁板接触面的光洁度,夹紧力按上表降低。

### 模具安装板与磁板间间隙



由于模具安装板的弯曲·变形而引起模板与磁板之间出现间隙时,夹紧力按上表降低。

### 模具安装板温度



夹紧力随温度的升高而降低。请在模具安装板温度低于 80°C 的状态下使用。(详细情况请参照使用说明书。)

## 型号与规格

磁板型号	注塑机合模力	夹紧力※1		磁板厚度	磁板质量		电源容量※2	通电时间※3
		动模板侧	定模板侧		动模板侧	定模板侧		
	kN	kN	kN	mm	kg	kg	kVA	sec.
<b>MGA0020S</b>	200	22	22	34	32	32	15	0.5
<b>MGA0030S</b>	300 ~ 350	34	29		39	38	15	0.5
<b>MGA0050S</b>	400 ~ 550	41	39		50	50	30	0.5
<b>MGA0055S</b>	400 ~ 550	41	39		49	48	30	0.5
<b>MGA0060S</b>	600	41	39		45	44	30	0.5
<b>MGA0080S</b>	750 ~ 800	55	69		61	60	40	0.5
<b>MGA0100S</b>	1000 ~ 1100	78	78		83	82	40	0.5
<b>MGA0130S</b>	1200 ~ 1300	110	103		96	95	40	0.5
<b>MGA0150S</b>	1400 ~ 1500	123	118		123	120	40	0.5
<b>MGA0050</b>	500 ~ 600	59	59	50	72	69	15	0.5
<b>MGA0080</b>	750 ~ 850	88	88		91	88	15	0.5
<b>MGA0100</b>	1000 ~ 1200	118	88		122	119	30	0.5
<b>MGA0130</b>	1300	118	118		140	138	30	0.5
<b>MGA0140</b>	1300	133	118		138	138	30	0.5
<b>MGA0150</b>	1400 ~ 1600	147	147		177	179	30	0.5
<b>MGA0160</b>	1400 ~ 1600	192	147		189	190	30	0.5
<b>MGA0180</b>	1700 ~ 1800	176	176		201	197	30	0.5
<b>MGA0190</b>	1700 ~ 1800	192	176		201	201	30	0.5
<b>MGA0230</b>	2200 ~ 2300	221	206		236	238	40	0.5
<b>MGA0250</b>	2500 ~ 2600	251	235		269	270	40	0.5
<b>MGA0280</b>	2800 ~ 3000	251	265		292	294	40	0.5
<b>MGA0350</b>	3500 ~ 3600	310	314		350	361	40	1.5
<b>MGA0450</b>	4500	398	408		473	478	40	1.5
<b>MGA0550</b>	5500	427	439		535	540	40	1.5
<b>MGA0650</b>	6500	545	533	654	669	45	1.5	
<b>MGA0850</b>	8500	633	690	823	839	45	2.0	
<b>MGA1050</b>	10000 ~ 10500	809	815	1036	1049	45	2.0	
<b>MGA1300</b>	13000	927	1004	1155	1177	45	3.0	
<b>MGA1600</b>	14000 ~ 16000	1176	1160	1434	1428	80	2.0	
<b>MGA2000</b>	18000 ~ 20000	1264	1317	1964	1958	80	2.0	
<b>MGA2500</b>	22000 ~ 25000	1558	1505	1964	1958	100	3.0	
<b>MGA3000</b>	28000 ~ 30000	1793	1788	2262	2260	100	4.5	

※1：模具安装板与所有永磁芯接触时整块磁板的总夹紧力。

※2：1次电源为 AC200V/AC220V 时的电源容量。电压为 AC380V、AC440V 或 AC480V 时，请参照规格确认书。

※3：动模板侧、定模板侧磁板分别通电时每块磁板所需的通电时间（夹紧 / 放松时间）。不能两块磁板同时通电。

1次电源电压为 AC380V、AC440V 或 AC480V 时，通电时间不同，请参照规格确认书。

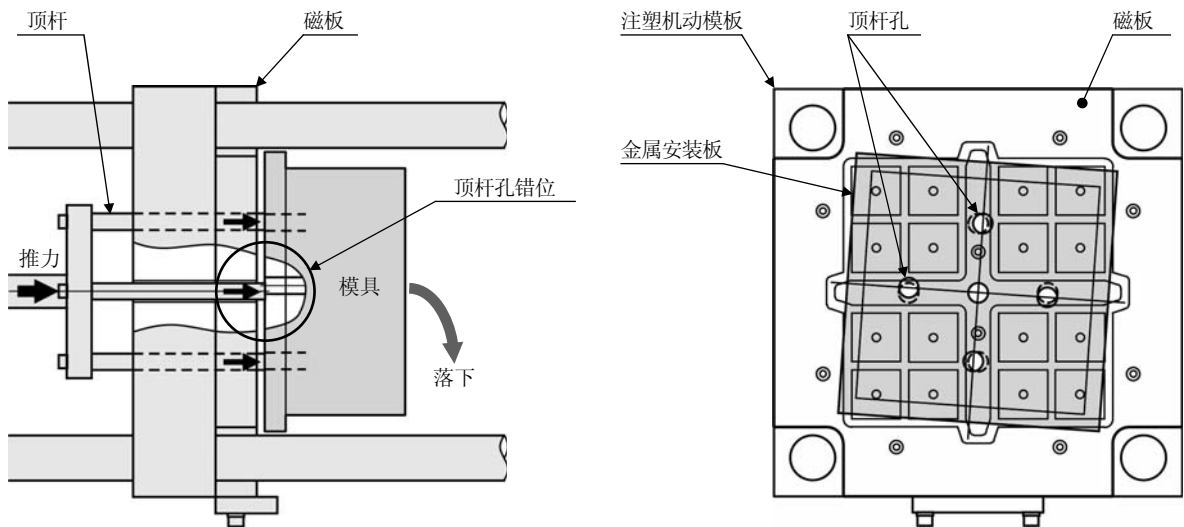
每块永磁芯的夹紧力

永磁芯尺寸	50 x 50 mm	32 x 100 mm	70 x 70 mm	75 x 75 mm	100 x 100 mm	115 x 115 mm
夹紧力(概略值)	2.45 kN	3.43 kN	7.35 kN	7.84 kN	7.84 kN	15.68 kN

各磁板所有的永磁芯个数，请参照磁板图纸。

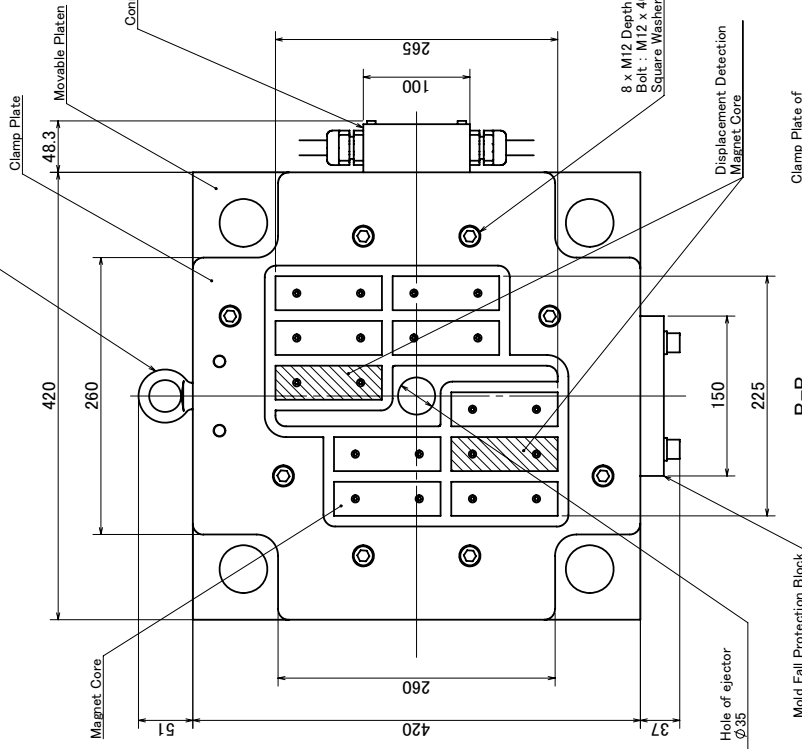
## ⚠ 使用注意事项

- 电永磁夹紧器会产生强磁力,装有心脏起搏器者请不要接近夹紧器。磁力线分布范围为磁板前方(模具侧)20mm左右,请不要让手机、磁卡、CD等易受磁力影响的物品接近夹紧器,以免损坏物品。
- 请一定在吊车吊紧模具的状态下进行模具更换。
- 永磁夹紧器通磁时(夹紧状态下)请不要将铁制品等磁导体靠近磁板表面。磁板具有积强的磁力,磁体被磁板吸着时,手指可能被夹,会造成人身伤害。
- 电永磁夹紧器的夹紧力根据模具安装板与磁板的接触面积而变化。而且根据模具安装板条件的不同有可能出现夹紧力降低的情况。请一定确认实际使用模具对应的夹紧力后再行使用。(请参照 P1 页的“夹紧力的计算”)
- 请不要使用模具安装板弯曲变形的模具。磁板与模具安装板之间若有缝隙会造成夹紧力低下。
- 请保持磁板与模具安装板的吸着面在清洁状态下使用电永磁夹紧器。吸着面吸附的水、油等虽不会直接造成夹紧力低下,但若有灰尘或异物附着时,会使磁板与模具安装板之间产生缝隙。
- 电永磁夹紧器的耐热温度为 80℃,所以请不要使用安装面温度较高的模具。万一出现高温情况,请立即使其返回常温状态。但是,如果温度达到 120℃以上时,即使返回常温夹紧力也会降低。
- 请使用厚度为 25 mm 以上的模具安装板。磁力线范围为磁板前方 20mm 左右,模具安装板薄于 25 mm 时,请务必注意以下情况:
  - (1) 有可能造成夹紧力低下。
  - (2) 易受磁气影响的传感器有可能误操作。
  - (3) 可动板模具错位检知核心在 25mm 以内时,模具错位检知传感器有误操作的可能。
- 对需要用顶杆将成形部件顶出的模具,请务必确认其顶杆长度是否有问题及顶杆孔与模具中心是否错位。否则模具被顶杆撞击后有掉落的可能。特别是电永磁夹紧器,如下图所示模具即使在倾斜状态下也能被夹紧,因此请务必确认水平方向的顶杆孔与模具侧杆孔是否吻合。可在吊车吊挂模具状态下让顶杆顶出进行确认。



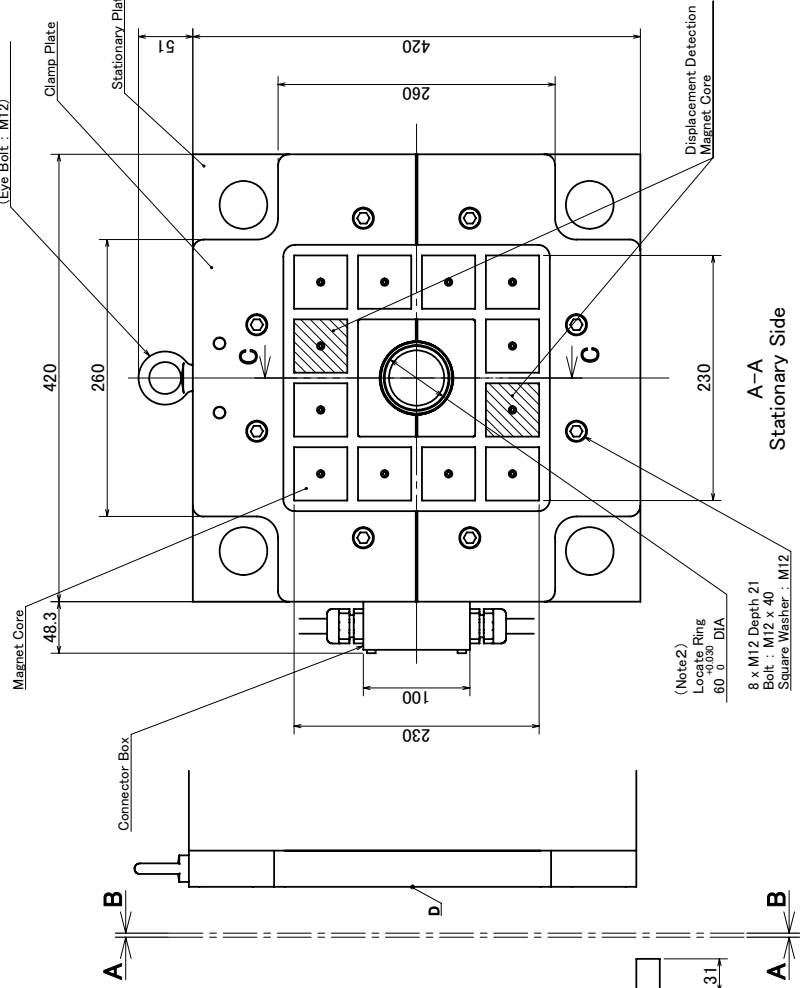


※Option  
Mold Fall Protection Hook  
(Eye Bolt : M12)



B-B  
Movable Side

※Option  
Mold Fall Protection Hook  
(Eye Bolt : M12)



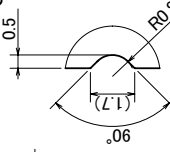
A-A  
Stationary Side

### CLASS DEFINITION

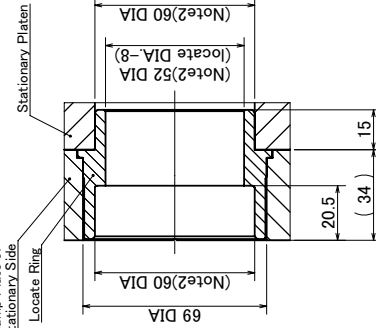
MGA	0030	①	②	③	④	⑤	⑥	⑦	S	
①	Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)							S: 34	
②	Diameter of Locate ring (mm)	1: 40	2: 60	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)						
③	Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480					
④	Language on operation panel	J: Japanese	E: English							
⑤	Working temperature range (°C)	NIL: 0~80							H: 0~150	U: 0~180
⑥	Rust proof arrangement	NIL: not included							N: included	
⑦	Special specification	NIL: not included							Drawing number: included	

[NOTE]

- Minimum daylight should be 105 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 60 mm. Ring size shown in drawing is diameter 60 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.



D (5 : 1)  
※Option  
Center Edge



C-C (1 : 2)  
Details of locating

### Specifications

Type	Movable Side	Stationary Side
Number of Magnet Core	50 mm square 32mm x 100mm	12
Maximum Clamping Force	34kN	29kN
Mass of Plate	39kg	38kg
Accessories		
Mounting Bolt	M12x40	8
Applied Mold Clamping Force		300~350 kN

SCALE

1:5

REVISION HISTORY

STANDARD

DATE

2006/12/15

DESIGNED BY

04118

MODEL

MGA0030S

NAME

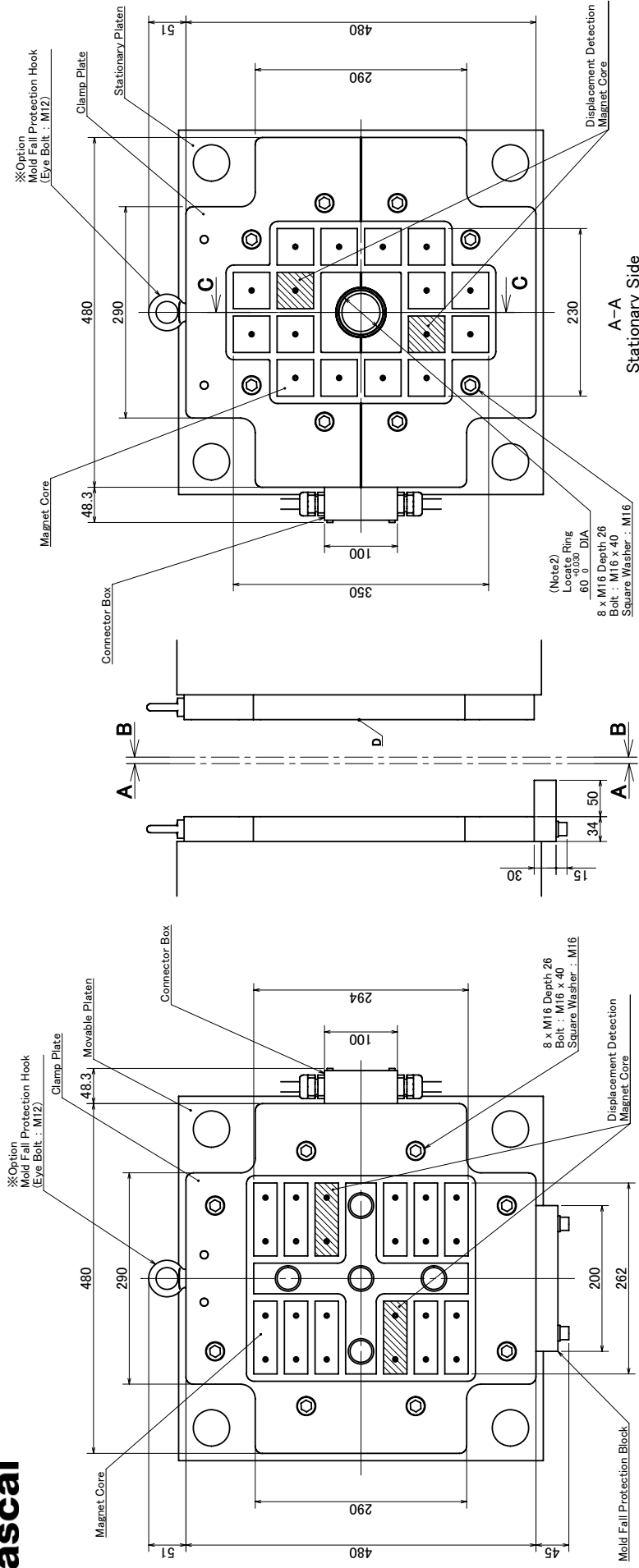
Mag Clamp Layout

DWG.NO.

3MGAB43100

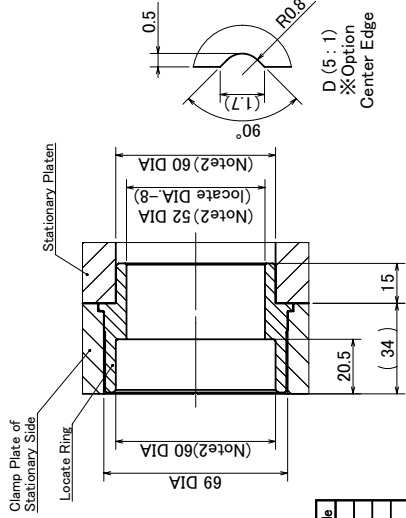
FILE NO.

MGAB4310.sldrw



B-B Movable Side

A-A Stationary Side



C-C (1 : 2)  
Details of locating

### CLASS DEFINITION

MGA	0050	①	②	③	④	⑤	⑥	⑦	
①	Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)		S: 34				
②	Diameter of Locate ring (mm)	1: 40	2: 60	9: Special (if the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)					
③	Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480				
④	Language on operation panel	J: Japanese	E: English						
⑤	Working temperature range (°C)	NIL: 0~80	H: 0~150	U: 0~180					
⑥	Rust proof arrangement	NIL: not included	N: included						
⑦	Special specification	NIL: not included	Drawing number: included						

### [NOTE]

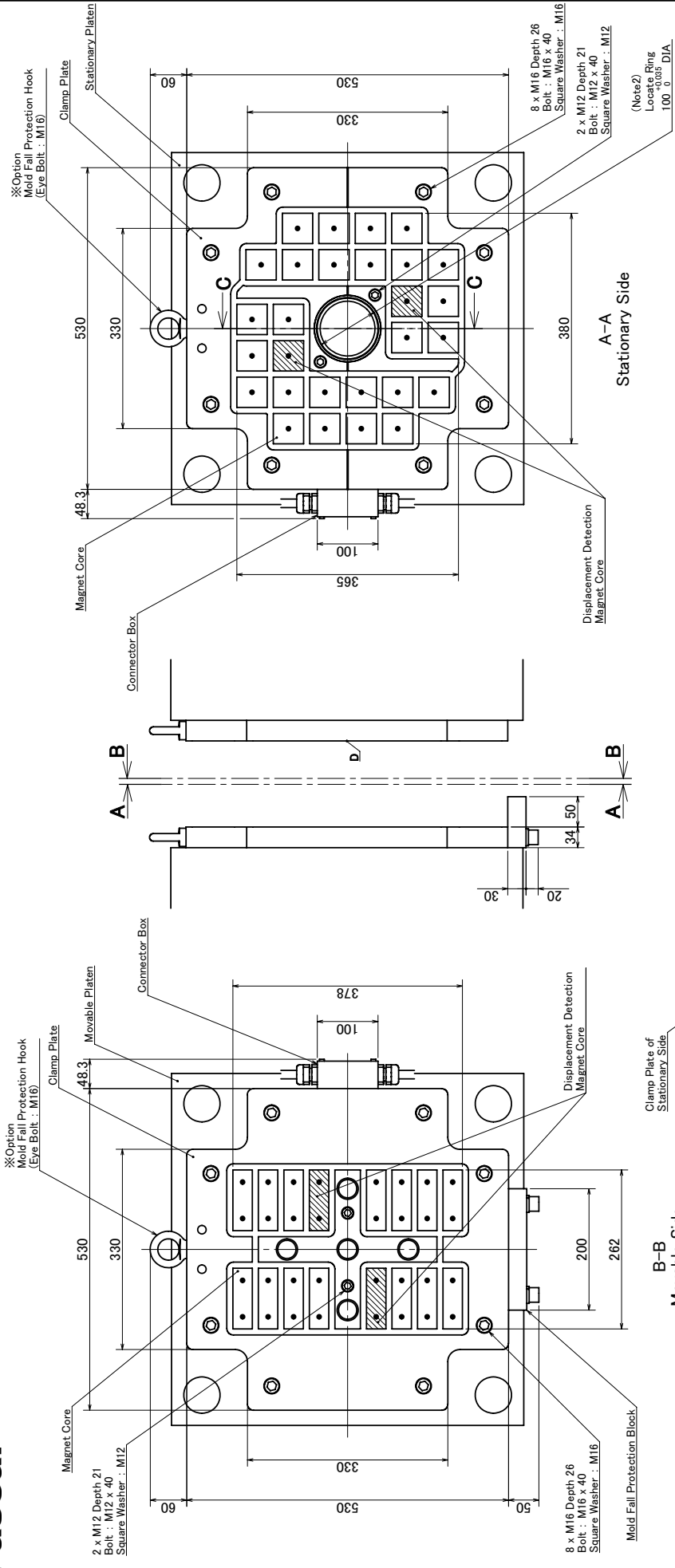
- Minimum daylight should be 125 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 60 mm. Ring size shown in drawing is diameter 60 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- The hole position of ejector is specified on the confirmation sheet at the time of order.
- The diameter of ejector is according to JIS B 6701. The diameter is 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

Specifications Type	Movable Side	Stationary Side
Number of Magnet Core	50 mm square 32mm x 100mm	16
Maximum Clamping Force	41kN	39kN
Mass of Plate	50kg	50kg
Accessories	M16x40	8
Applied Mold Clamping Force	400~550 kN	8









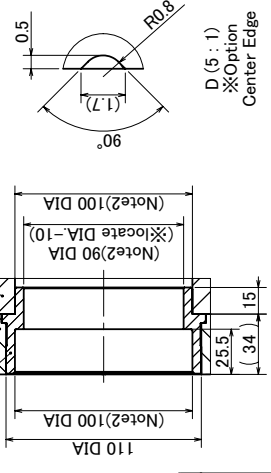
### CLASS DEFINITION

MGA	0080	①	-	②	③	④	⑤	⑥	⑦
①	Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)	S: 34					
②	Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	9: Special	(If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)			
③	Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480				
④	Language on operation panel	J: Japanese	E: English						
⑤	Working temperature range (°C)	NIL: 0~80							
⑥	Rust proof arrangement	NIL: not included							
⑦	Special specification	NIL: not included							

### [NOTE]

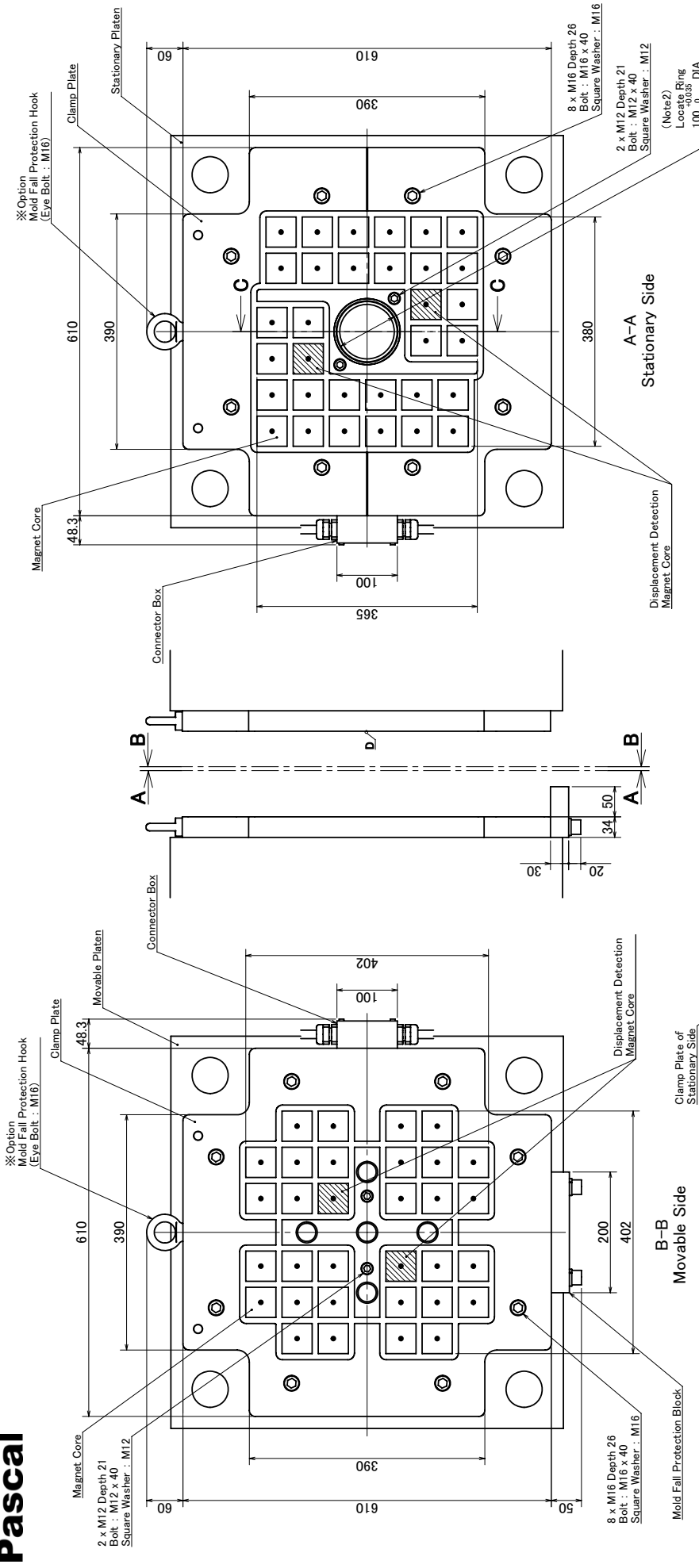
- Minimum daylight should be 125 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 100 mm. Ring size shown in drawing is diameter 100 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Dimension (marked ※) at diameters 60 and 40 in drawing (see locate detail) are calculated to be locate DIA-6mm.
- Option (if any) should be specified on the confirmation sheet at the time of order. The diameter is 35 mm.

### C-C (1:3) Details of locating



Specifications	Movable Side	Stationary Side
Type	50 mm square	28
Number of Magnet Core	16	—
Maximum Clamping Force	55kN	69kN
Mass of Plate	61kg	60kg
Accessories		
Mounting Bolt	M16x40	8
Applied Mold Clamping Force	M12x40	2
		750~800 kN

SCALE	1:7	REVISION HISTORY	STANDARD	DESIGNED BY	04118	MODEL	MGA0080S	NAME	Mag Clamp Layout	DWG.NO.	3MGAB43500	FILE.NO.	MGAB4350.sldrw
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### CLASS DEFINITION

MGA 0100 ① - ② ③ ④ ⑤ ⑥ ⑦	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34
① Plate thickness (mm)	NIL: 50 1: 40 2: 60 3: 100	
② Diameter of Locate ring (mm)	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480	
④ Language on operation panel	J: Japanese E: English	
⑤ Working temperature range (°C)	NIL: 0~80 U: 0~180	
⑥ Rust proof arrangement	NIL: not included N: included	
⑦ Special specification	NIL: not included Drawing number: included	

### [NOTE]

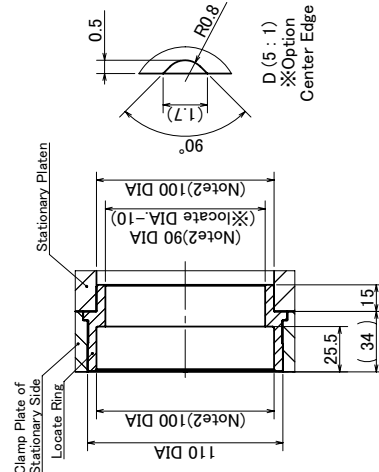
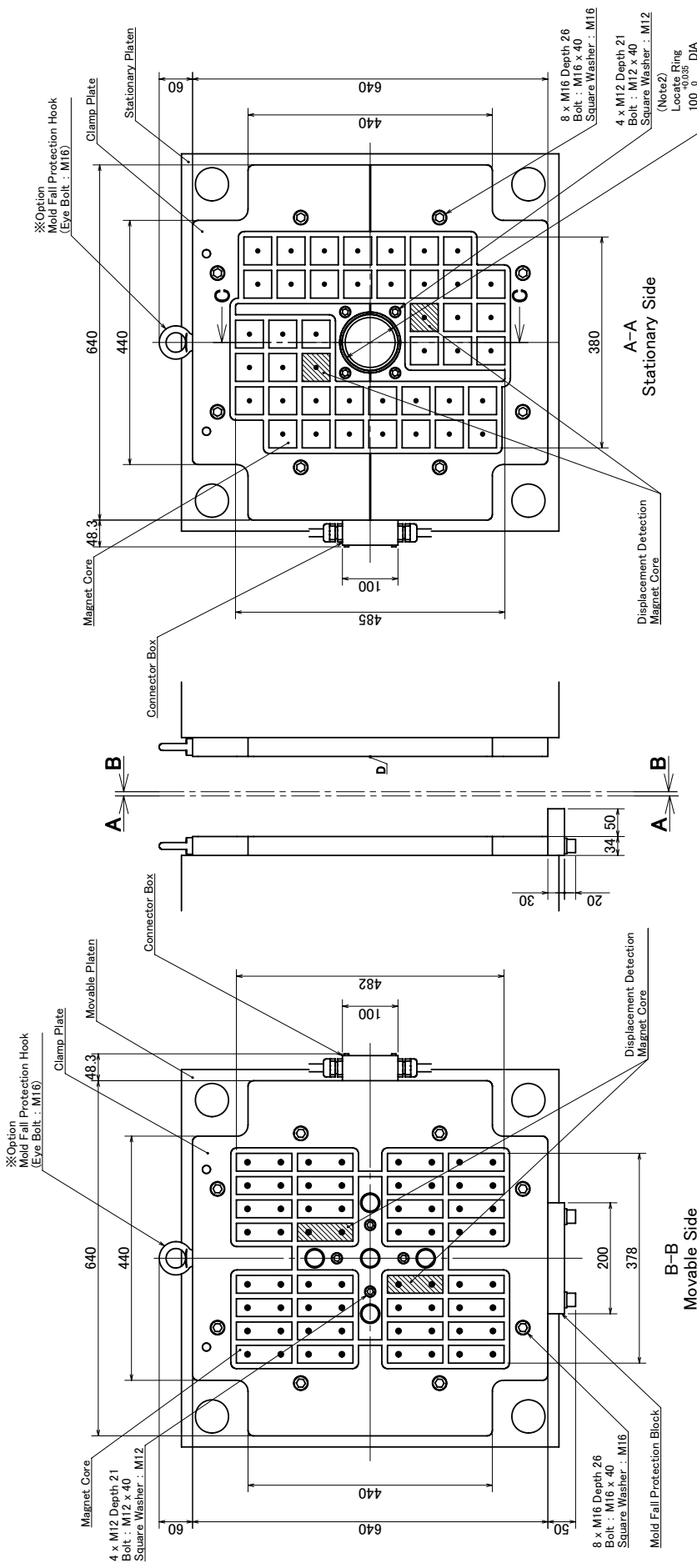
- Minimum daylight should be 125 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 100 mm. Ring size shown in drawing is diameter 100 mm. In other case of ring size is used, it should be changed to the dimension (Note2). Dimension (marked ※) at diameters 60 and 40 in drawing (see locate detail) are calculated to be locate DIA-8mm.
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter is 36 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



Specifications	Movable Side	Stationary Side
Type	50 mm square	32
Number of Magnet Core	32mm x 100mm	32
Maximum Clamping Force	78kN	78kN
Mass of Plate	83kg	82kg
Accessories		
Mounting Bolt	M16x40	8
Applied Mold Clamping Force	M12x40	2
		1000~1100 kN

C-C (1 : 3)  
Details of locating

SCALE	1:7	DESIGNED BY	04118	MODEL	MGA0100S	NAME	Mag Clamp Layout	FILE NO.	MGAB4360.sldrw
REVISION HISTORY		DATE	2006/12/15			DWG. NO.	3MGAB43600		
STANDARD									



### CLASS DEFINITION

①	②	③	④	⑤	⑥	⑦
① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm) S: 34					
② Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)		
③ Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480	J: Japanese E: English	
④ Language on operation panel	NIL: 0~80 H: 0~150 U: 0~180					
⑤ Working temperature range (°C)	NIL: not included N: included					
⑥ Rust proof arrangement	NIL: not included Drawing number: included					
⑦ Special specification	NIL: not included					

### [NOTE]

- Minimum daylight should be 125 mm.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 100 mm. Ring size shown in drawing is diameter 100 mm. In other case of ring size is used, it should be changed to the dimension (Note2). Dimension (marked ※) at diameters 60 and 40 in drawing (see locate detail) are calculated to be locate DIA-6mm.
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 6701. The diameter is 35 mm.
- If the diameter differs, it should be specified on the confirmation sheet at the time of order.

Specifications	Movable Side	Stationary Side
Type	50 mm square	42
Number of Magnet Core	32	—
Maximum Clamping Force	110kN	103kN
Mass of Plate	96kg	95kg
Accessories		
Mounting Bolt	M16x40	8
M12x40	4	4
Applied Mold Clamping Force	1200~1300 kN	

### Details of locating

C-C (1:3)

### REVISION HISTORY

STANDARD

SCALE 1:8

DATE 2006/12/15

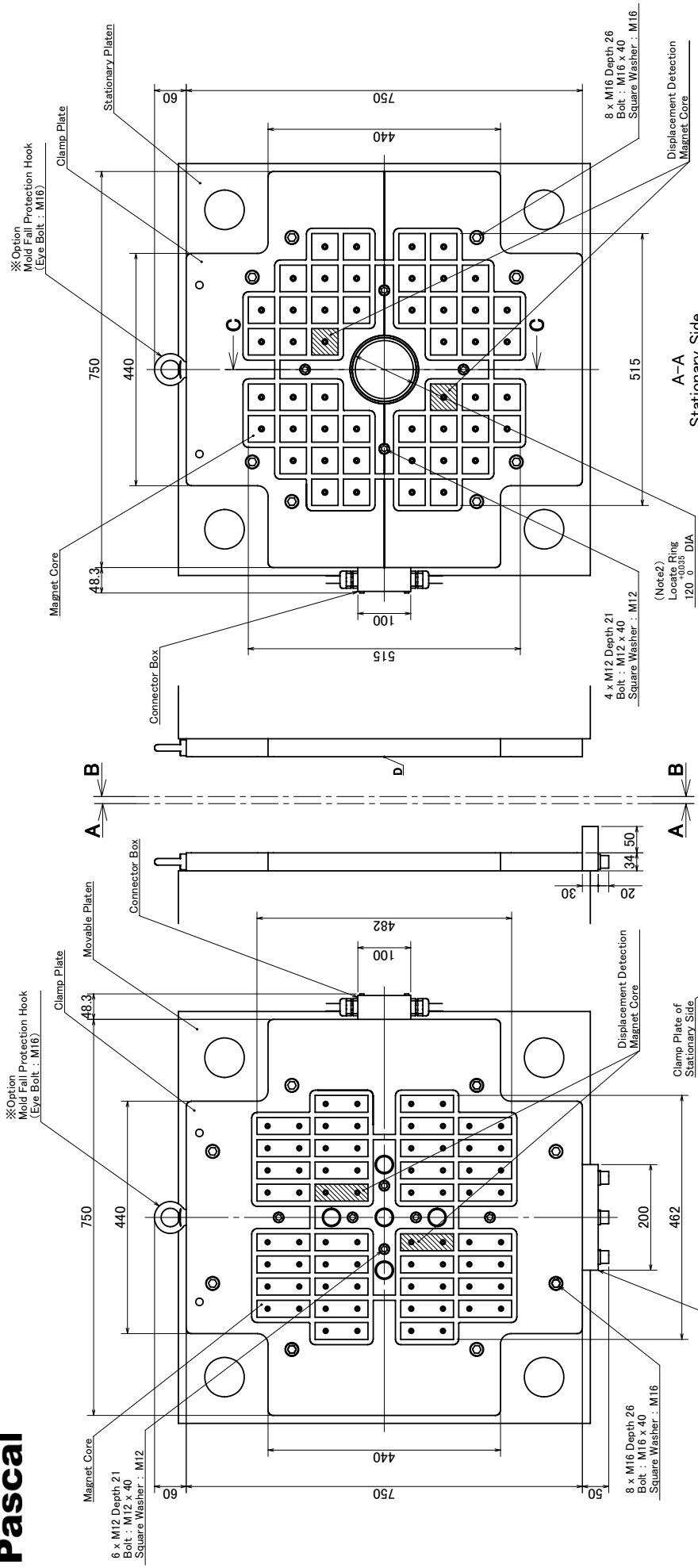
DESIGNED BY 04118

MODEL MGA0130S

NAME Mag Clamp Layout

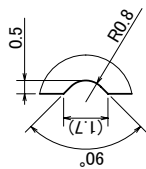
DWG.NO. 3MGAB43700

FILE.NO. MGB4370.sldrw



### CLASS DEFINITION

①	②	③	④	⑤	⑥	⑦
Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34				
Diameter of locate ring (mm)	1: 40 2: 60 3: 100 4: 120					
Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480					
Language on operation panel	J: Japanese E: English					
Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180					
Rust proof arrangement	NIL: not included N: included					
Special specification	NIL: not included Drawing number: included					

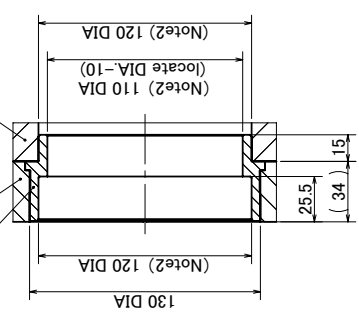


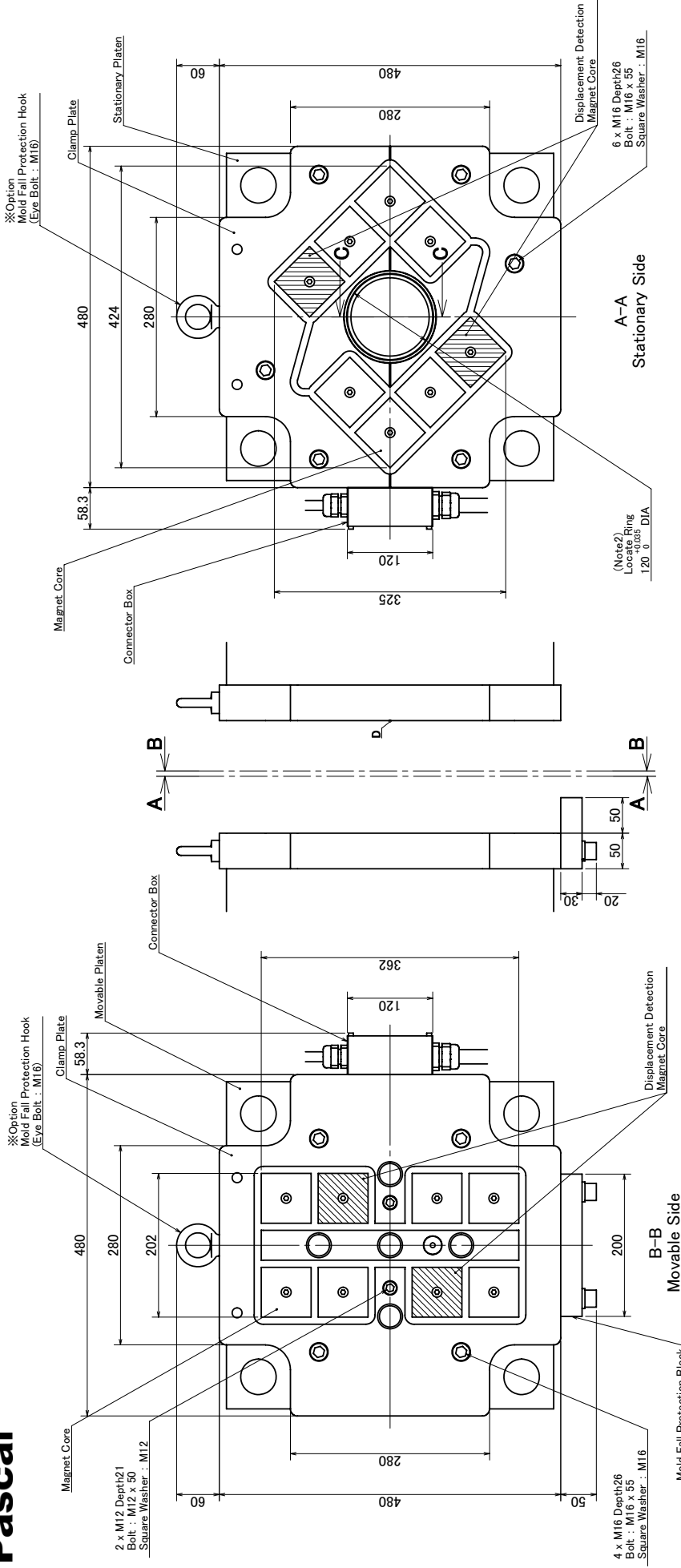
### Specifications

Type	Movable Side	Stationary Side
Number of Magnet Core	36	48
Maximum Clamping Force	123kN	118kN
Mass of Plate	123kg	120kg
Accessories		
Mounting Bolt	M16x40	8
Applied Mold Clamping Force	M12x40	8
		1400~1500 kN

- (NOTE)
- Minimum daylight should be 125 mm.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other cases of ring size is used, it should be changed to the dimension (Note2). Dimension marked with ※ at diameters 60 and 40 in drawing (see locate detail) are calculated to be locate DIA-8mm.
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 6701. The diameter is 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

### Details of locating



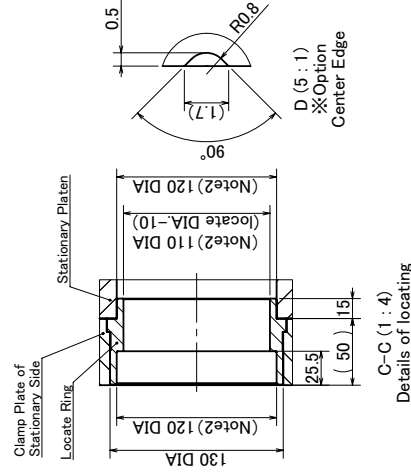


### CLASS DEFINITION

MGA	0050	①	②	③	④	⑤	⑥	⑦	
①	Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)							S: 34
②	Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 9: Special (if the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)							
③	Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480							
④	Language on operation panel	J: Japanese E: English							
⑤	Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180							
⑥	Rust proof arrangement	NIL: not included N: included							
⑦	Special specification	NIL: not included Drawing number: included							

### [NOTE]

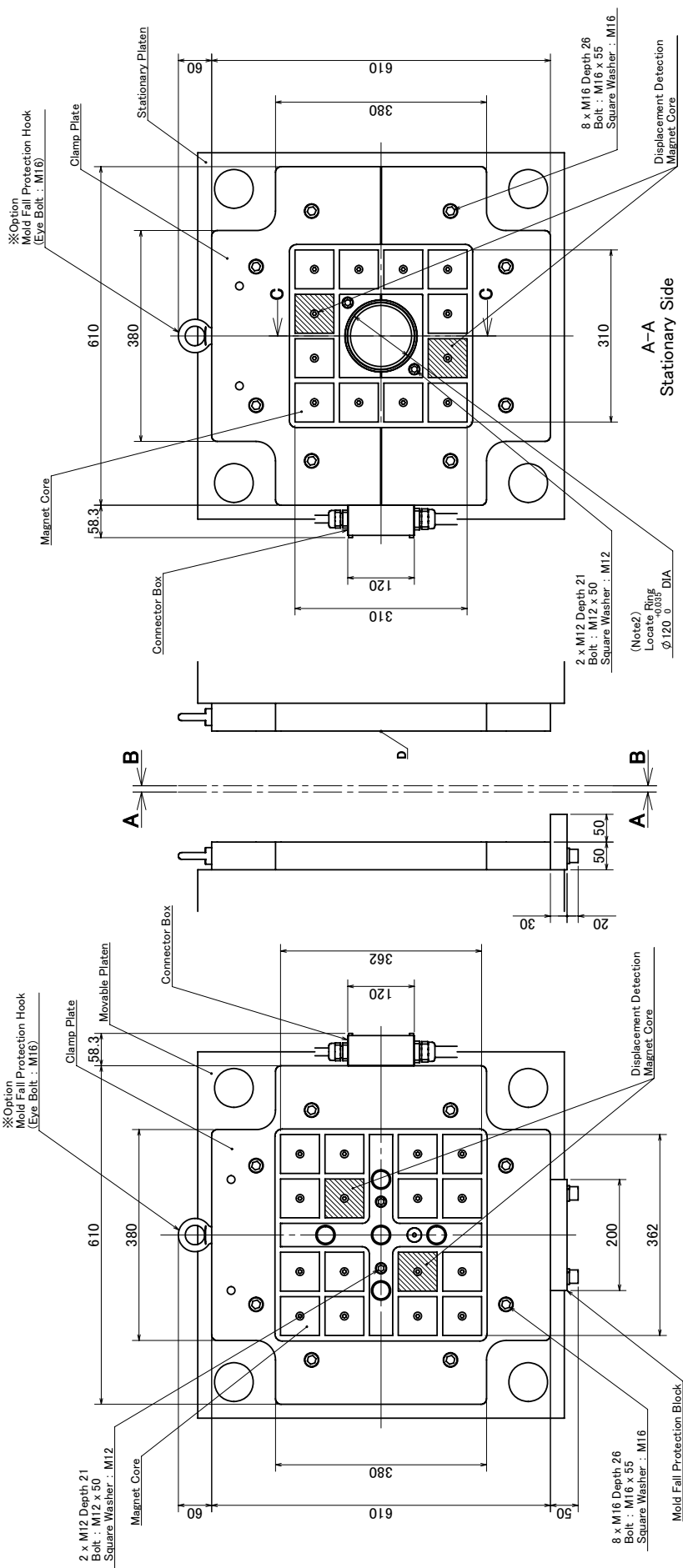
- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter is 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



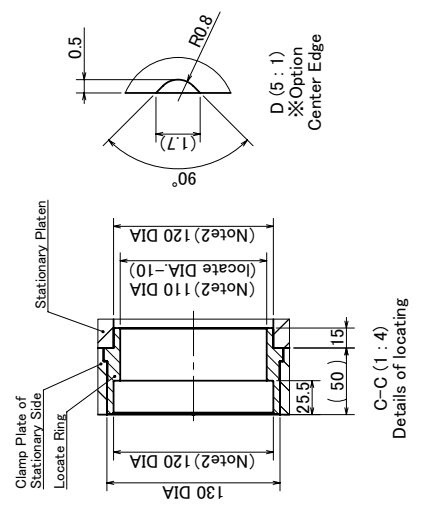
C-C (1:4)  
Details of locating

Specifications Type	Movable Side		Stationary Side	
	Number of Magnet Core	75 mm square 8	70 mm square 8	115 mm square 59kN
Maximum Clamping Force	72kg	72kg	59kN	69kg
Mass of Plate				
Accessories				
Mounting Bolt	M16x55	4	M12x50	6
Applied Mold Clamping Force	500~800kN			





Specifications	Stationary Side	
	Movable Side	Stationary Side
Type	75 mm square	—
Number of Magnet Core	16	12
Maximum Clamping Force	118kN	88kN
Accessories	122kg	119kg
Mounting Bolt	M16x55	8
Applied Mold Clamping Force	M12x50	2
		1000~1200kN



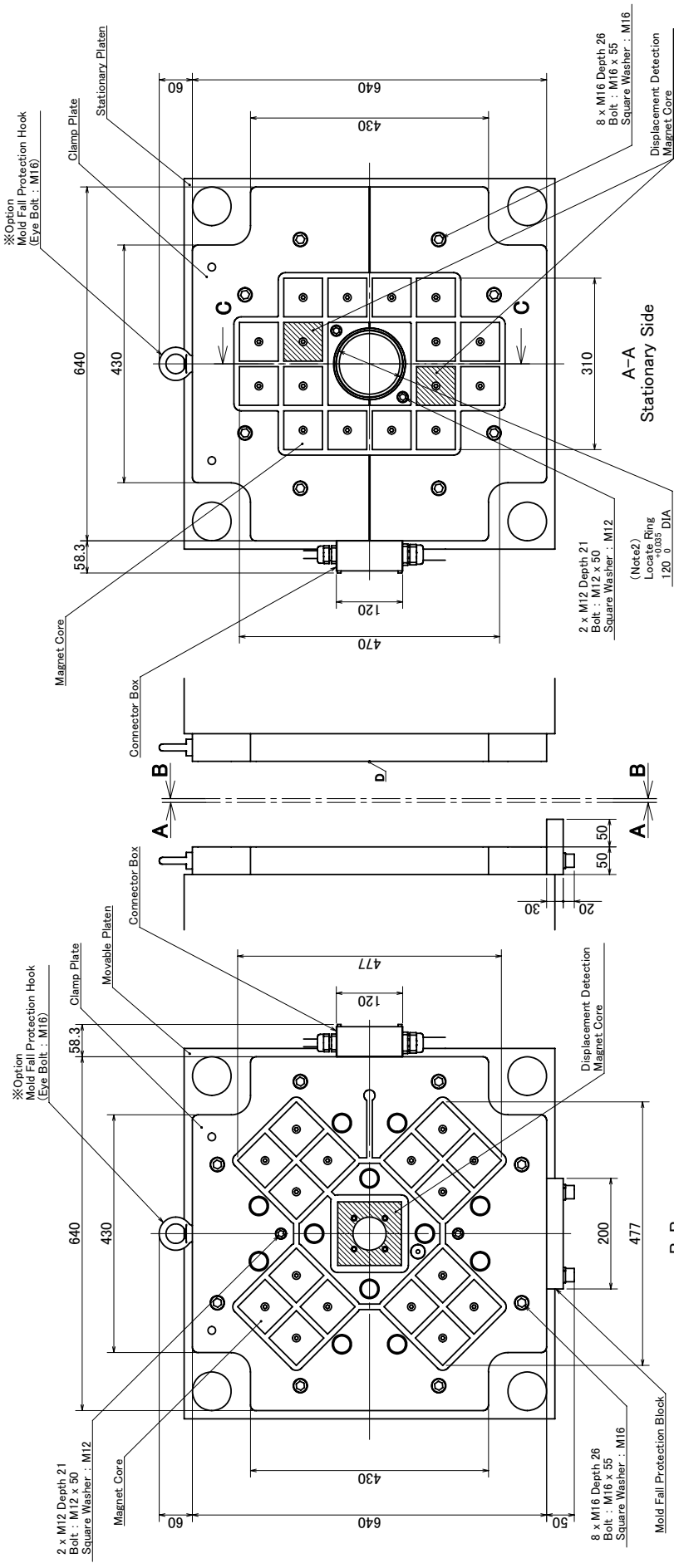
### CLASS DEFINITION

MGA 0100	①	②	③	④	⑤	⑥	⑦	
① Plate thickness (mm)	Nil: 50	(Exceed the size of MGA0450 becomes 52 mm)						S: 34
② Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)			
③ Primary power source (V)	2: 200/220	J: Japanese						E: English
④ Language on operation panel	Nil: 0~80	H: 0~150						U: 0~180
⑤ Working temperature range (°C)	Nil: not included	Nil: not included						
⑥ Rust proof arrangement	Nil: not included	Nil: not included						
⑦ Special specification	Nil: not included	Drawing number: included						

- [NOTE]**
- Minimum daylight should be 155 mm.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 8701. The diameter is 35 mm.
- If the diameter differs, it should be specified on the confirmation sheet at the time of order.





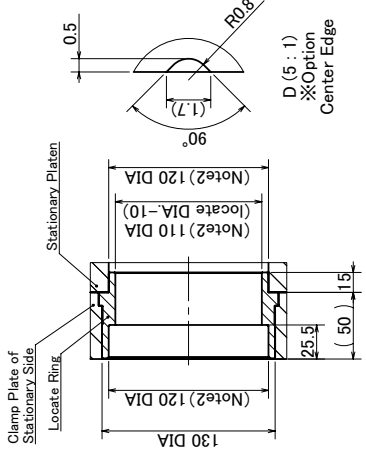


### CLASS DEFINITION

MGA 0140	①	②	③	④	⑤	⑥	⑦
① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm) S: 34						
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)						
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480						
④ Language on operation panel	J: Japanese E: English						
⑤ Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180						
⑥ Rust proof arrangement	NIL: not included N: included						
⑦ Special specification	NIL: not included Drawing number: included						

### [REMARKS]

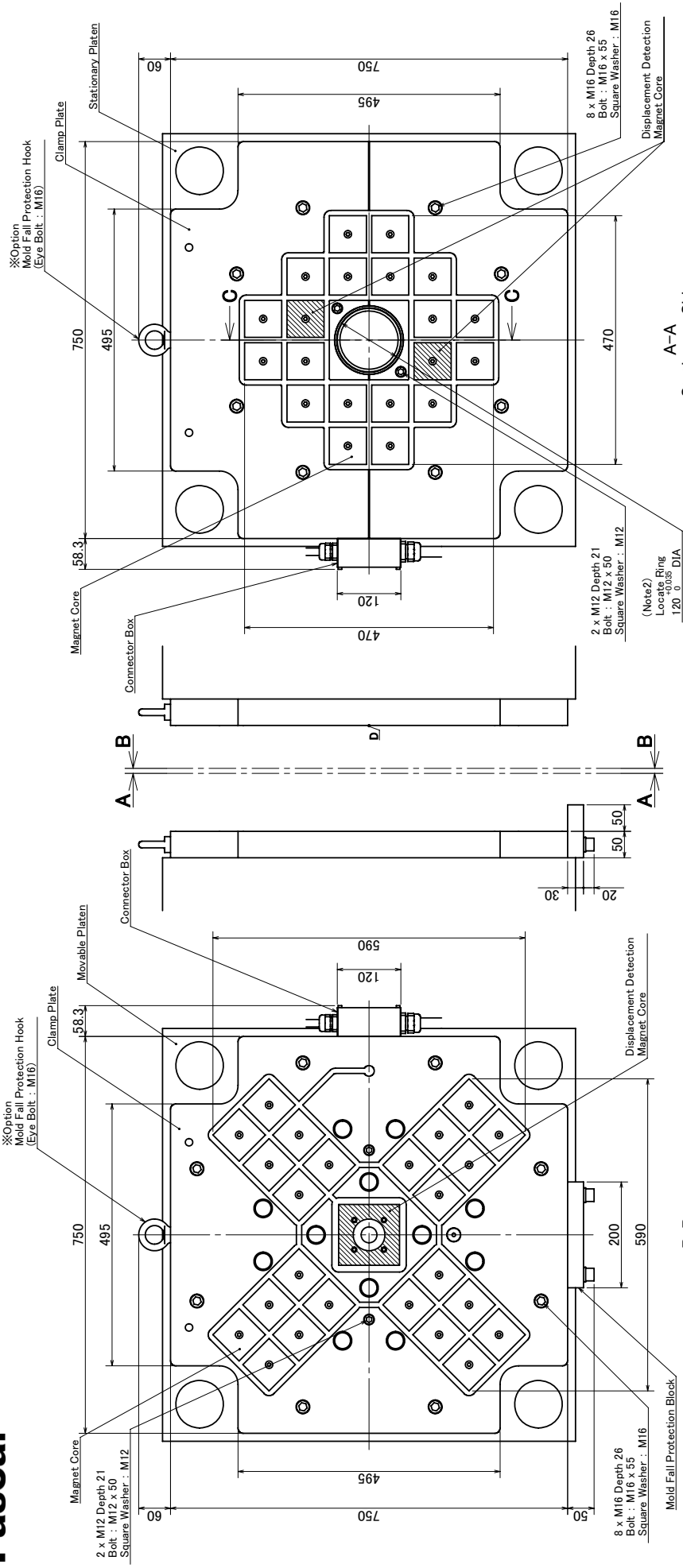
- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



Specifications Type	Stationary Side	
	Movable Side	Stationary Side
Number of Magnet Core	16	16
Maximum Clamping Force	133kN	118kN
Mass of Plate	138kg	138kg
Accessories	M16x65	8
Mounting Bolt	M12x60	2
Applied Mold Clamping Force	1300kN	

C-C (1:4)  
Details of locating





**A-A Stationary Side**

**B-B Movable Side**

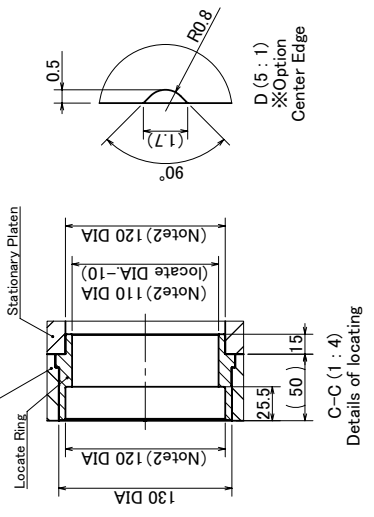
**CLASS DEFINITION**

MGA 0160 ① - ② ③ ④ ⑤ ⑥ ⑦

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 9: Special (if the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③ Primary power source (V)	2: 200/220	
④ Language on operation panel	J: Japanese E: English	
⑤ Working temperature range (°C)	NIL: 0~80	
⑥ Rust proof arrangement	NIL: not included N: included	
⑦ Special specification	NIL: not included Drawing number: included	

[REMARKS]

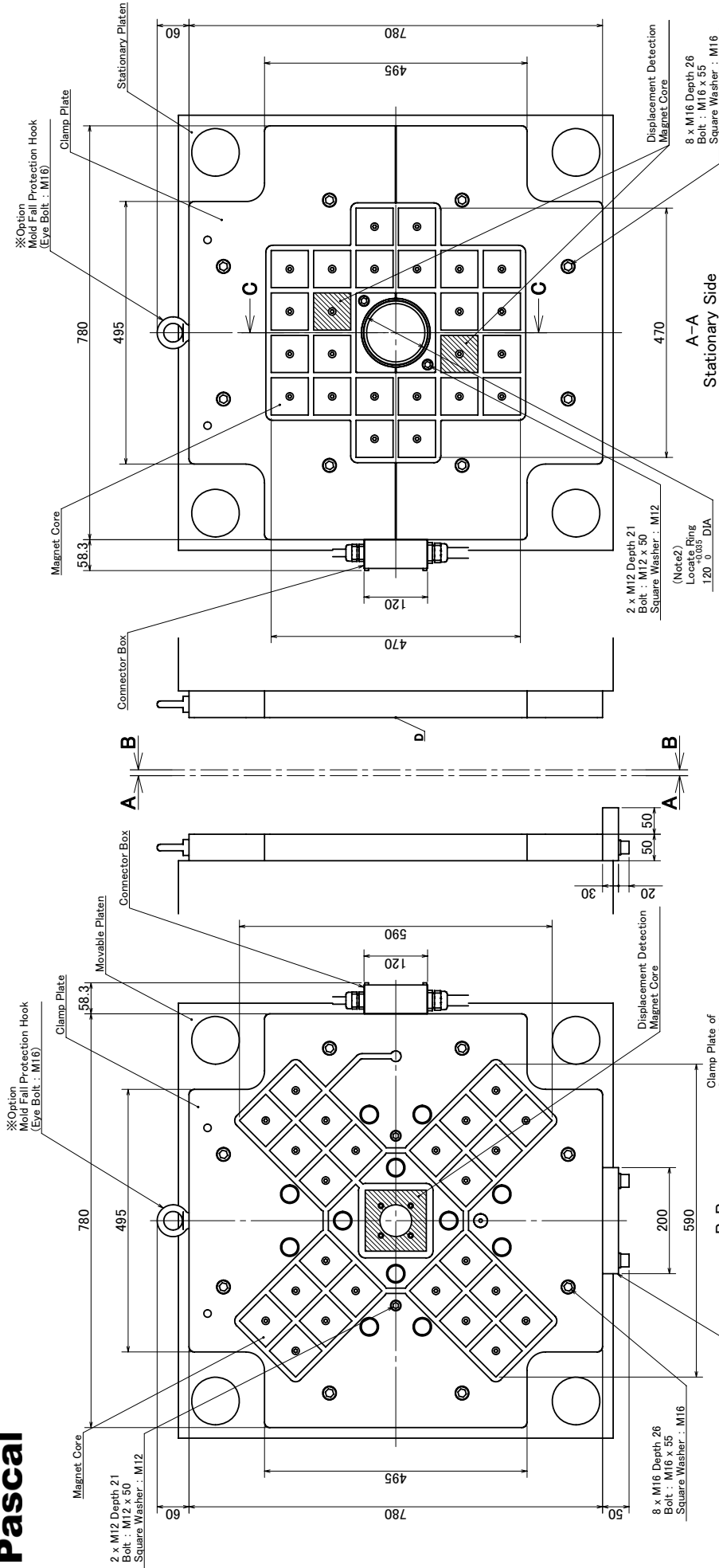
- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The diameter of center hole is 60 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



**Specifications**

Type	Movable Side	Stationary Side
Number of Magnet Core	24	20
Maximum Clamping Force	192kN	147kN
Mass of Accessories	198kg	190kg
Mounting Bolt	M16x55	8
Applied Mold Clamping Force	M12x50	2
		1400~1800kN



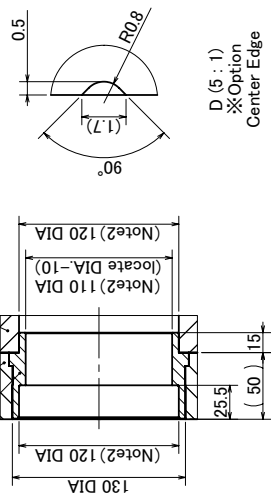


### CLASS DEFINITION

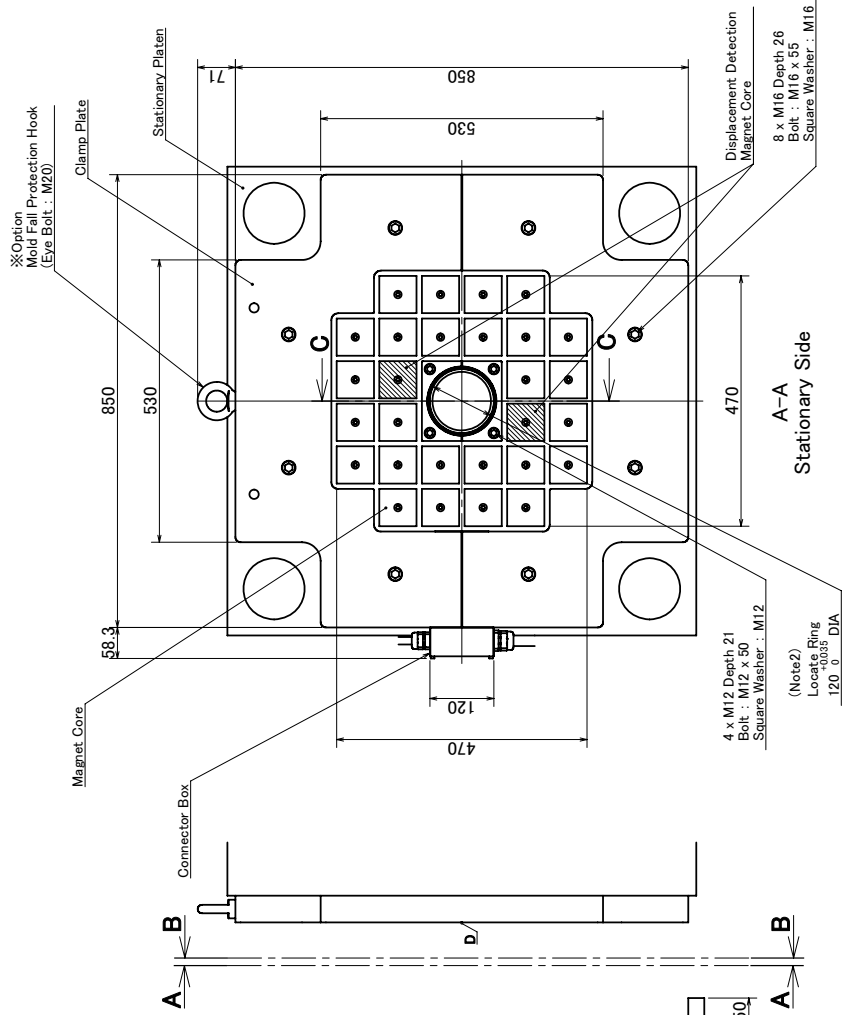
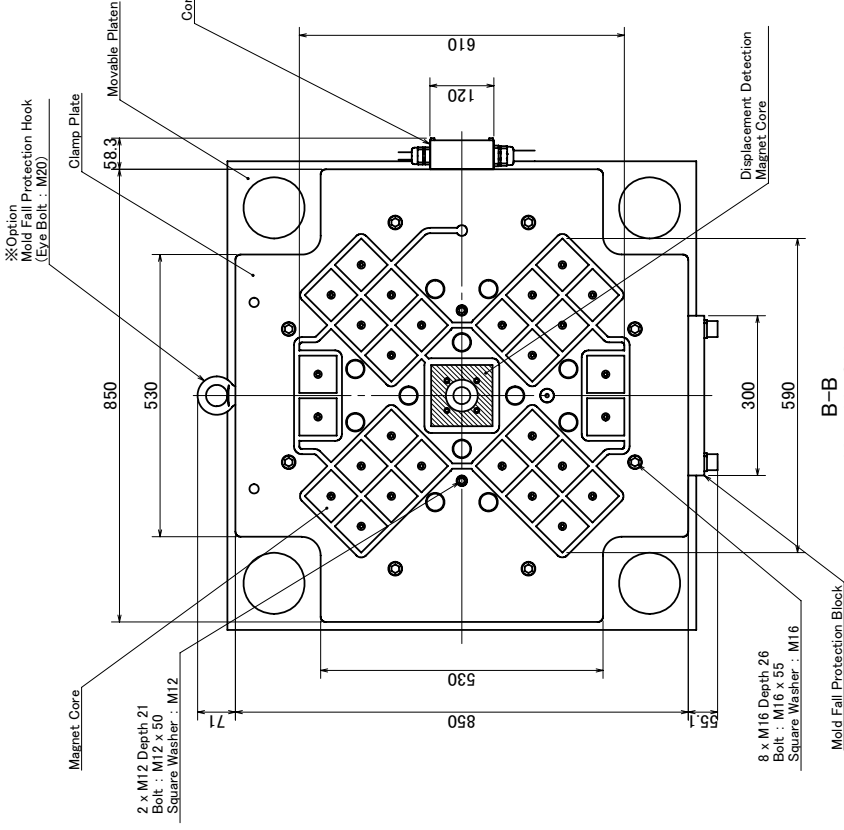
MG A	0190	①	②	③	④	⑤	⑥	⑦
①	Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)	S: 34				
②	Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	9: Special	(If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③	Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480	J: Japanese	E: English	
④	Language on operation panel							
⑤	Working temperature range (°C)	NIL: 0~80						
⑥	Rust proof arrangement	NIL: not included						
⑦	Special specification	NIL: not included						

### [REMARKS]

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note 2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



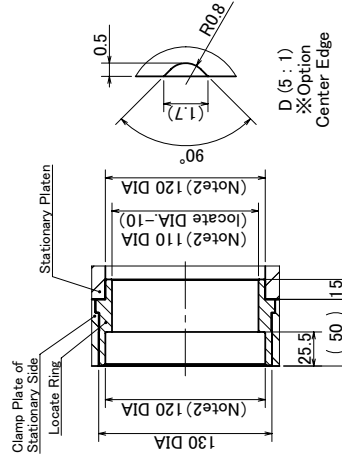
Specifications Type	Stationary Side	
	Movable Side	Stationary Side
Number of Magnet Core	24	24
Maximum Clamping Force	192kN 201kg	176kN 201kg
Mass of Plate	192kN 201kg	176kN 201kg
Accessories		
Mounting Bolt	M16:65 M12:60	8 2
Applied Mold Clamping Force		1700~1800kN



B-B Movable Side

A-A Stationary Side

Details of locating



### CLASS DEFINITION

MGA 0230 ① - ② ③ ④ ⑤ ⑥ ⑦

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 9: Special (if the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480	
④ Language on operation panel	J: Japanese E: English	
⑤ Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180	
⑥ Rust proof arrangement	NIL: not included N: included	
⑦ Special specification	NIL: not included Drawing number: included	

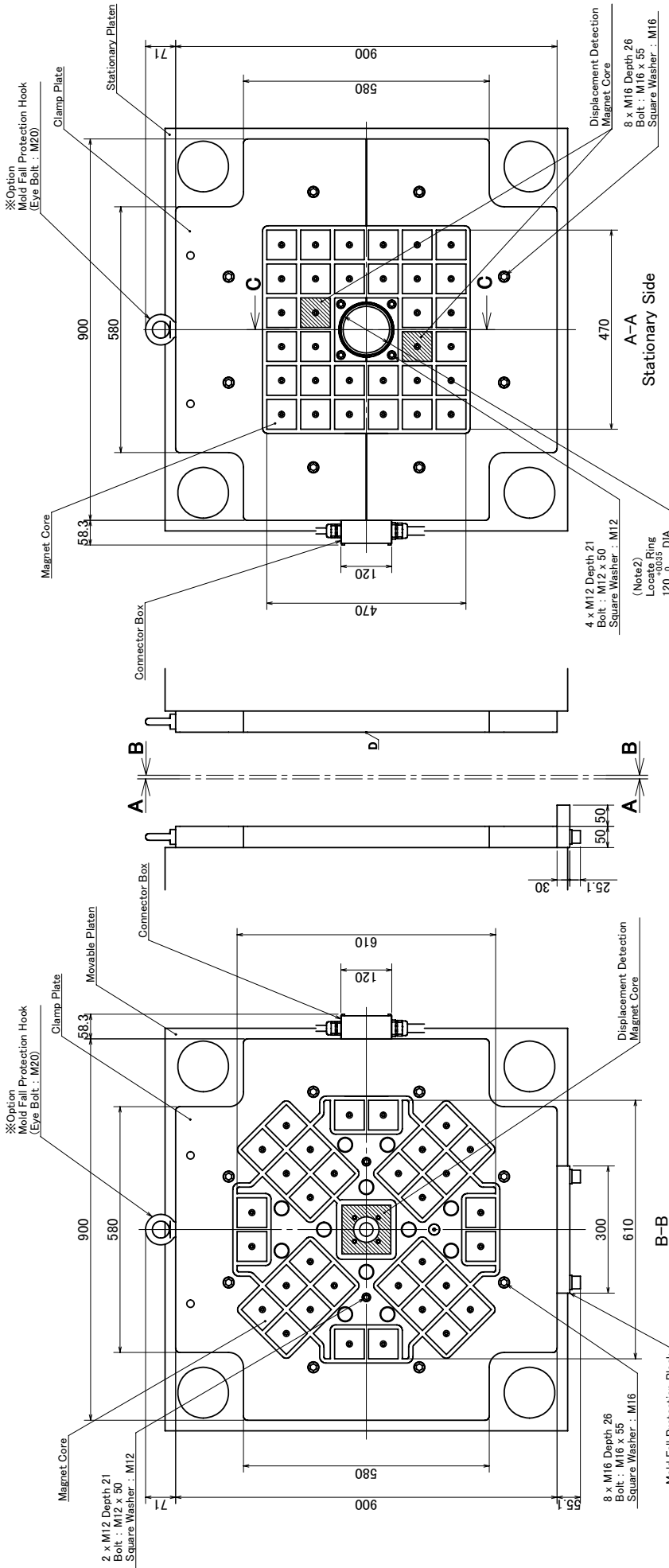
### [REMARKS]

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

### Specifications

Type	Movable Side	Stationary Side
Number of Magnet Core	28	28
Maximum Clamping Force	221kN	206kN
Mass of Plate	236kg	238kg
Accessories	8	8
Mounting Bolt	M16x55	M12x50
Applied Mold Clamping Force	2200~2300kN	

SCALE	1:10	REVISION HISTORY	STANDARD	MODEL	MGA0230	DESIGNED BY	04118	DATE	2006/12/14	NAME	Mag Clamp Layout	DWG.NO.	3MGA024800	FILE.NO.	MGAB2480.sldrw
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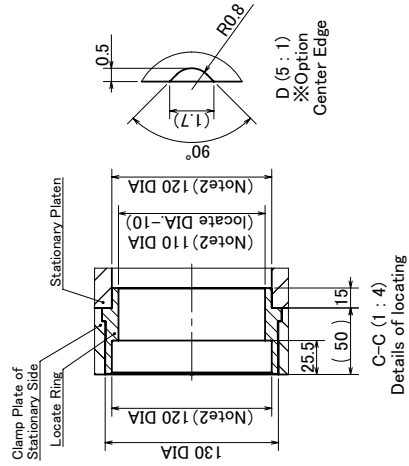
### CLASS DEFINITION

MGA 0250 ① - ② ③ ④ ⑤ ⑥ ⑦

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm.) 1: 40 2: 60 3: 100 4: 120	S: 34
② Diameter of Locate ring (mm)	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.) 2: 200/220 3: 380 4: 440 5: 480	
③ Primary power source (V)	J: Japanese E: English	
④ Language on operation panel	NIL: 0~80 H: 0~150 U: 0~180	
⑤ Working temperature range (°C)	NIL: not included N: included	
⑥ Rust proof arrangement	NIL: not included	
⑦ Special specification	NIL: not included Drawing number: included	

### [REMARKS]

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 80 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

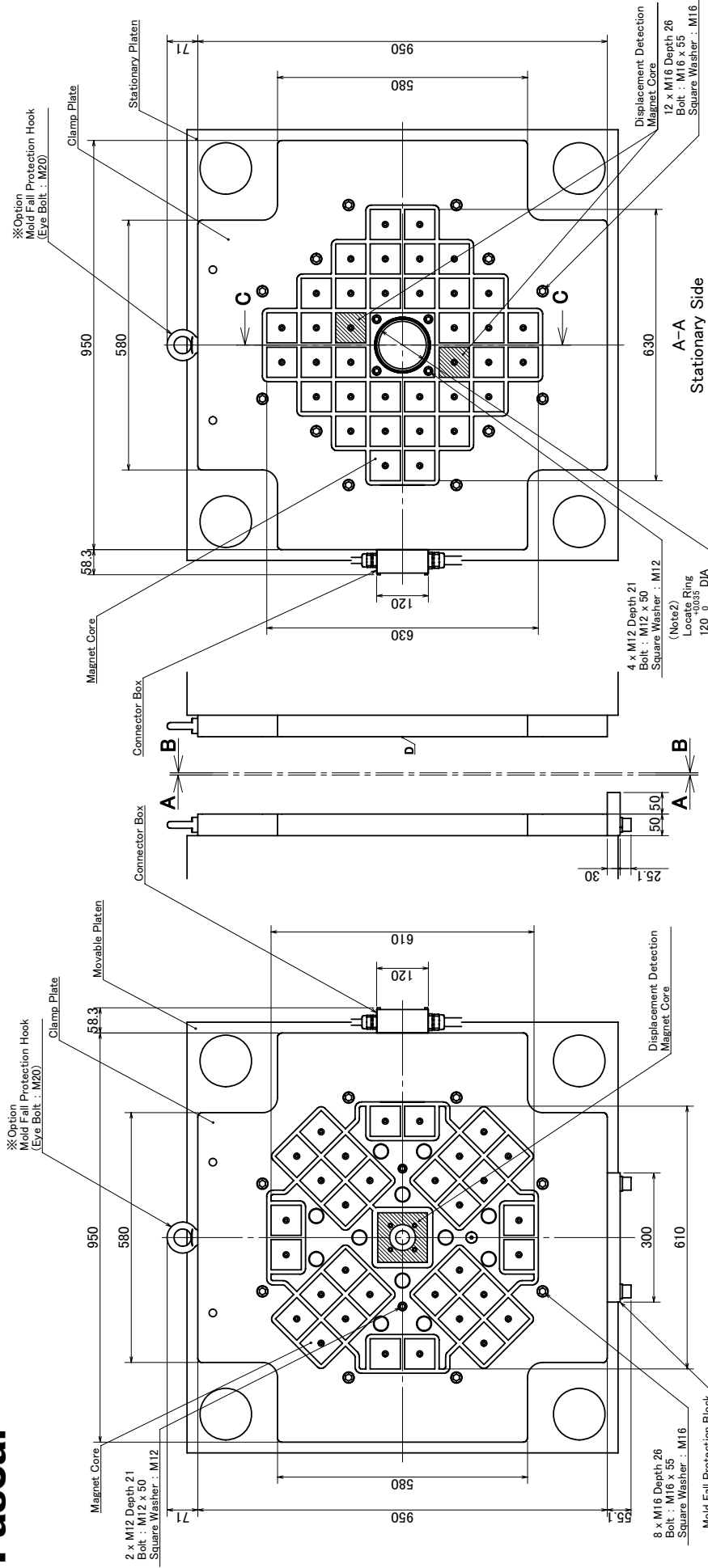


### Specifications

Type	Movable Side	Stationary Side
Number of Magnet Core	75 mm square 32 70 mm square 1 115 mm square	32
Maximum Clamping Force	251kN 269kg	235kN 270kg
Accessories	M16x55 2	8 4
Applied Mold Clamping Force	2500~2600kN	

SCALE	1:10	REVISION HISTORY	STANDARD XXX9A-034-3 S-30300-002	MODEL	MGA0250	DESIGNED BY	03006	DATE	2003/11/03	NAME	Mag Clamp Layout	DWG.NO.	3MGA017130	FILE.NO.	MGA01713.sldrw
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**Stationary Side**  
A-A  
**Movable Side**  
B-B

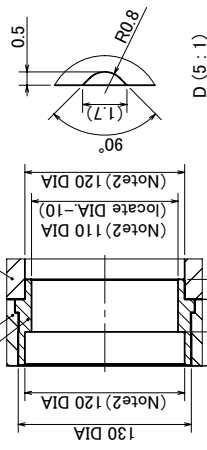
**CLASS DEFINITION**

MGA 0280 ① - ② ③ ④ ⑤ ⑥ ⑦

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480	
④ Language on operation panel	J: Japanese E: English	
⑤ Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180	
⑥ Rust proof arrangement	NIL: not included N: included	
⑦ Special specification	NIL: not included Drawing number: included	

**[REMARKS]**

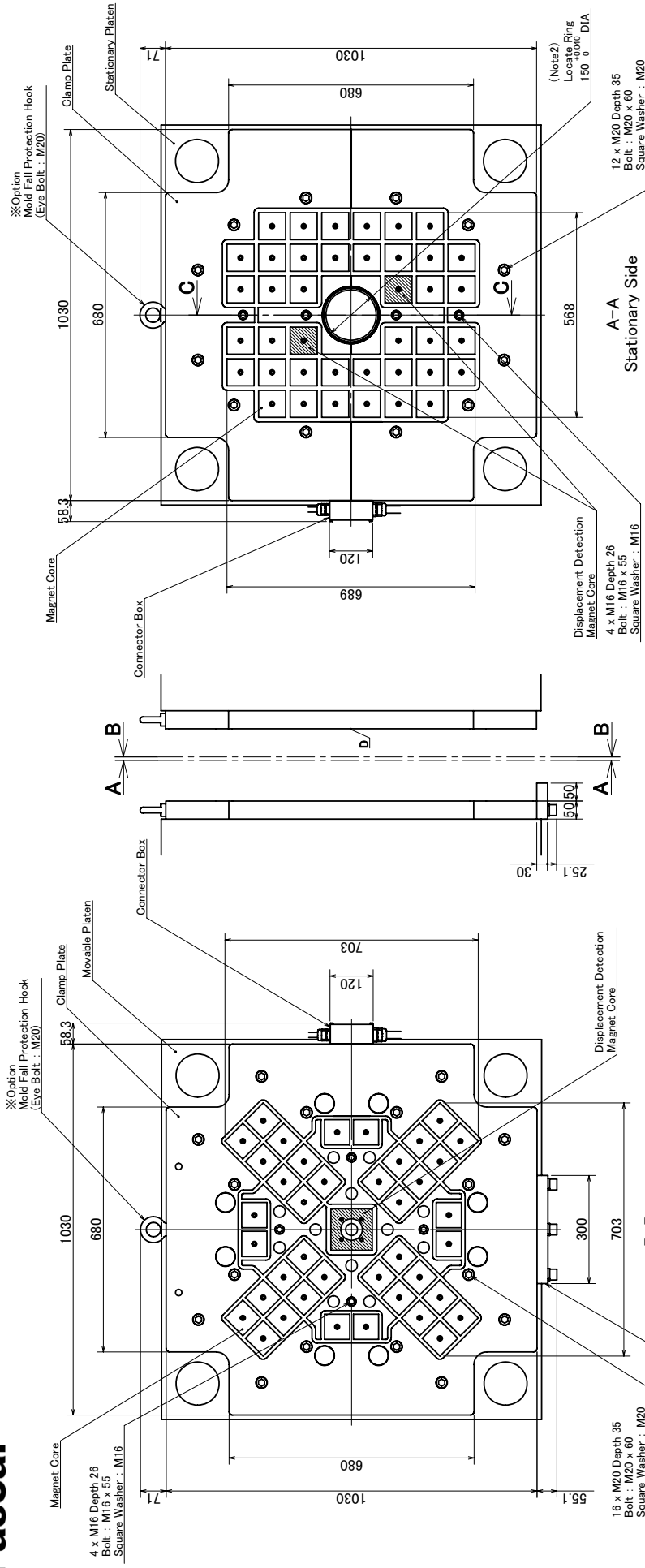
- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 120 mm. Ring size shown in drawing is diameter 120 mm. In other case of ring size is used it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of other holes are 35 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



D (5 : 1)  
※Option  
Center Edge

C-C (1 : 4)  
Details of locating

Specifications	Movable Side	Stationary Side
Type	75 mm square 70 mm square 115 mm square	— 36 —
Number of Magnet Core	32	265kN 294kN
Maximum Clamping Force	251kN 292kN	—
Mass of Plate	—	—
Accessories	—	—
Mounting Bolt	M16x55 M12x50	12 4
Applied Mold Clamping Force	—	2800~3000kN

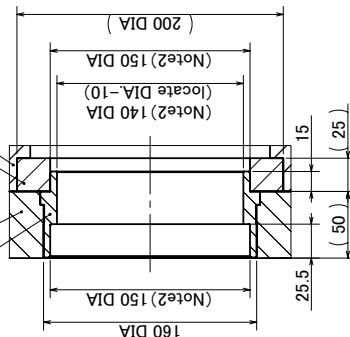
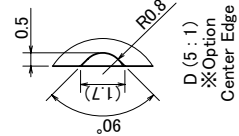


16 x M20 Depth 35  
Bolt : M20 x 60  
Square Washer : M20

### CLASS DEFINITION

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm)	S: 34
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 5: 150	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480	
④ Language on operation panel	J: Japanese E: English	
⑤ Working temperature range (°C)	NIL: 0~80	H: 0~150 U: 0~180
⑥ Rust proof arrangement	NIL: not included	N: included
⑦ Special specification	NIL: not included	Drawing number: included

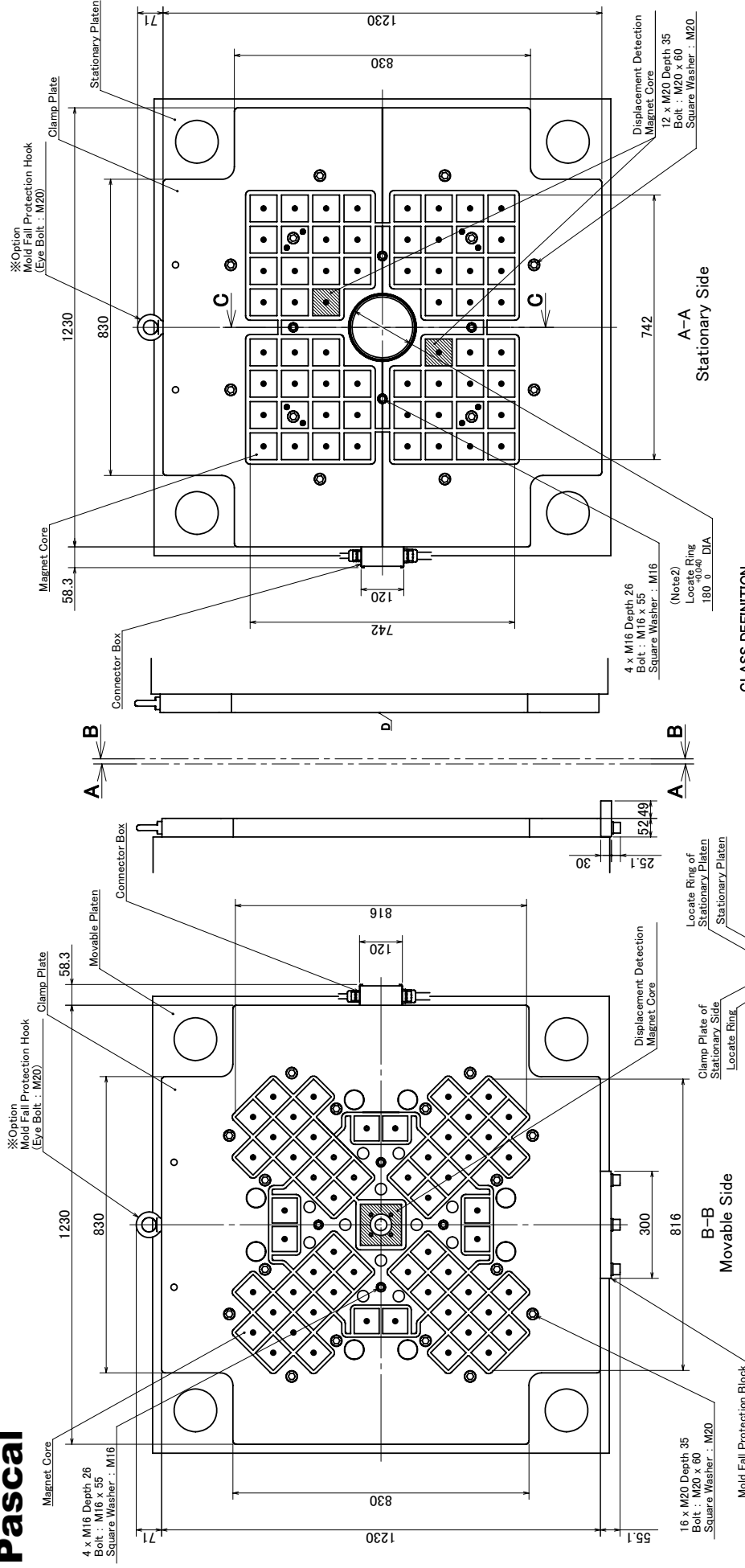
(REMARKS)  
1. Minimum daylight should be 155 mm.  
2. Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 150 mm. Ring size shown in drawing is diameter 150 mm. In other case of ring size is used, it should be changed to the dimension (Notes2).  
3. Option (if any) should be specified on the confirmation sheet at the time of order.  
4. The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of inner 12 holes and other holes are 35mm and 55mm respectively.  
If the diameter differs, it should be specified on the confirmation sheet at the time of order.



### Details of locating

Specifications	Movable Side	Stationary Side
Type	75 mm square	40
Number of Magnet Core	40	—
Maximum Clamping Force	310kN	314kN
Mass of Plate	350kg	361kg
Accessories		
Mounting Bolt	M20x60	16
	M16x55	4
Applied Mold Clamping Force	3500~3800kN	



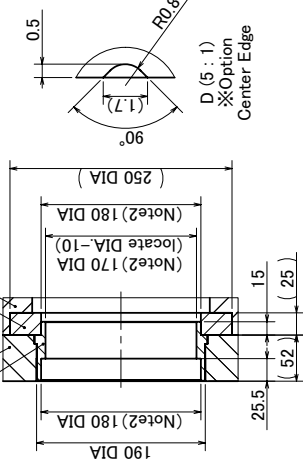


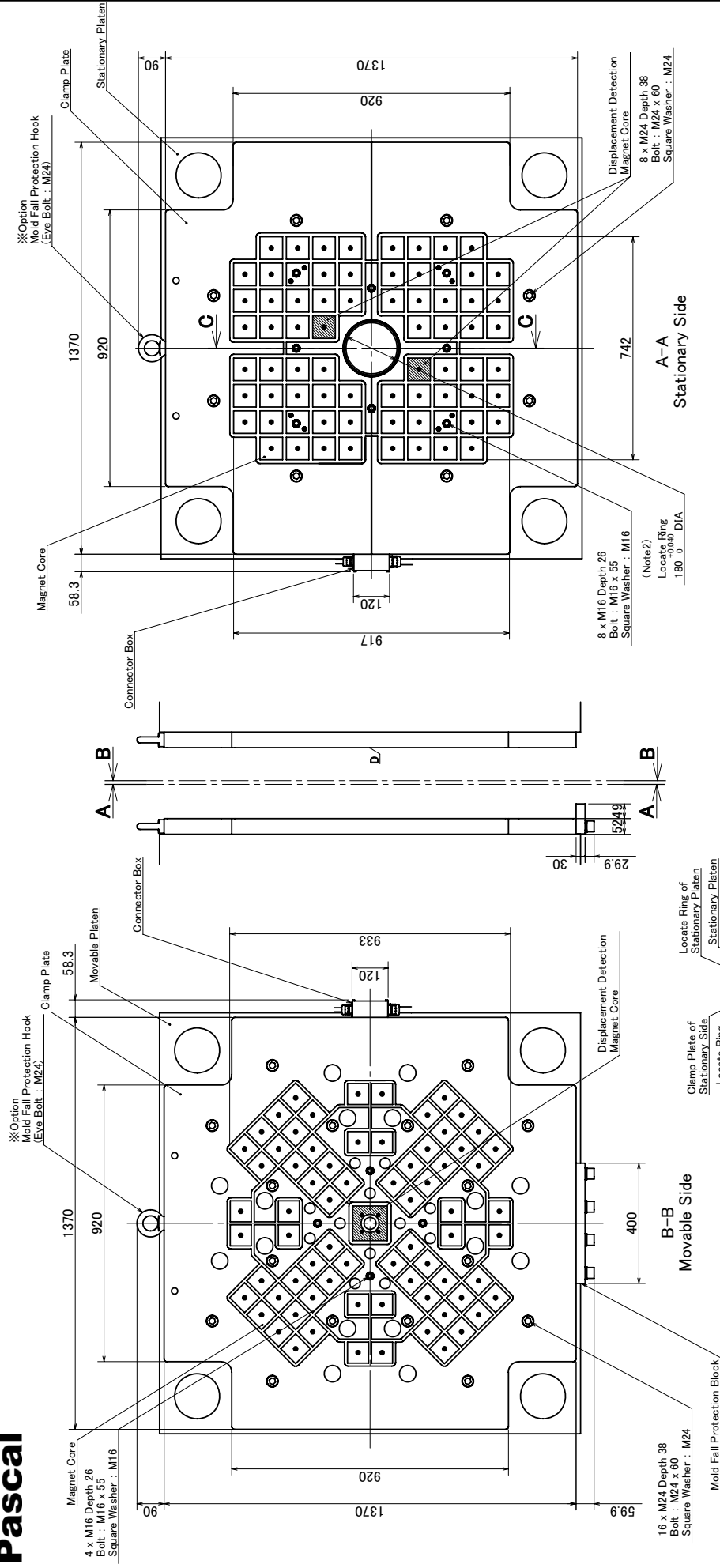
### CLASS DEFINITION

MGA 0550	①	②	③	④	⑤	⑥	⑦
① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm) S: 34						
② Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	5: 150	6: 180	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480						
④ Language on operation panel	J: Japanese E: English						
⑤ Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180						
⑥ Rust proof arrangement	NIL: not included N: included						
⑦ Special specification	NIL: not included Drawing number: included						

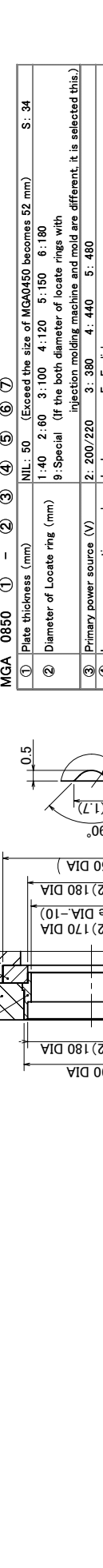
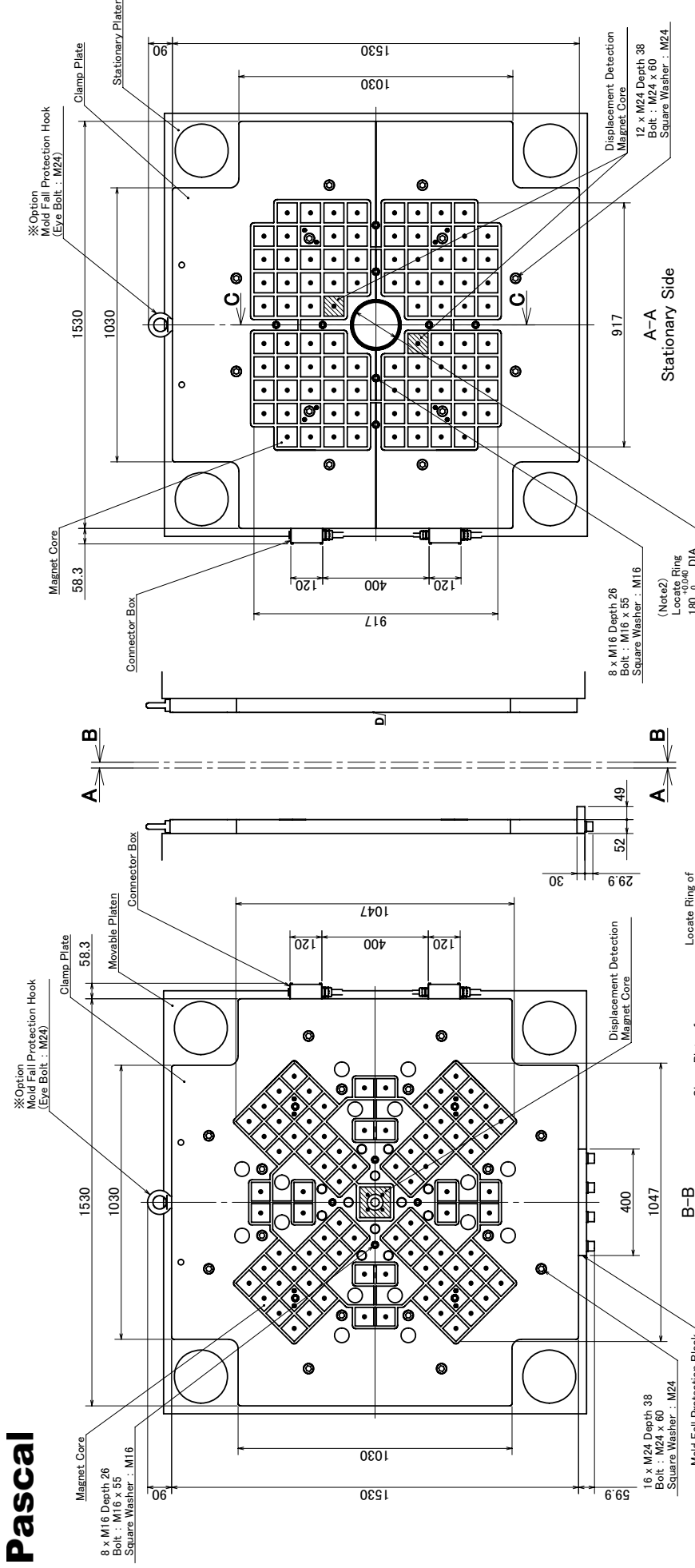
### [REMARKS]

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 180 mm. Ring size shown in drawing is diameter 180 mm. In other case of ring size is used it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.





SCALE	REVISION HISTORY	DESIGNED BY	MODEL	NAME	FILE NO.
1:14	STANDARD XXX9A-034-3 S-30300-002	03006	MGA0650	Mag Clamp Layout	3MGAA17530
		2003/11/03			MGAA1753.sldrw



Specifications	
Type	Stationary Side
Number of Magnet Core	88
Maximum Clamping Force	690kN
Mass of Plate	839kg
Accessories	M24x60 16 12 M16x55 8 8
Applied Mold Clamping Force	8500kN

**CLASS DEFINITION**

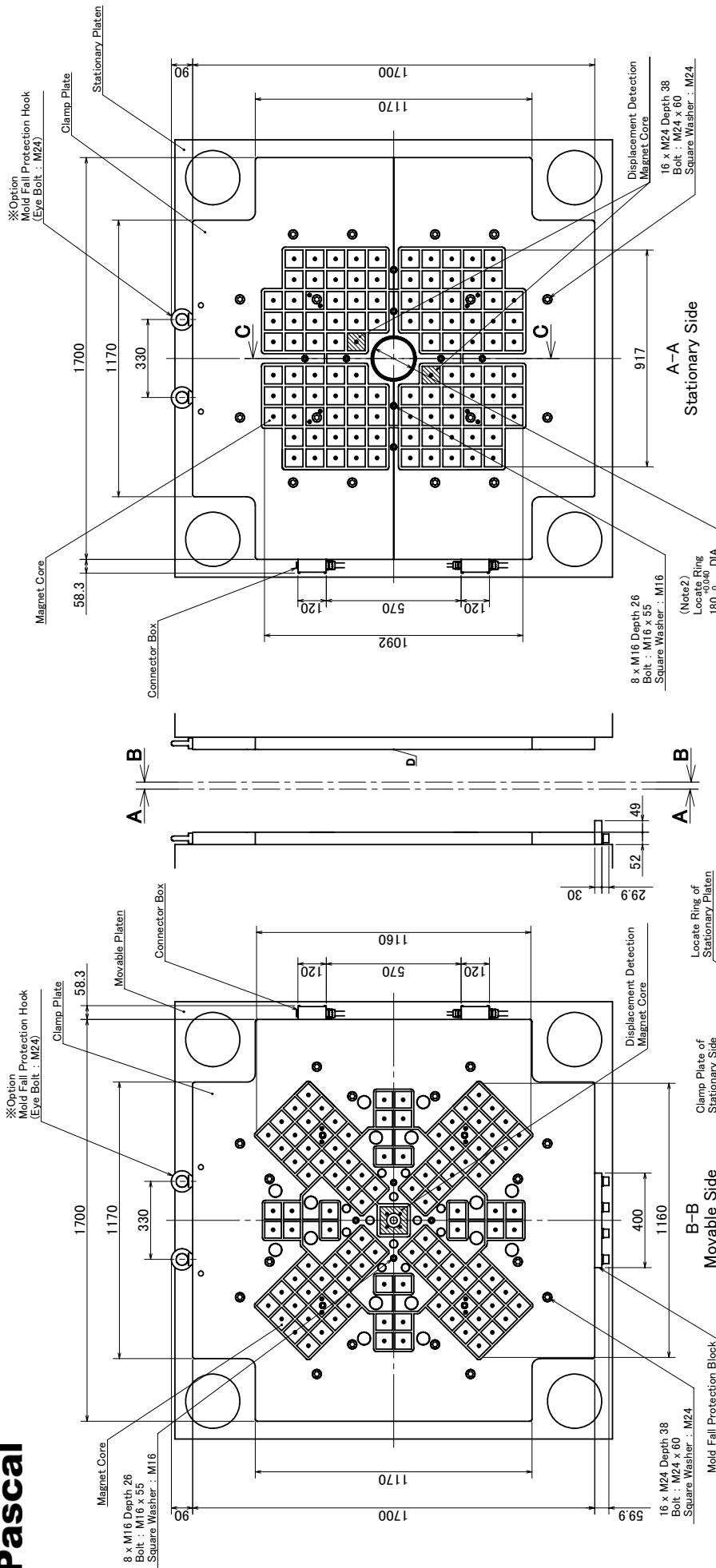
**MGA 0850** ① - ② ③ ④ ⑤ ⑥ ⑦

① Plate thickness (mm)	NIL: 50 (Exceed the size of MGA0450 becomes 52 mm) S: 34
② Diameter of Locate ring (mm)	1: 40 2: 60 3: 100 4: 120 5: 150 6: 180 9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)
③ Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480
④ Language on operation panel	J: Japanese E: English
⑤ Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180
⑥ Rust proof arrangement	NIL: not included N: included
⑦ Special specification	NIL: not included Drawing number: included

**[REMARKS]**

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter, 180 mm. Ring size shown in drawing is diameter, 180 mm. In other case of ring size is used it should be changed to the dimension (Note2).
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 6701. The diameter of center hole is 60 mm. The ones of inner 12 holes and other holes are 35mm and 55mm respectively. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

# Pascal

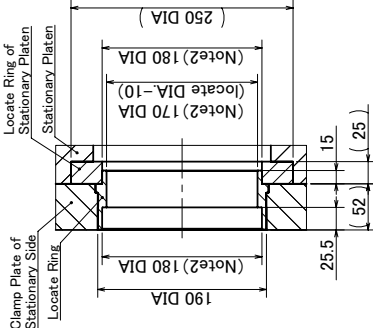
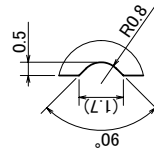


## CLASS DEFINITION

MG	1050	①	②	③	④	⑤	⑥	⑦	
①	Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)						S: 34
②	Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	5: 150	6: 180	9: Special (if the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)	
③	Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480				
④	Language on operation panel	J: Japanese	E: English						
⑤	Working temperature range (°C)	NIL: 0~80							
⑥	Rust proof arrangement	NIL: not included							
⑦	Special specification	NIL: not included							

## [REMARKS]

- Minimum daylight should be 155 mm.
- Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 180 mm. Ring size shown in drawing is diameter 180 mm. In other case of ring size is used, it should be changed to the dimension. (Not Option (if any) should be specified on the confirmation sheet at the time of order.)
- Option (if any) should be specified on the confirmation sheet at the time of order.
- The hole position of ejector is according to JIS B 8701. The diameter of center hole is 60 mm. The ones of inner 12 holes and other holes are 35mm and 55mm respectively. If the diameter differs, it should be specified on the confirmation sheet at the time of order.



C-C (1:6)  
Details of locating

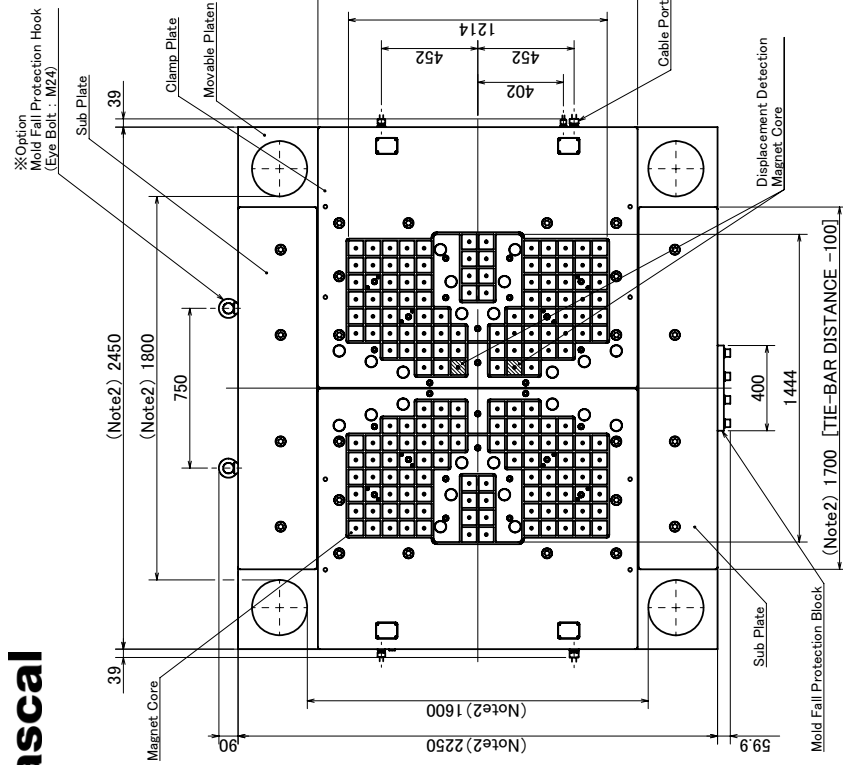
Specifications	Stationary Side	
	Movable Side	Stationary Side
Type	75 mm square	104
Number of Magnet Core	108	—
Maximum Clamping Force	809kN	815kN
Mass of Plate	1036kg	1049kg
Accessories	M24x60	16
Mounting Bolt	M16x55	8
Applied Mold Clamping Force	10000~10500kN	

SCALE	1:18	REVISION HISTORY	STANDARD XXX9A-034-3 S-30300-002	DESIGNED BY	03006	MODEL	MGA1050	NAME	Mag Clamp Layout	DWGNO.	3MGAA17730	FILENAME	MGAA1773.sldrw
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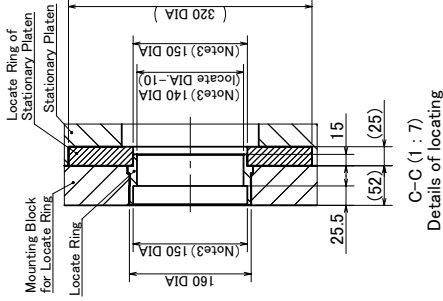




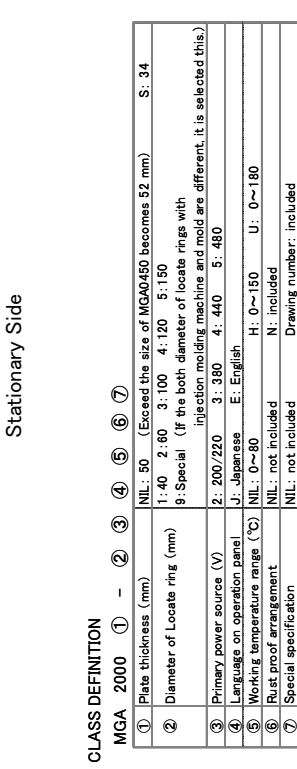




**B-B**  
Movable Side



**A-A**  
Stationary Side



**CLASS DEFINITION**

MGA 2000	①	②	③	④	⑤	⑥	⑦
① Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)	S: 34				
② Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	5: 150		
③ Primary power source (V)	9: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)						
④ Language on operation panel	2: 200/220	3: 380	4: 440	5: 480			
⑤ Working temperature range (°C)	NIL: 0~80						
⑥ Rust proof arrangement	NIL: not included						
⑦ Special specification	NIL: not included						

D (5 : 1)  
※Option  
Center Edge

**Specifications**

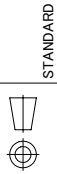
Type	Movable Side	Stationary Side
Number of Magnet Core	75 mm square: 172 70 mm square: 115 mm square	168
Maximum Clamping Force	1264kN 1964kg	1317kN 1958kg
Accessories		
Mounting Bolt	M30x65: 24 M16x55: 28 M12x55: 4	32 22 4
Applied Mold Clamping Force	18000~20000kN	

- [NOTE]**
- Minimum daylight should be 155 mm.
  - Dimensions of platens and tie-bars shown above are reference only.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 150 mm. Ring size shown in drawing is diameter 150 mm. In other case of ring size is used it should be changed to the dimension (Note2).
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 6701. The diameter is 65 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.

SCALE

1:25

REVISION HISTORY



STANDARD

MODEL

MGA2000

NAME

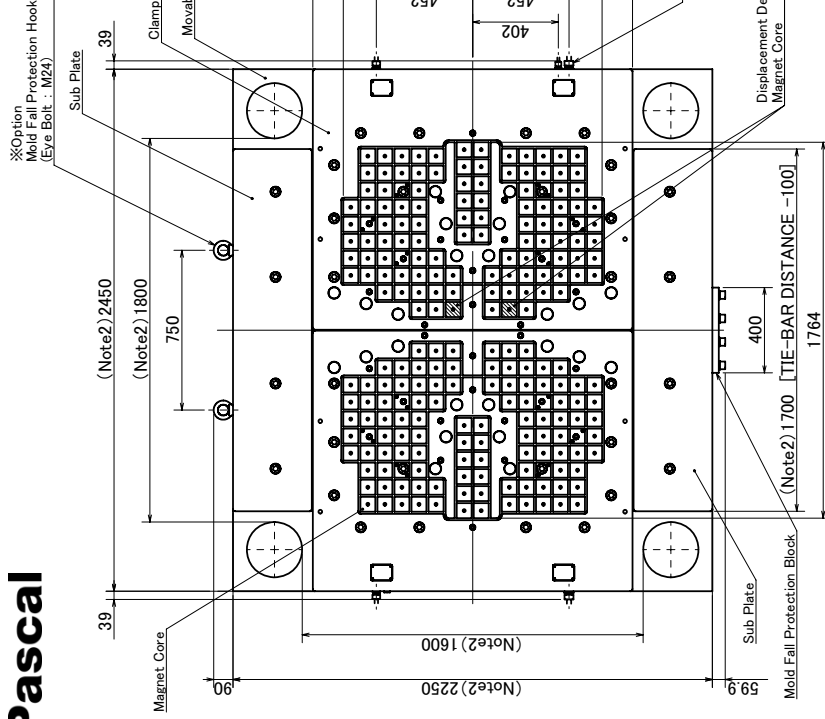
Mag Clamp Layout

DWGNO.

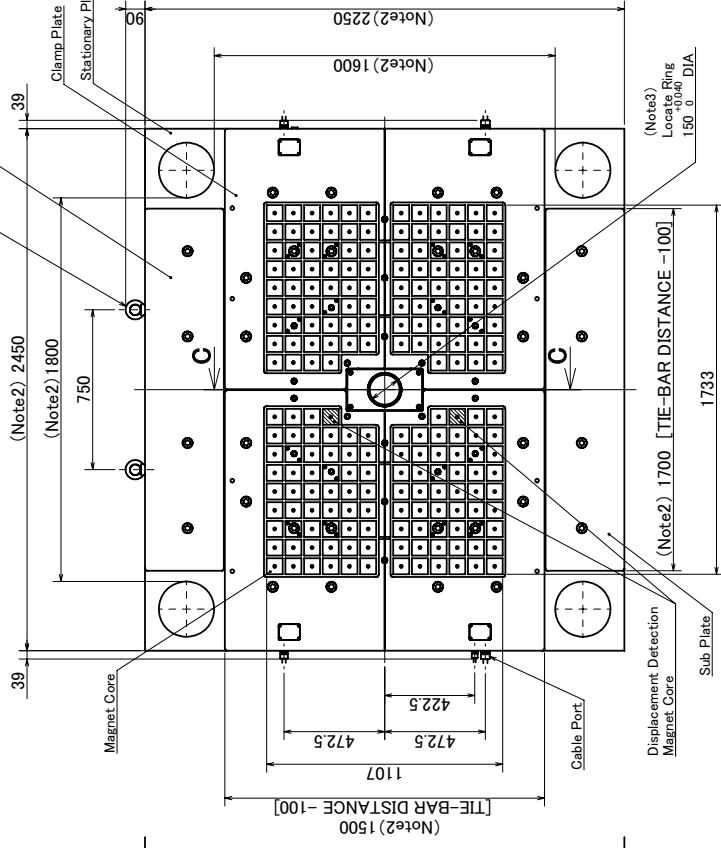
3MGA82120

FILENAME

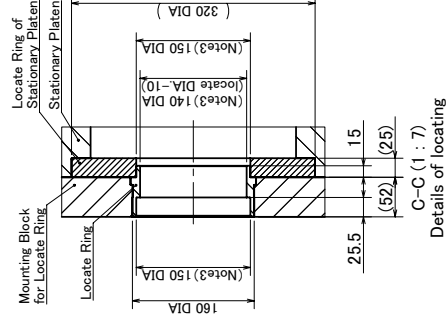
MGA8212.sldrw



**B-B**  
Movable Side



**A-A**  
Stationary Side



Details of locating  
C-C (1:7)

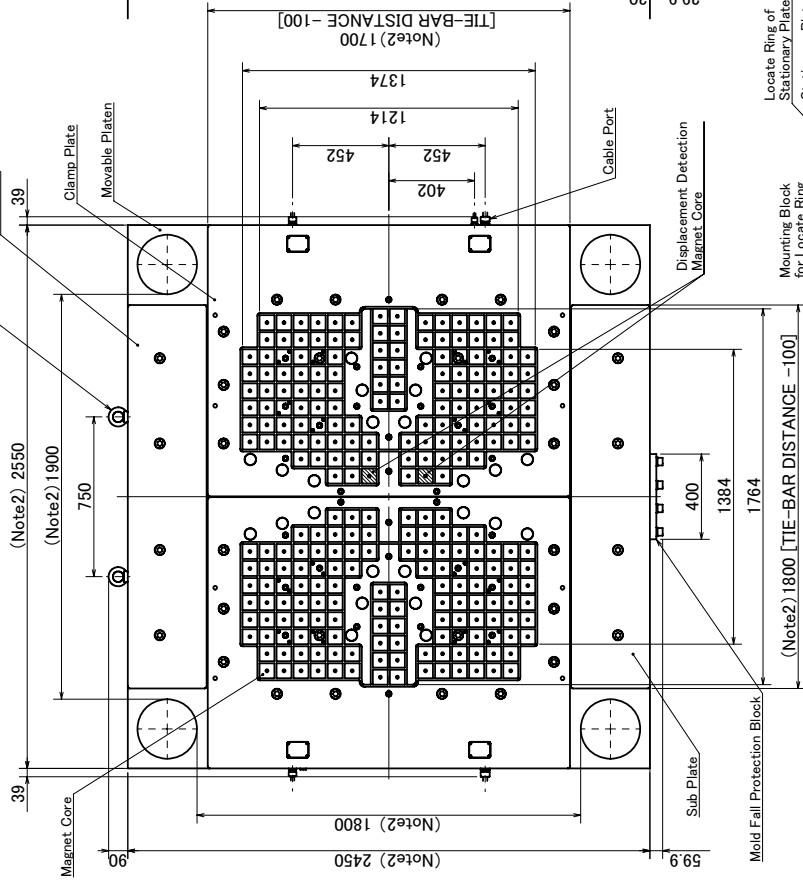
**CLASS DEFINITION**

MG	2500	①	②	③	④	⑤	⑥	⑦	
①	Plate thickness (mm)	NIL: 50 (Exceed the size of MGA450 becomes 52 mm)							S: 34
②	Diameter of locate ring (mm)	1: 40 2: 60 3: 100 4: 120 5: 150 g: Special (If the both diameter of locate rings with injection molding machine and mold are different, it is selected this.)							
③	Primary power source (V)	2: 200/220 3: 380 4: 440 5: 480							
④	Language on operation panel	J: Japanese E: English							
⑤	Working temperature range (°C)	NIL: 0~80 H: 0~150 U: 0~180							
⑥	Rust proof arrangement	NIL: not included N: included							
⑦	Special specification	NIL: not included Drawing number: included							

- (NOTE)**
- Minimum daylight should be 155 mm.
  - Dimensions of platens and tie-bars shown above are reference only.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 150 mm. Ring size shown in drawing is diameter 130 mm. In other case of ring size is used, it should be changed to the dimension (Note2).
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 6701. The diameter is 35 mm.
- If the diameter differs, it should be specified on the confirmation sheet at the time of order.

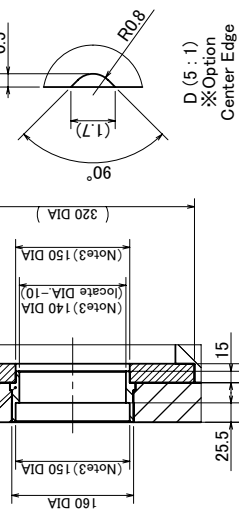
Specifications	Movable Side	Stationary Side
Type	75 mm square	192
Number of Magnet Core	70 mm square	212
Maximum Clamping Force	115 mm square	1505kN
Mass of Plate		1964kg
Accessories		1958kg
Mounting Bolt	M30x65	32
	M16x55	22
	M12x55	4
Applied Mold Clamping Force		22000~25000kN

※Option  
Mold Fall Protection Hook  
(Eye Bolt : M24)



B-B  
Movable Side

A-A  
Stationary Side



Specifications	Movable Side	Stationary Side
Type	75 mm square	228
Number of Magnet Core	70 mm square	244
Maximum Clamping Force	115 mm square	1788kN
Mass of Plate	M30x65	32
Accessories	M16x65	26
Mounting Bolt	M12x65	4
Applied Mold Clamping Force	28000~30000kN	

CLASS DEFINITION

MGA 3000	①	②	③	④	⑤	⑥	⑦
① Plate thickness (mm)	NIL: 50	(Exceed the size of MGA0450 becomes 52 mm)	S: 34				
② Diameter of Locate ring (mm)	1: 40	2: 60	3: 100	4: 120	5: 150		
③ Primary power source (V)	2: 200/220	3: 380	4: 440	5: 480			
④ Language on operation panel	J: Japanese	E: English					
⑤ Working temperature range (°C)	NIL: 0~80						
⑥ Rust proof arrangement	NIL: not included						
⑦ Special specification	NIL: not included						

- (NOTE)
- Minimum daylight should be 155 mm.
  - Dimensions of platens and tie-bars shown above are reference only.
  - Locate ring can be corresponded with both hole sizes of mold and injection side to diameter 150 mm. Ring size shown in drawing is diameter 150 mm. In other case of ring size is used it should be changed to the dimension (Note2).
  - Option (if any) should be specified on the confirmation sheet at the time of order.
  - The hole position of ejector is according to JIS B 0701. The diameter is 65 mm. If the diameter differs, it should be specified on the confirmation sheet at the time of order.