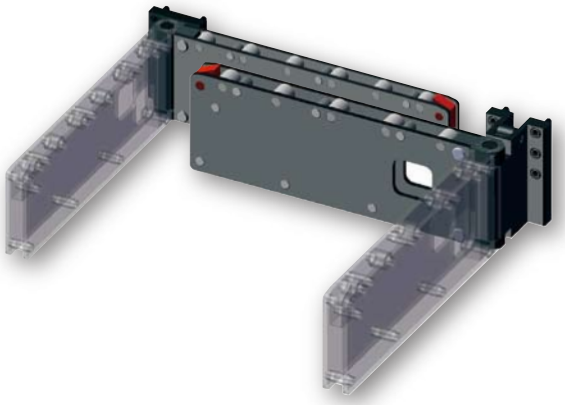
Quick Die Change Systems

QDCS

PRE-ROLLERS/DIE LIFTERS



KOSMEK®

Pre-rollers/Die lifters

Select from the items shown below.

System Overview

●Hydraulic clamp
(See CAT No. GQ--02)**

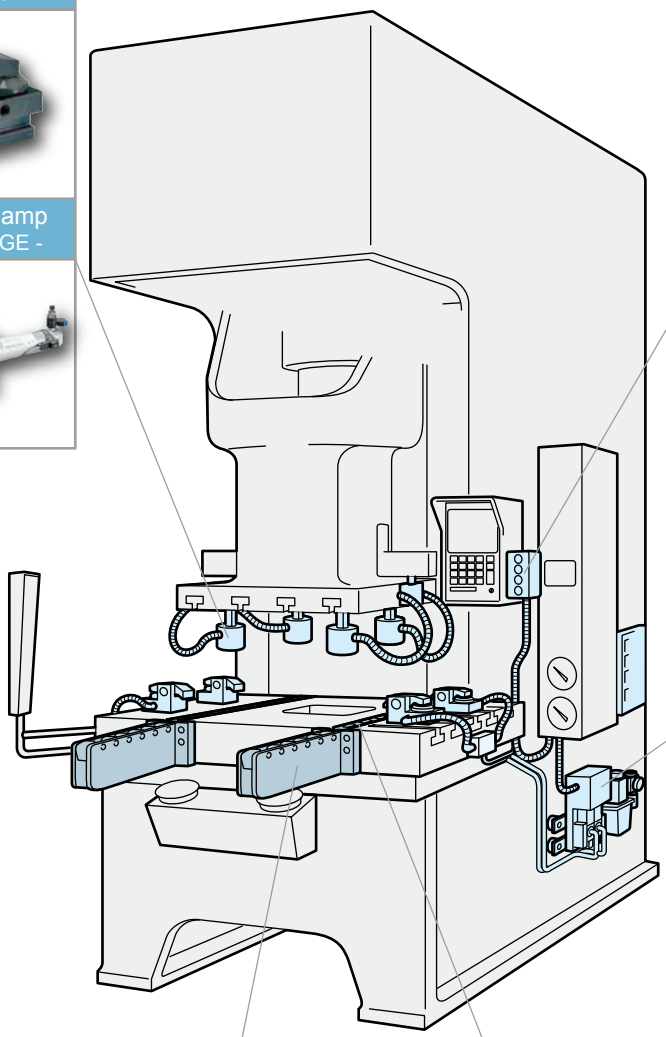
Hydraulic locking with spring release is secure and robust.

Piston clamp - model GA -	Lever clamp -model GB-
	
Piston clamp - model GD -	**Lever clamp - model GE -**
	

●Operation control panel
(See CAT No. GQ--02)**

Intuitive and reliable interlocking controls ensure safe operation.

Operation Control Panel -model YP-

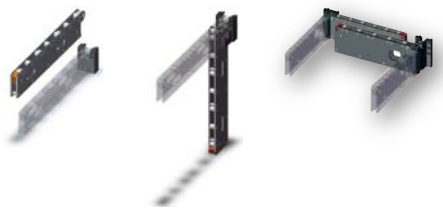


●Hydraulic Unit
(See CAT No. GQ--02)**

Compact hydraulic unit features air powered pump and electrically controlled non-leak valves.

Hydraulic Unit -model CP/CR-

Pre-Roller -model MRC/MRD/MRE/MRF-



●Pre-Roller (see p. 3-32)

The die is brought to the front of the bolster for smooth die changes using a crane or forklift.

Die lifter -model RA/RB-

●Die lifter (see p. 33-50)

Recessed into t-slots or u-slots, the lifters raise the die for easy positioning. Hydraulic and spring lifting types are available.

model MRC/MRD/MRE/MRF/RA/RB

Removable pre-roller

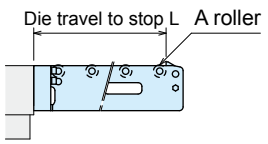
Specifications

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRC0750-200	3.0	3	200	850
MRC0750-250	3.5	3	250	650
MRC0750-315	4.3	4	315	500
MRC0750-355	4.8	4	355	450
MRC0750-400	5.3	5	400	400
MRC0750-450	5.8	5	450	350
MRC0750-500	6.4	6	500	300
MRC0750-560	7.1	6	560	270
MRC0750-630	8.0	7	630	240

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRC1190-315	6.7	3	315	1500
MRC1190-355	7.6	4	355	1300
MRC1190-400	8.4	4	400	1100
MRC1190-450	9.4	5	450	950
MRC1190-500	10.3	5	500	800
MRC1190-560	11.3	6	560	700
MRC1190-630	12.4	6	630	650
MRC1190-710	14.0	7	710	500
MRC1190-800	15.5	7	800	450
MRC1190-850	16.5	8	850	400
MRC1190-900	17.5	8	900	350
MRC1190-950	18.6	9	950	300
MRC1190-1000	19.5	9	1000	250

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRC1500-400	9.9	4	400	1500
MRC1500-450	11.2	5	450	1350
MRC1500-500	12.3	5	500	1200
MRC1500-560	13.4	6	560	1050
MRC1500-630	14.8	6	630	900
MRC1500-710	16.8	7	710	800
MRC1500-800	18.7	7	800	700
MRC1500-850	20.0	8	850	600
MRC1500-900	21.1	8	900	550
MRC1500-950	22.4	9	950	500
MRC1500-1000	23.5	9	1000	450

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRC1900-400	11.9	4	400	2000
MRC1900-450	13.4	5	450	1800
MRC1900-500	14.8	5	500	1600
MRC1900-560	15.9	6	560	1400
MRC1900-630	17.8	6	630	1250
MRC1900-710	20.2	7	710	1100
MRC1900-800	22.6	7	800	950
MRC1900-850	24.2	8	850	850
MRC1900-900	25.6	8	900	800
MRC1900-950	27.2	9	950	750
MRC1900-1000	28.6	9	1000	700

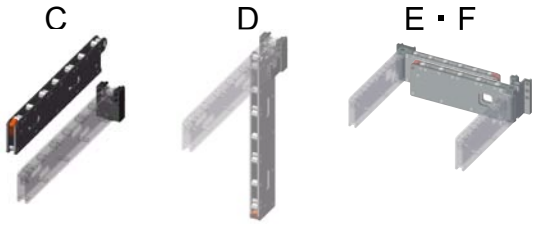


Model Code

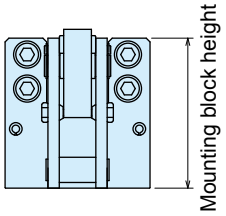
MR C 119 0 – 630
1 2 3 4

1 Frame storage type

C: Removable type
D: Removable vertical folding type
…See p. 13-22
E: Horizontal folding type…See p. 23-30
F: Horizontal folding type…See p. 23-30



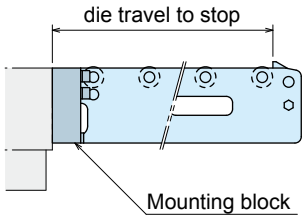
2 Mounting block height



3 Design No.

4 Die travel L(mm)/Mounting block type

Dimensions : Distance die can be pulled out…
See specifications column
B : Mounting block



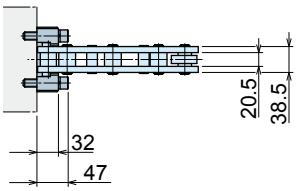
Compatible mounting blocks

Frame unit model	Mounting block type	Weight (kg)
MRC0750-□	MRC0750-B	1.2
MRC1190-□	MRC1190-B	3.4
MRC1500-□	MRC1500-B	4.6
MRC1900-□	MRC1900-B	6.9

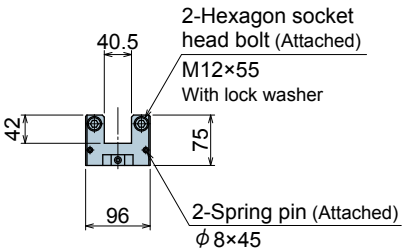
Notes
1. The MRC roller and MRC-B block are sold separately.
Order by type and number required.

Removable pre-roller

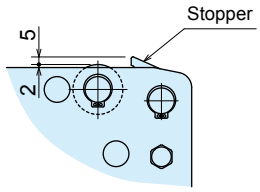
Outline Dimensions



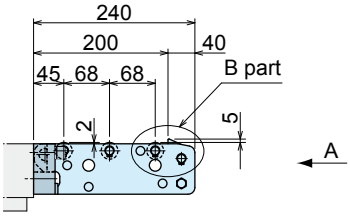
When setting pre-roller
(View A)



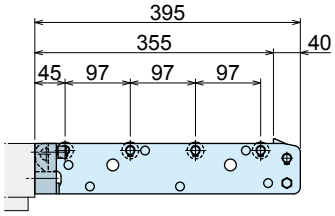
External dimensions of block
(MRC0750-B)



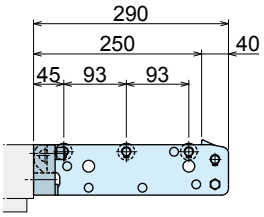
Enlarged view of B (end)



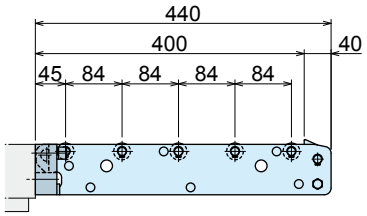
MRC0750-200



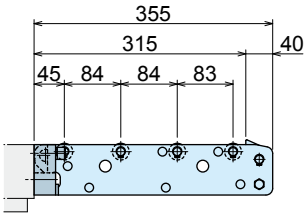
MRC0750-355



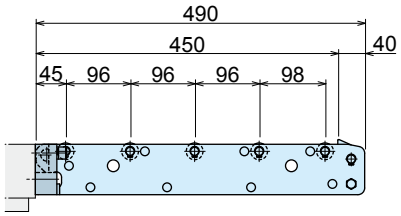
MRC0750-250



MRC0750-400

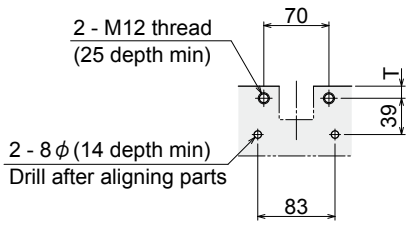


MRC0750-315

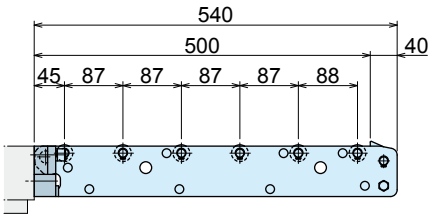


MRC0750-450

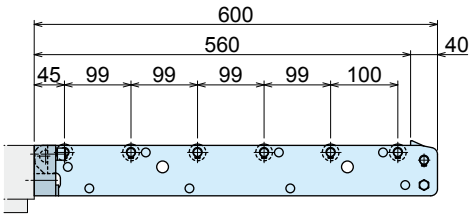
Block mounting diagram



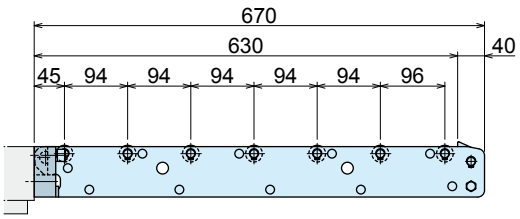
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		



MRC0750-500



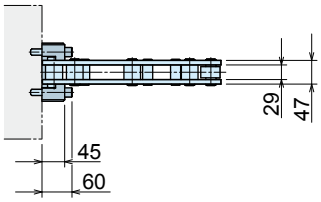
MRC0750-560



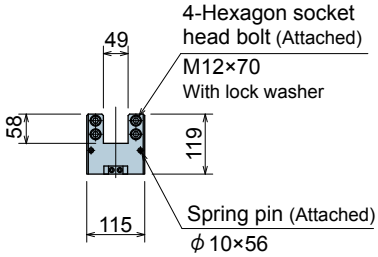
MRC0750-630

Removable pre-roller

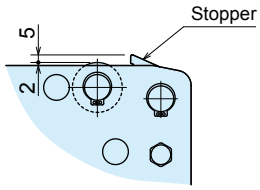
Outline Dimensions



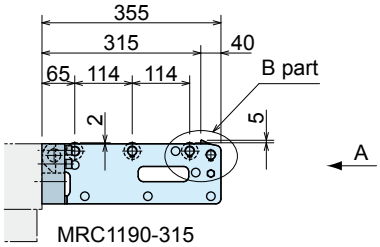
When setting pre-roller
(View A)



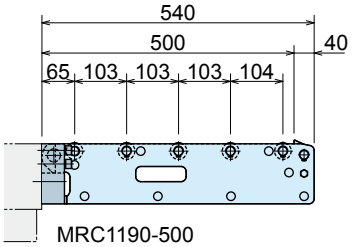
External dimensions of block
(MRC1190-B)



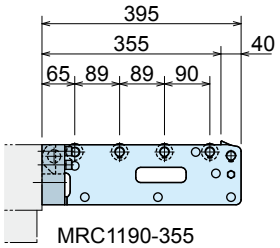
Enlarged view of B (end)



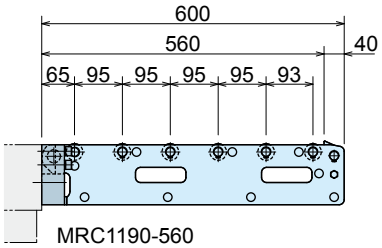
MRC1190-315



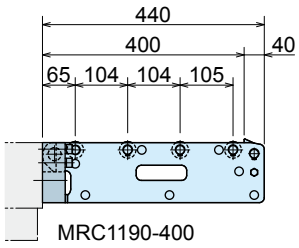
MRC1190-500



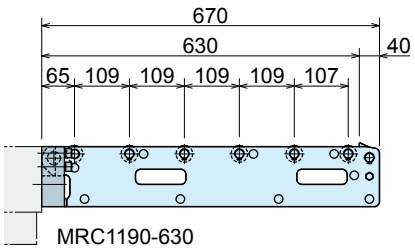
MRC1190-355



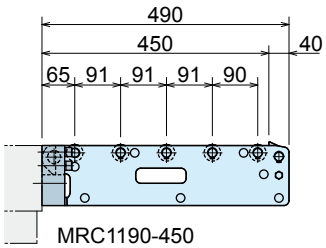
MRC1190-560



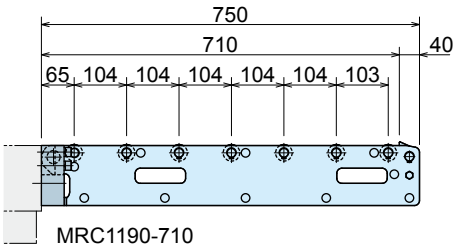
MRC1190-400



MRC1190-630

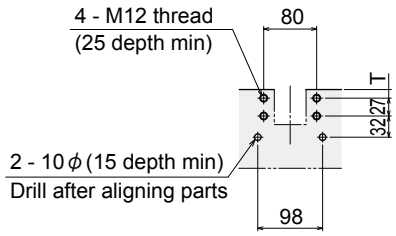


MRC1190-450

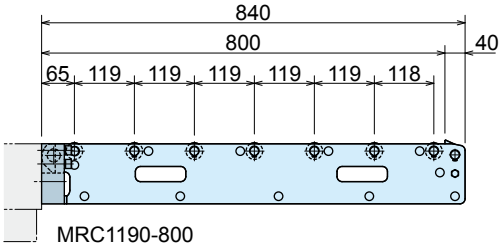


MRC1190-710

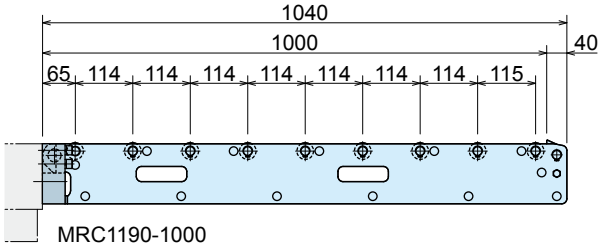
Block mounting diagram



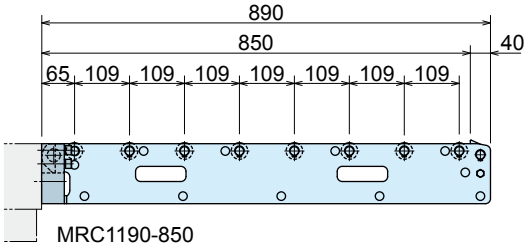
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		



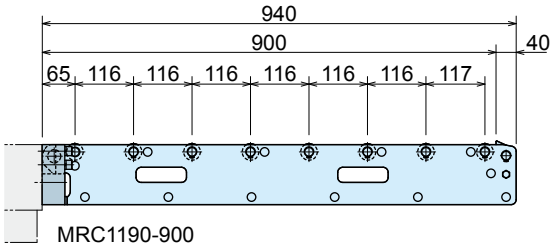
MRC1190-800



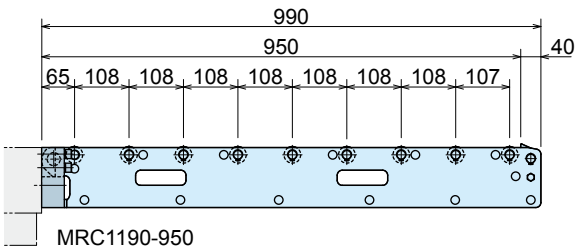
MRC1190-1000



MRC1190-850



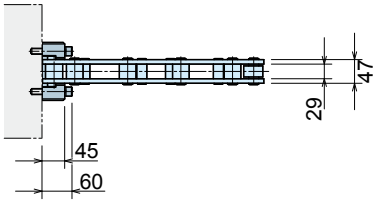
MRC1190-900



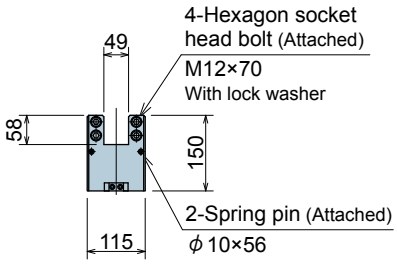
MRC1190-950

Removable pre-roller

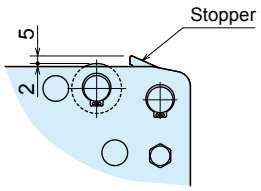
Outline Dimensions



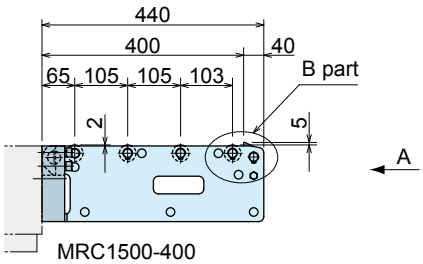
When setting pre-roller
(View A)



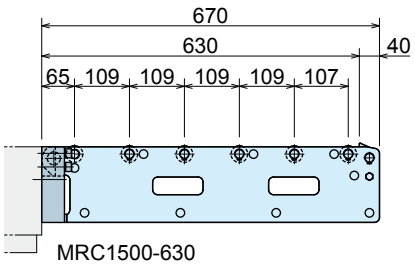
External dimensions of block
(MRC1500-B)



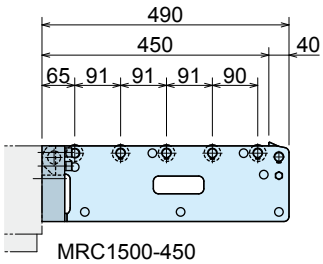
Enlarged view of B (end)



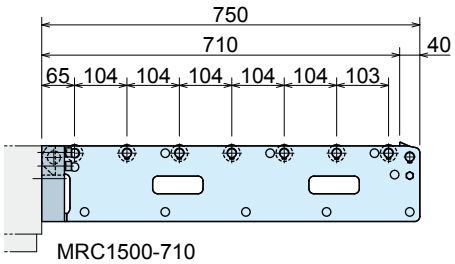
MRC1500-400



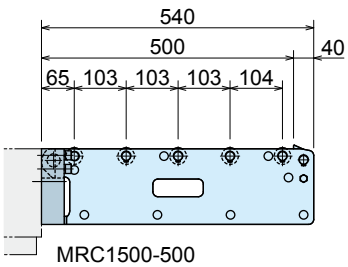
MRC1500-630



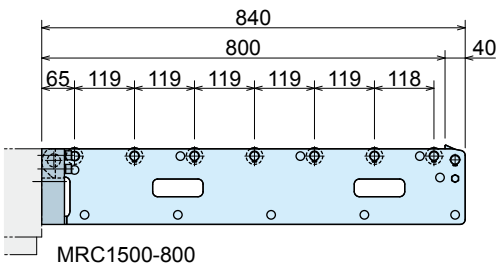
MRC1500-450



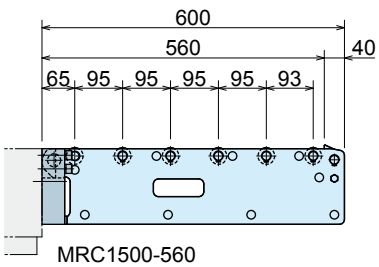
MRC1500-710



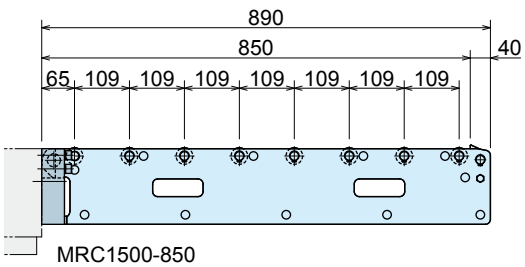
MRC1500-500



MRC1500-800

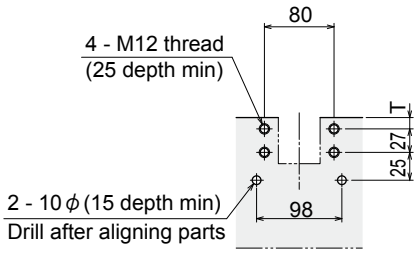


MRC1500-560

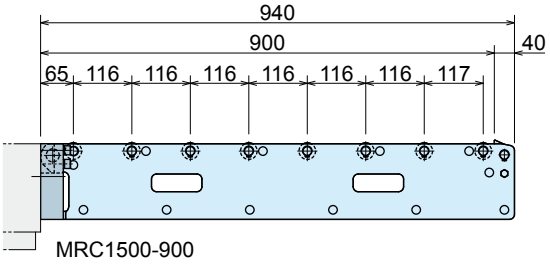


MRC1500-850

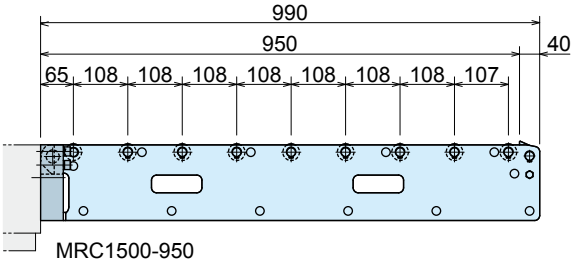
Block mounting diagram



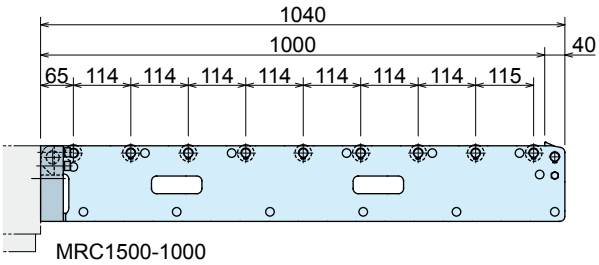
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		



MRC1500-900



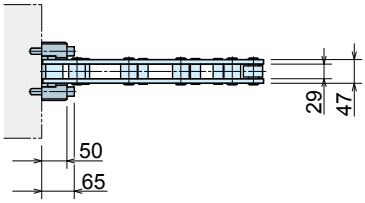
MRC1500-950

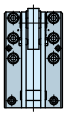


MRC1500-1000

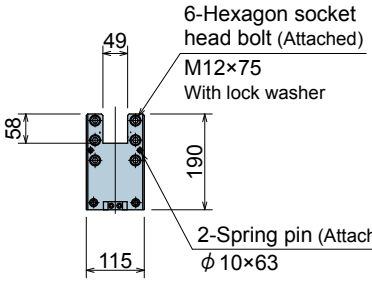
Removable pre-roller

Outline Dimensions

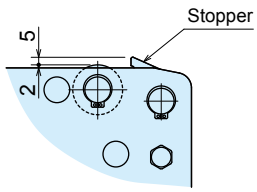




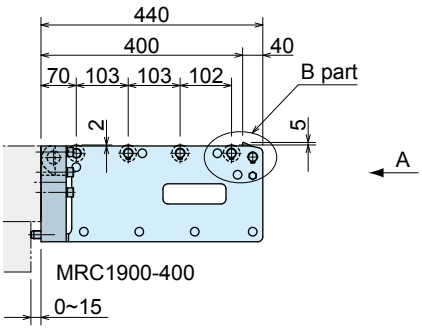
When setting pre-roller
(View A)



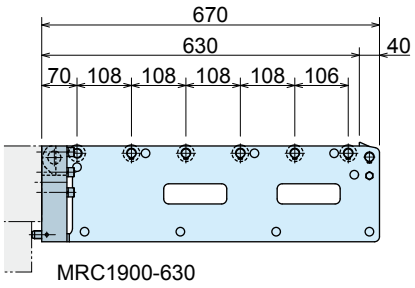
External dimensions of block]
(MRC1900-B)



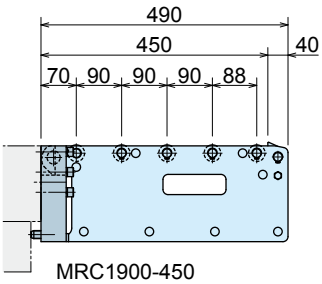
Enlarged view of B (end)



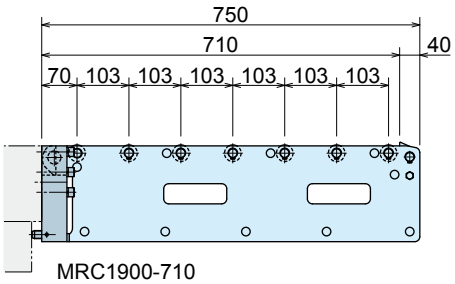
MRC1900-400



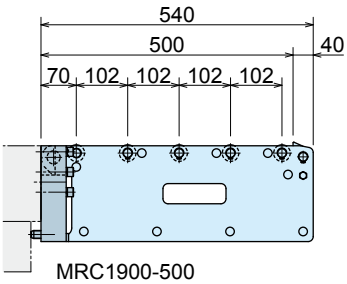
MRC1900-630



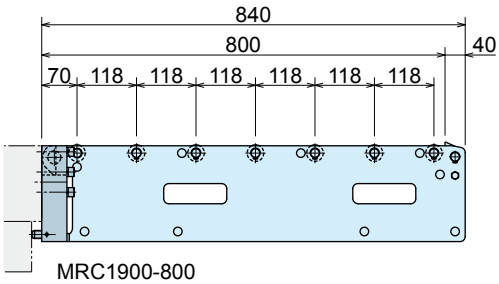
MRC1900-450



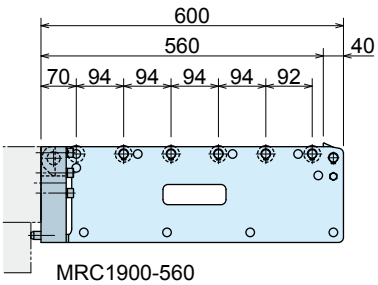
MRC1900-710



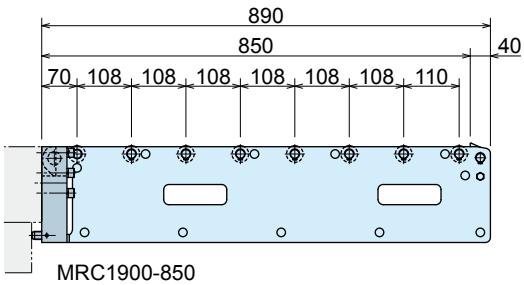
MRC1900-500



MRC1900-800

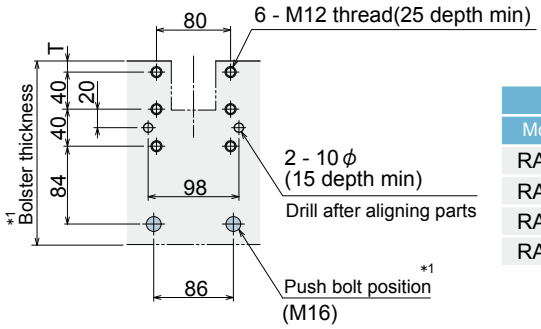


MRC1900-560



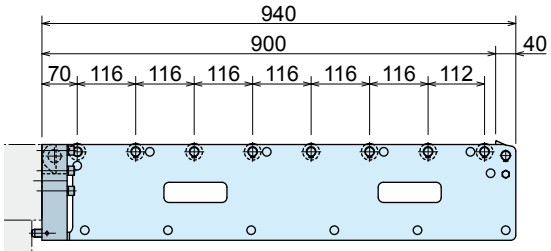
MRC1900-850

Block mounting diagram

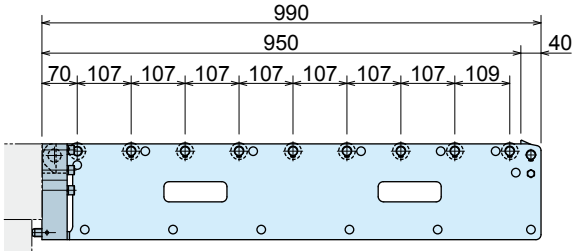


Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	12.5
RA022		
RA028	2	12
RA050		

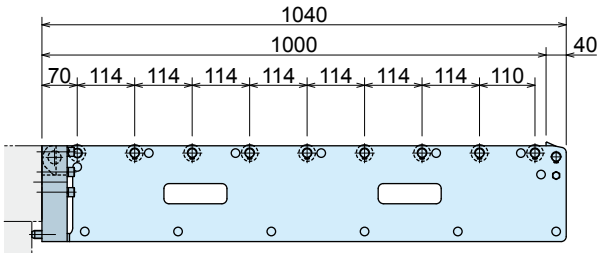
*1. If the bolster thickness is 160 mm or less, use a push bolt.



MRC1900-900



MRC1900-950



MRC1900-1000

Removable vertical folding type pre-roller

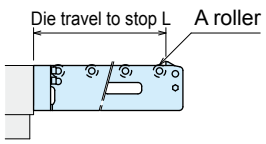
Specifications

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRD0750-200	3.0	3	200	850
MRD0750-250	3.5	3	250	650
MRD0750-315	4.3	4	315	500
MRD0750-355	4.8	4	355	450
MRD0750-400	5.3	5	400	400
MRD0750-450	5.8	5	450	350
MRD0750-500	6.4	6	500	300
MRD0750-560	7.1	6	560	270
MRD0750-630	8.0	7	630	240

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRD1190-315	6.7	3	315	1500
MRD1190-355	7.6	4	355	1300
MRD1190-400	8.4	4	400	1100
MRD1190-450	9.4	5	450	950
MRD1190-500	10.3	5	500	800
MRD1190-560	11.3	6	560	700
MRD1190-630	12.4	6	630	650
MRD1190-710	14.0	7	710	500
MRD1190-800	15.5	7	800	450
MRD1190-850	16.5	8	850	400
MRD1190-900	17.5	8	900	350
MRD1190-950	18.6	9	950	300
MRD1190-1000	19.5	9	1000	250

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRD1500-400	9.9	4	400	1500
MRD1500-450	11.2	5	450	1350
MRD1500-500	12.3	5	500	1200
MRD1500-560	13.4	6	560	1050
MRD1500-630	14.8	6	630	900
MRD1500-710	16.8	7	710	800
MRD1500-800	18.7	7	800	700
MRD1500-850	20.0	8	850	600
MRD1500-900	21.1	8	900	550
MRD1500-950	22.4	9	950	500
MRD1500-1000	23.5	9	1000	450

Model	Weight (kg)	Roller qty	Die travel L(mm)	Maximum load each(kg) (rated at Roller A)
MRD1900-400	11.9	4	400	2000
MRD1900-450	13.4	5	450	1800
MRD1900-500	14.8	5	500	1600
MRD1900-560	15.9	6	560	1400
MRD1900-630	17.8	6	630	1250
MRD1900-710	20.2	7	710	1100
MRD1900-800	22.6	7	800	950
MRD1900-850	24.2	8	850	850
MRD1900-900	25.6	8	900	800
MRD1900-950	27.2	9	950	750
MRD1900-1000	28.6	9	1000	700

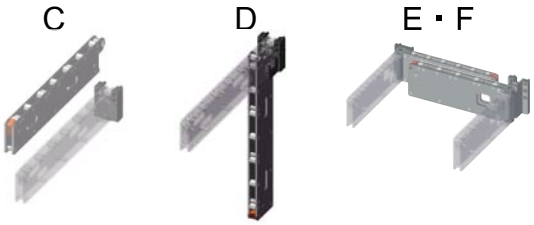


Model Code

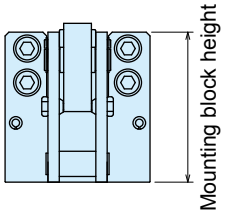
MR D 119 0 – 630
1 2 3 4

1 Frame storage type

C: Removable type…See p. 3-12
D: Removable vertical folding type
E: Horizontal folding type…See p. 23-30
F: Horizontal folding type…See p. 23-30



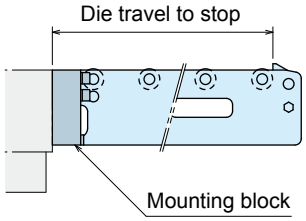
2 Mounting block height



3 Design No.

4 Die travel L(mm)/Mounting block type

Dimensions : Die travel to stop…
See specifications column
B : Mounting block



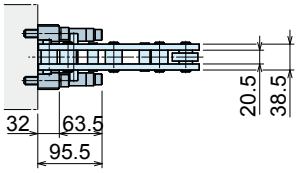
Compatible mounting blocks

Frame unit model	Compatible mounting block models	Weight (kg)
MRD0750-□	MRD0750-B	1.7
MRD1190-□	MRD1190-B	5.0
MRD1500-□	MRD1500-B	6.0
MRD1900-□	MRD1900-B	8.3

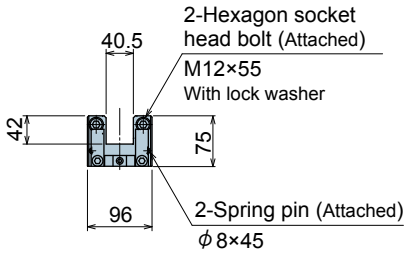
Notes
1. The MRD roller and MRD-B block are sold separately.
Order by type and number required.

Removable vertical folding type pre-roller

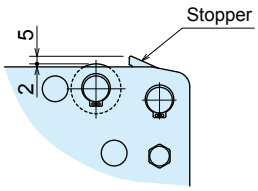
Outline Dimensions



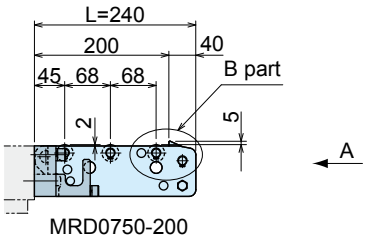
When setting pre-roller
(View A)



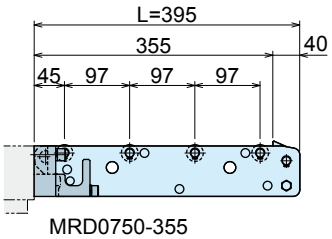
External dimensions of block
(MRD0750-B)



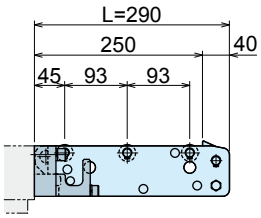
Enlarged view of B (end)



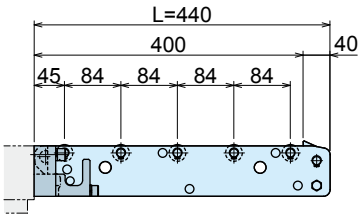
MRD0750-200



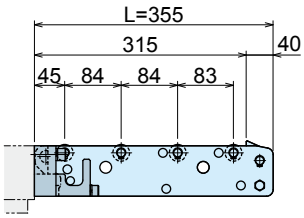
MRD0750-355



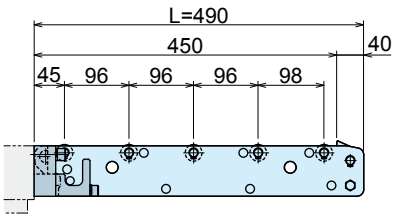
MRD0750-250



MRD0750-400

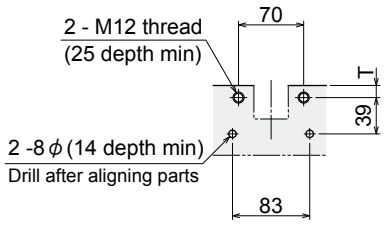


MRD0750-315



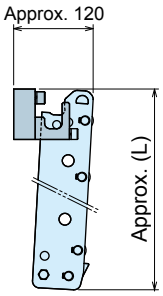
MRD0750-450

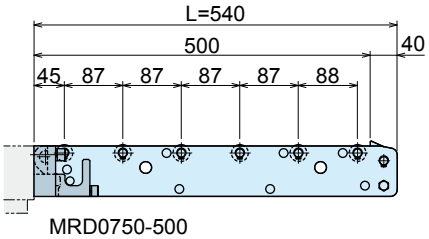
Block mounting diagram



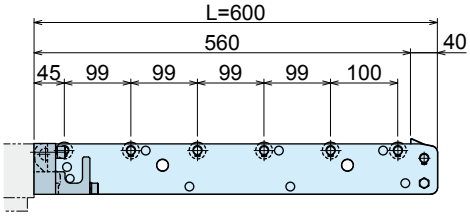
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		

○ Dimension when stowed

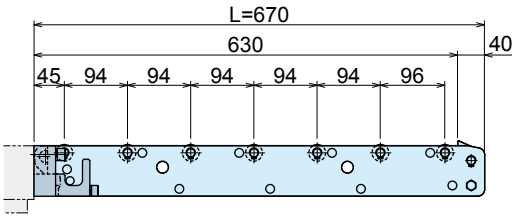




MRD0750-500



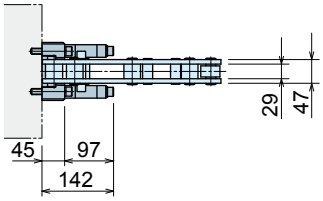
MRD0750-560



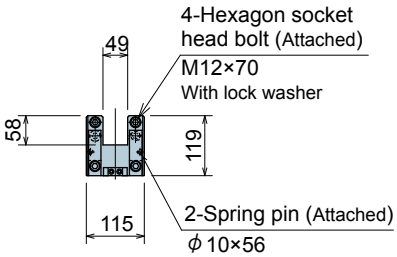
MRD0750-630

Removable vertical folding type pre-roller

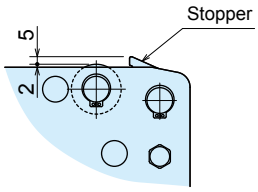
Outline Dimensions



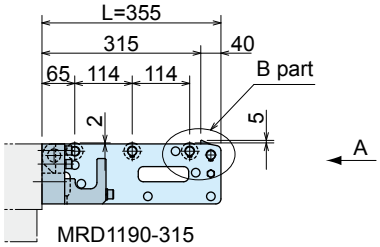
When setting pre-roller
(View A)



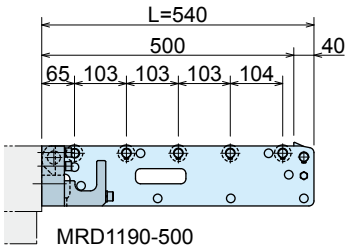
External dimensions of block
(MRD1190-B)



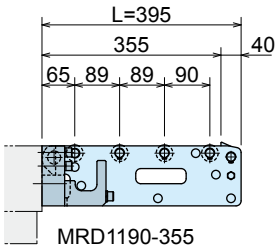
Enlarged view of B (end)



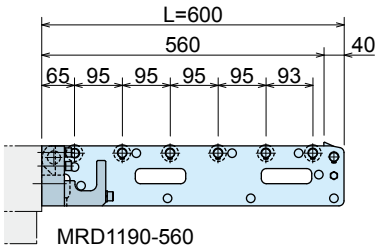
MRD1190-315



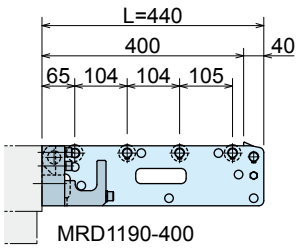
MRD1190-500



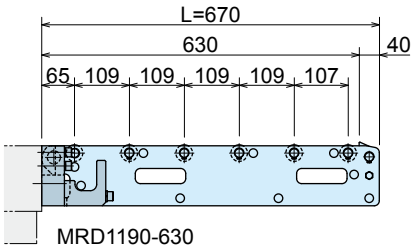
MRD1190-355



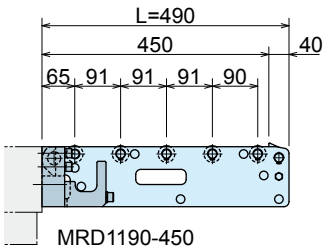
MRD1190-560



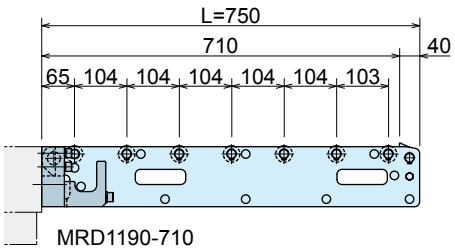
MRD1190-400



MRD1190-630

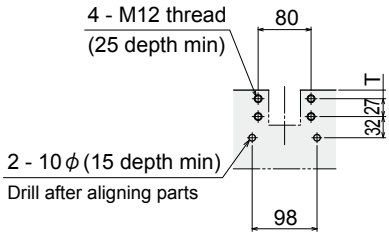


MRD1190-450



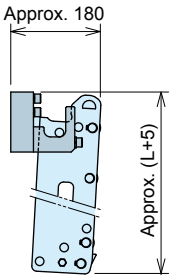
MRD1190-710

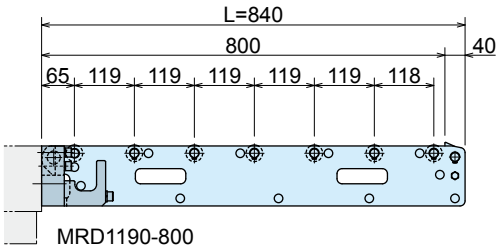
Block mounting diagram



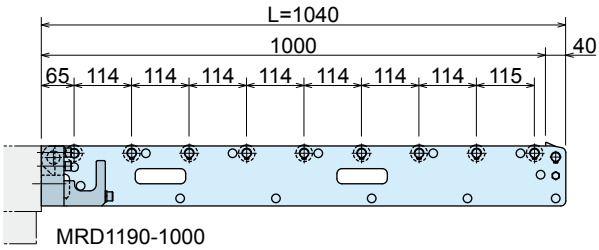
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		

○ Dimension when stowed

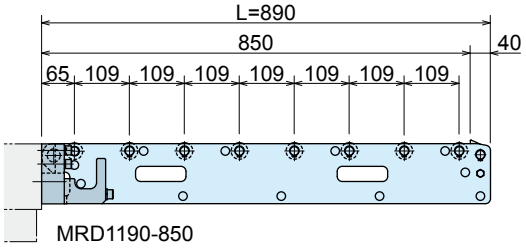




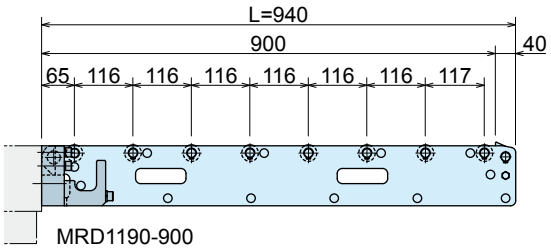
MRD1190-800



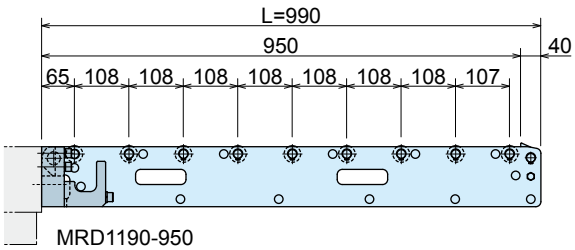
MRD1190-1000



MRD1190-850



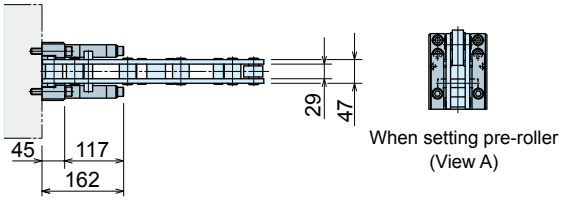
MRD1190-900



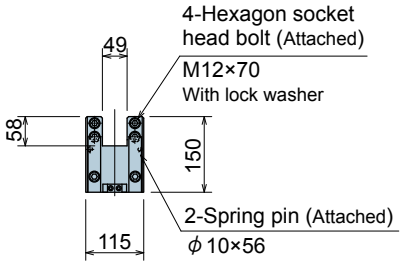
MRD1190-950

Removable vertical folding type pre-roller

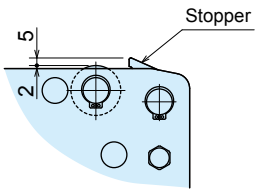
Outline Dimensions



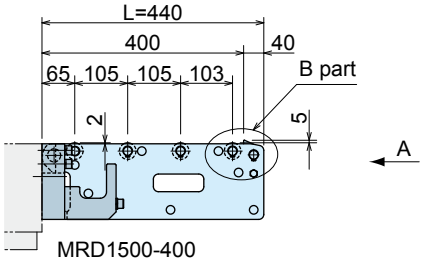
When setting pre-roller
(View A)



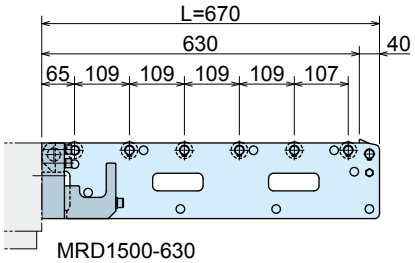
External dimensions of block
(MRD1500-B)



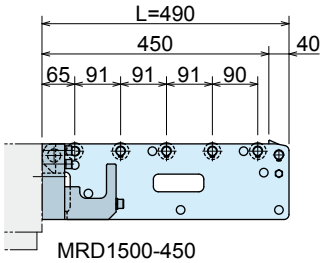
Enlarged view of B (end)



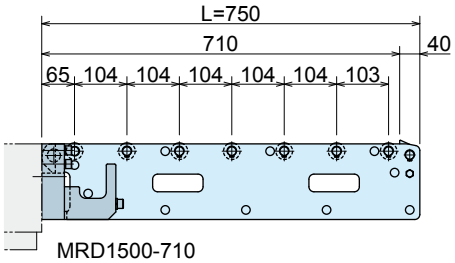
MRD1500-400



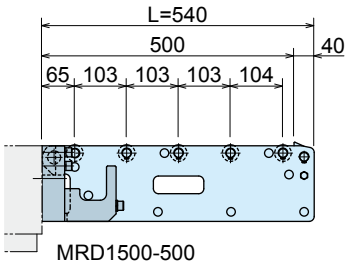
MRD1500-630



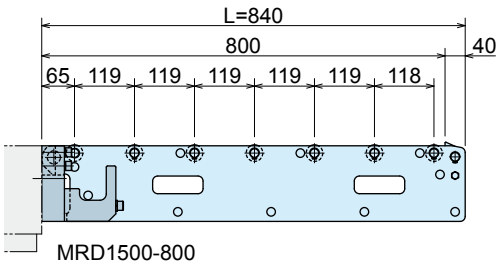
MRD1500-450



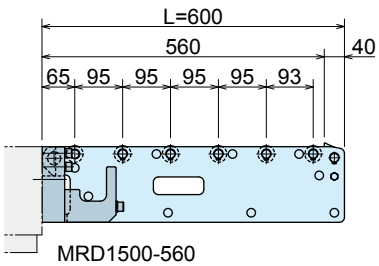
MRD1500-710



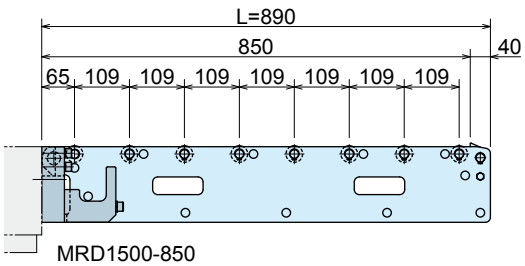
MRD1500-500



MRD1500-800

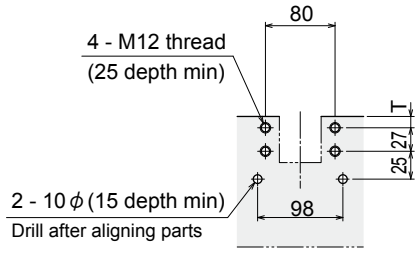


MRD1500-560



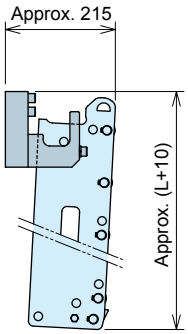
MRD1500-850

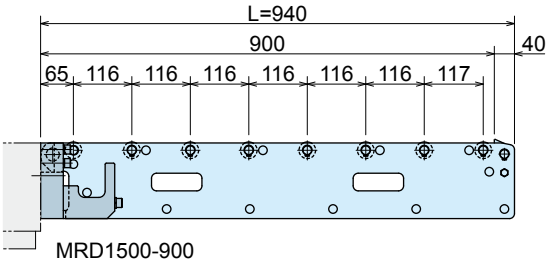
Block mounting diagram



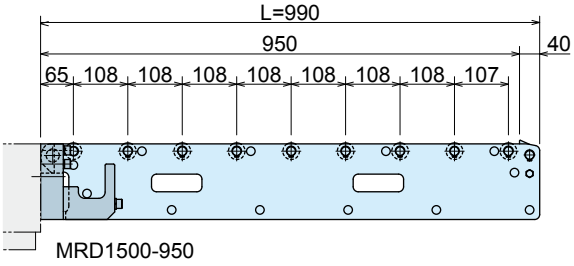
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		

○ Dimension when stowed

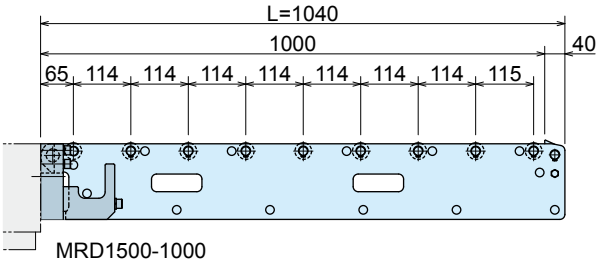




MRD1500-900



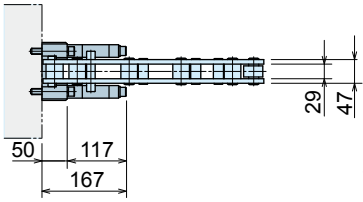
MRD1500-950

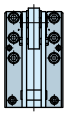


MRD1500-1000

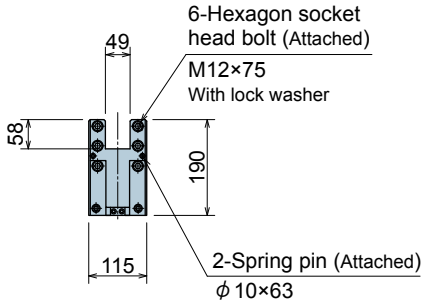
Removable vertical folding type pre-roller

Outline Dimensions

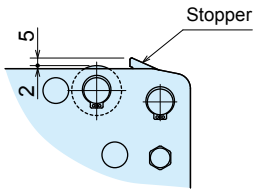




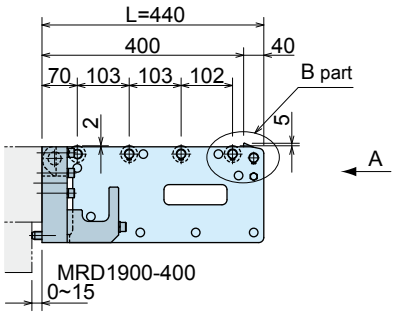
When setting pre-roller
(View A)



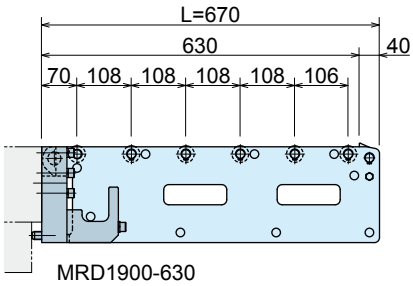
External dimensions of block
(MRD1900-B)



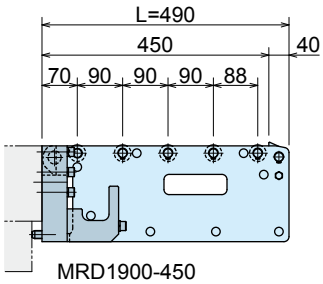
Enlarged view of B (end)



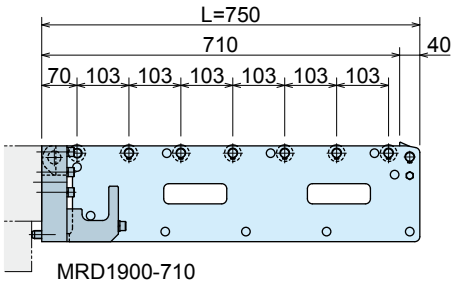
MRD1900-400



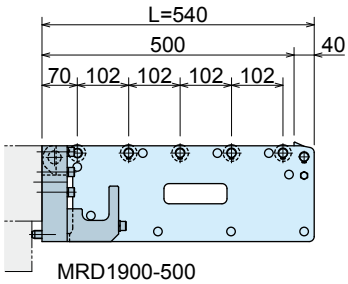
MRD1900-630



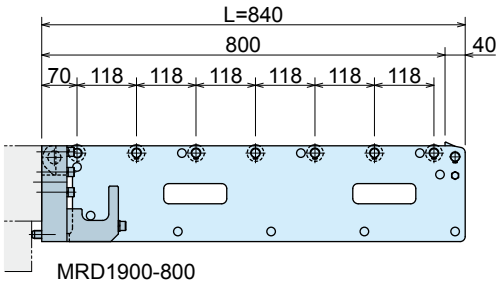
MRD1900-450



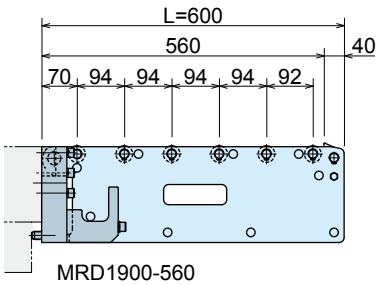
MRD1900-710



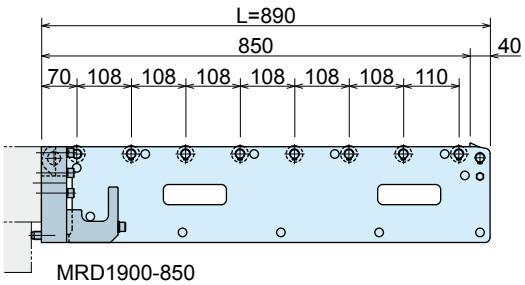
MRD1900-500



MRD1900-800

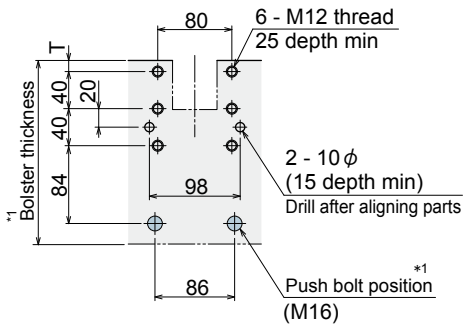


MRD1900-560



MRD1900-850

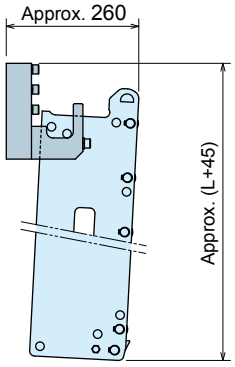
Block mounting diagram

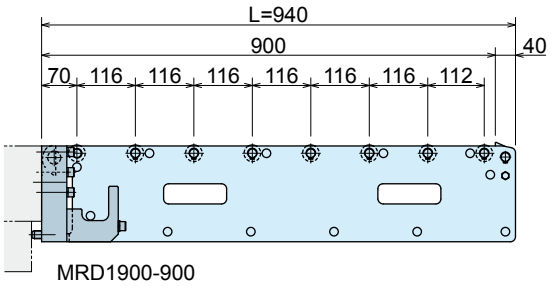


Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	12.5
RA022		
RA028	2	12
RA050		

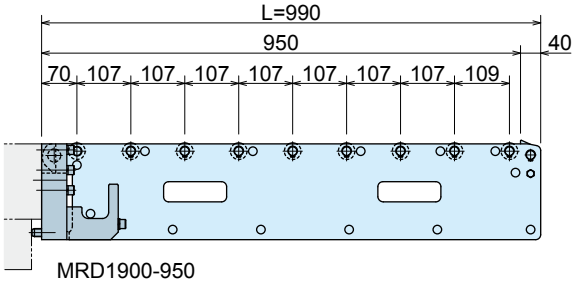
*1. If the bolster thickness is 160 mm or less, use a push bolt.

○ Dimension when stowed

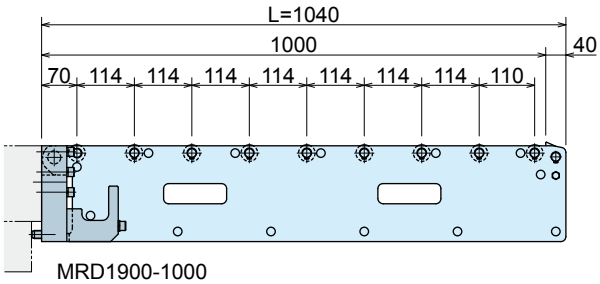




MRD1900-900



MRD1900-950



MRD1900-1000

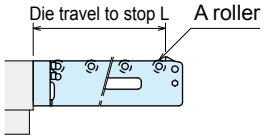
Horizontal folding type pre-roller

Specifications

MRE			MRF			Die travel L (mm)	Maximum load each(kg) (rated at Roller A)
Model	Weight (kg)	Roller qty	Model	Weight (kg)	Roller qty		
MRE1190-315	11.3	3	MRF1190-315	12.5	3	315	1500
MRE1190-355	12.1	3	MRF1190-355	13.3	4	355	1400
MRE1190-400	13.0	4	MRF1190-400	14.1	4	400	1200
MRE1190-450	13.8	4	MRF1190-450	15.2	5	450	1000
MRE1190-500	14.9	5	MRF1190-500	16.1	5	500	850
MRE1190-560	15.5	5	MRF1190-560	16.9	6	560	750
MRE1190-630	17.0	6	MRF1190-630	18.1	6	630	650
MRE1190-710	18.3	6	MRF1190-710	19.6	7	710	550

MRE			MRF			Die travel L (mm)	Maximum load each(kg) (rated at Roller A)
Model	Weight (kg)	Roller qty	Model	Weight (kg)	Roller qty		
MRE1900-500	23.1	5	MRF1900-500	25.4	5	500	1600
MRE1900-560	24.3	5	MRF1900-560	26.5	6	560	1400
MRE1900-630	26.4	6	MRF1900-630	28.6	6	630	1250
MRE1900-710	28.5	6	MRF1900-710	30.8	7	710	1100
MRE1900-800	31.3	7	MRF1900-800	33.6	8	800	950
MRE1900-850	32.8	8	MRF1900-850	34.9	8	850	850
MRE1900-900	34.1	8	MRF1900-900	36.4	9	900	800
MRE1900-950	35.8	9	MRF1900-950	37.8	9	950	750
MRE1900-1000	37.1	9	MRF1900-1000	39.1	10	1000	700

MRE			MRF			Die travel L (mm)	Maximum load each(kg) (rated at Roller A)
Model	Weight (kg)	Roller qty	Model	Weight (kg)	Roller qty		
MRE2950-630	34.6	6	MRF2950-630	39.6	6	630	2000
MRE2950-710	36.4	6	MRF2950-710	41.3	7	710	1750
MRE2950-800	38.6	7	MRF2950-800	43.5	8	800	1500
MRE2950-850	40.0	8	MRF2950-850	44.8	8	850	1400
MRE2950-900	41.1	8	MRF2950-900	45.9	9	900	1300
MRE2950-950	42.4	9	MRF2950-950	47.2	9	950	1200
MRE2950-1000	44.4	9	MRF2950-1000	48.3	9	1000	1100

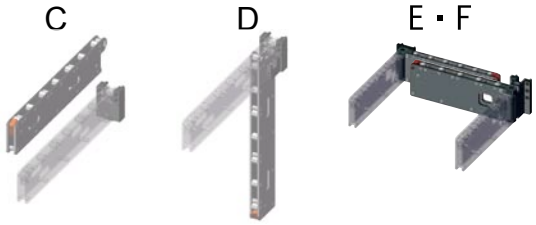


Model Code

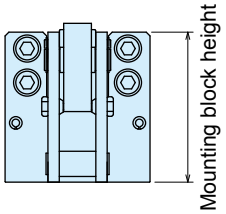
MR [E] [119] [0] – [630]
1 2 3 4

1 Frame storage type

C: Removable type…See p. 3-12
D: Removable vertical folding type
…See p. 13-22
E: Horizontal folding type
F: Horizontal folding type



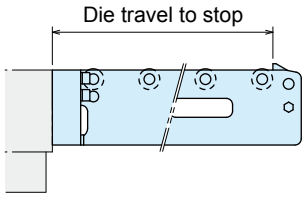
2 Mounting block height



3 Design No.

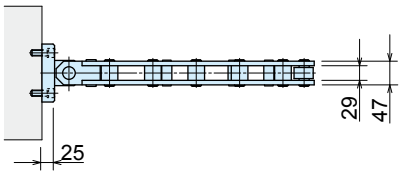
4 Die travel L (mm)/Mounting block type

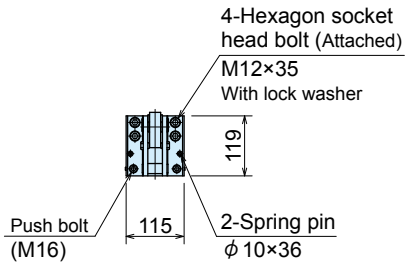
Dimensions : Die travel to stop…
See specifications column



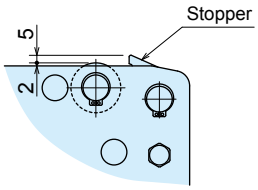
Horizontal folding type pre-roller

Outline Dimensions

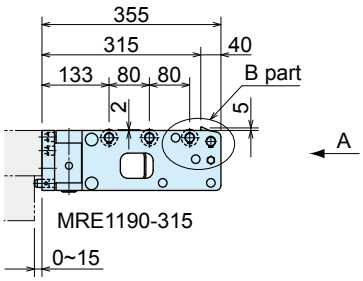




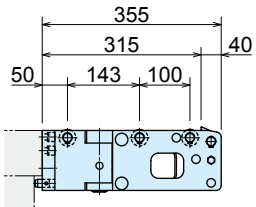
External dimensions of block
(Same for MRE and MRF)
View A



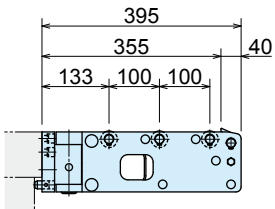
Enlarged view of B (end)



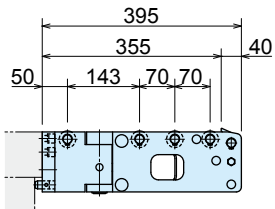
MRE1190-315



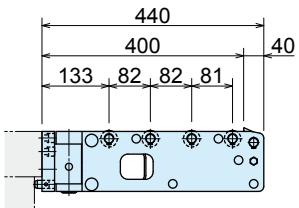
MRF1190-315



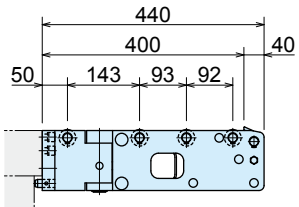
MRE1190-355



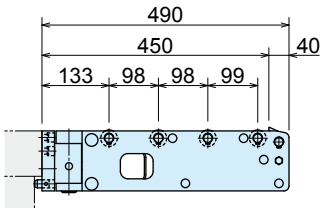
MRF1190-355



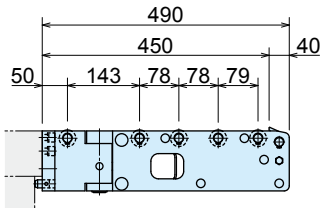
MRE1190-400



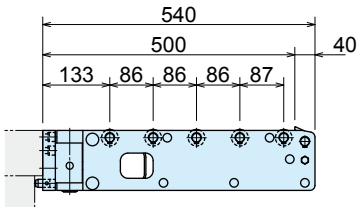
MRF1190-400



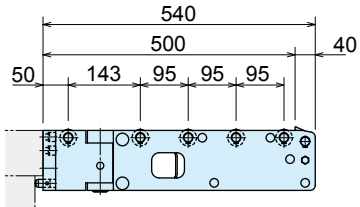
MRE1190-450



MRF1190-450

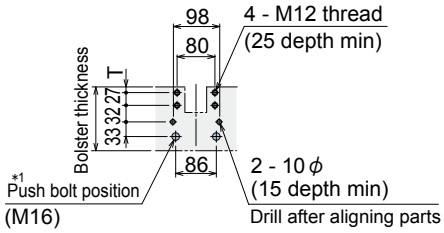


MRE1190-500



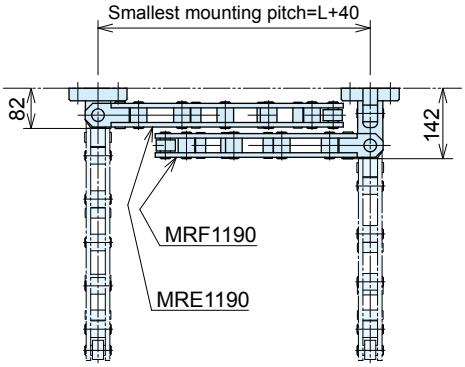
MRF1190-500

Mounting diagram



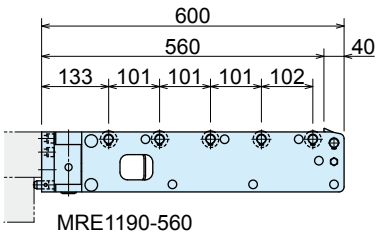
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	13.5
RA022		
RA028	2	13
RA050		

○ Dimension when stowed

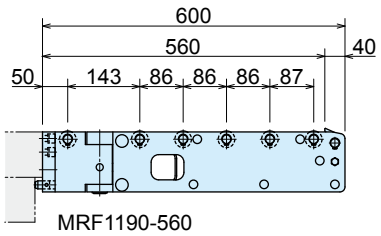


*1. If the bolster thickness is 100 mm or less, use a push bolt.

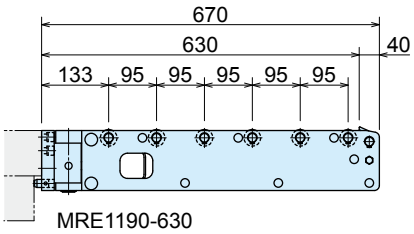
MRE and MRF can swing to both the left and right.



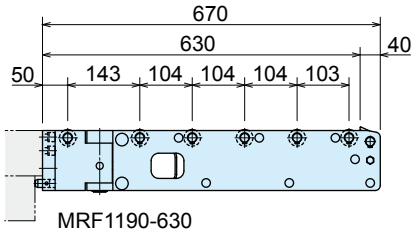
MRE1190-560



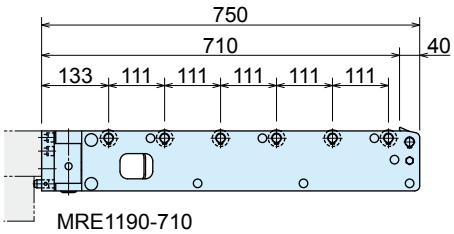
MRF1190-560



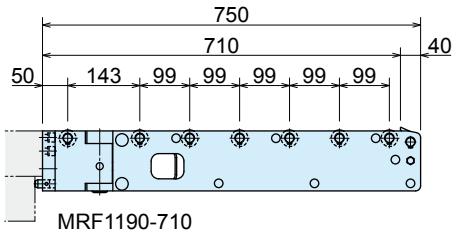
MRE1190-630



MRF1190-630



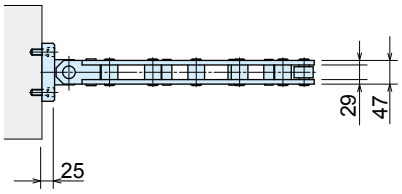
MRE1190-710

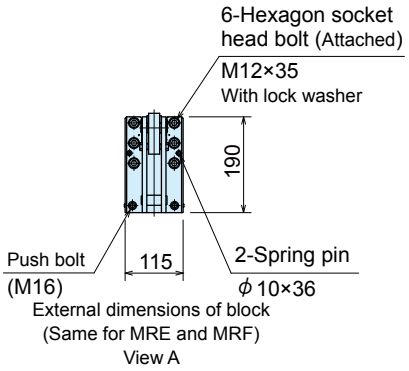


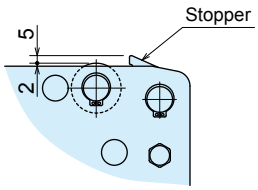
MRF1190-710

Horizontal folding type pre-roller

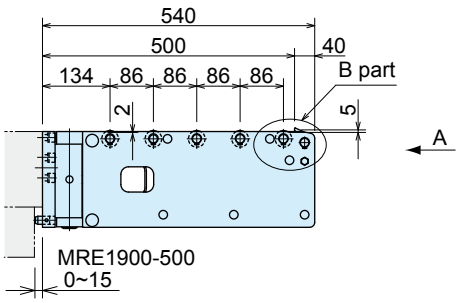
Outline Dimensions



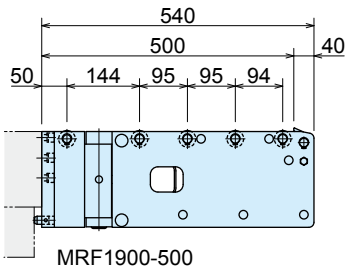




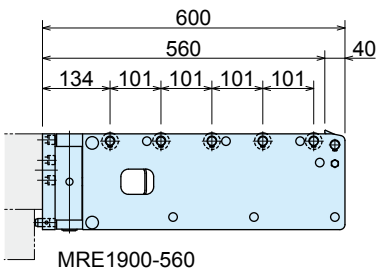
Enlarged view of B (end)



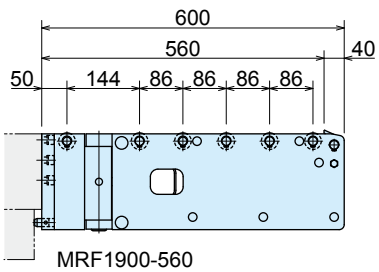
MRE1900-500



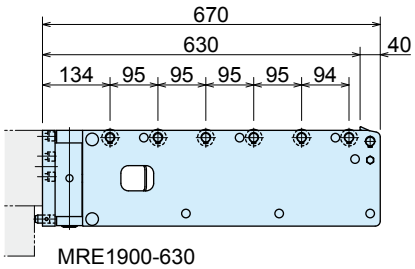
MRF1900-500



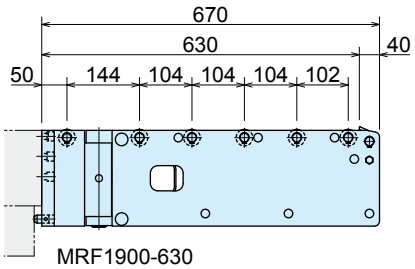
MRE1900-560



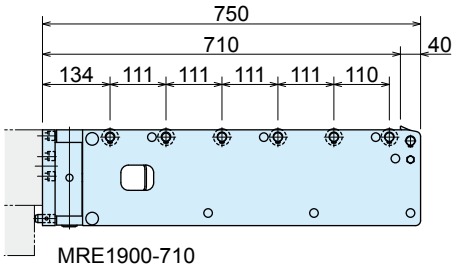
MRF1900-560



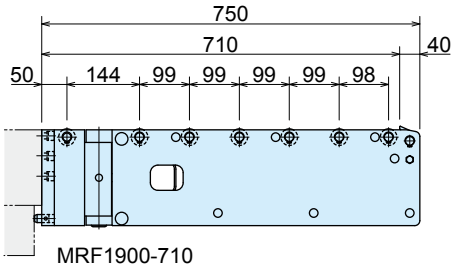
MRE1900-630



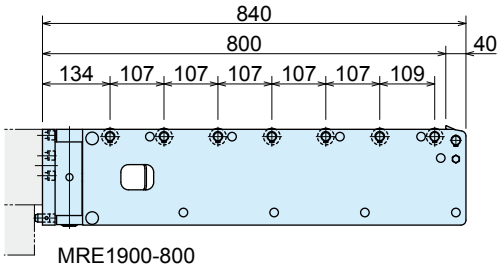
MRF1900-630



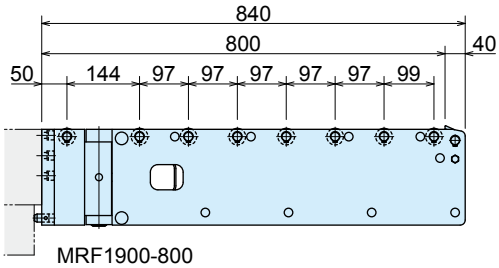
MRE1900-710



MRF1900-710

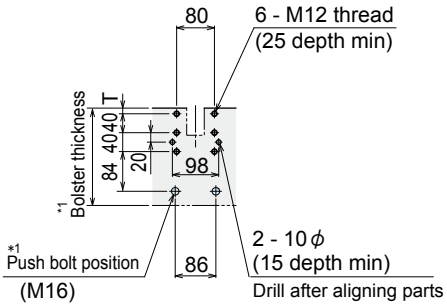


MRE1900-800



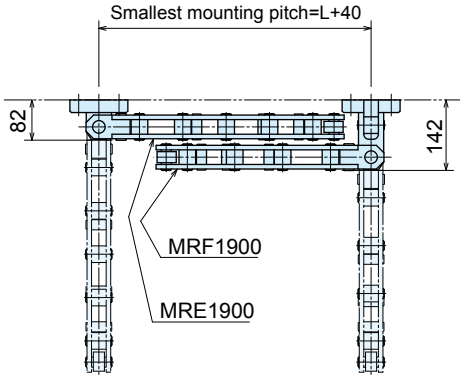
MRF1900-800

Mounting diagram



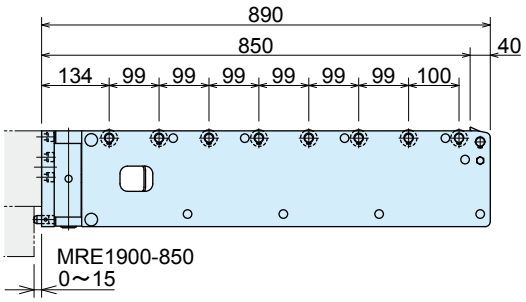
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	12.5
RA022		
RA028	2	12
RA050		

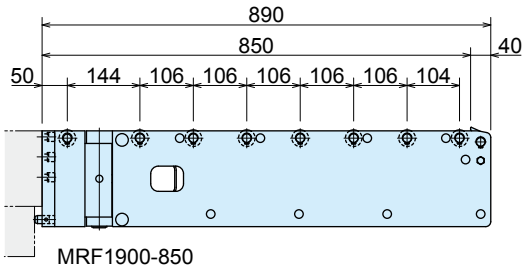
○ Dimension when stowed

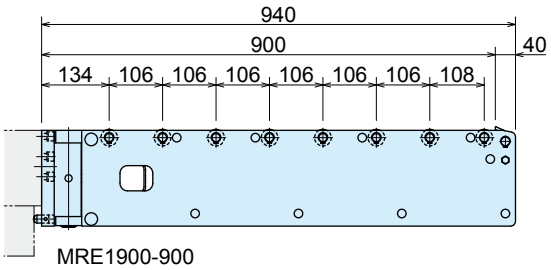


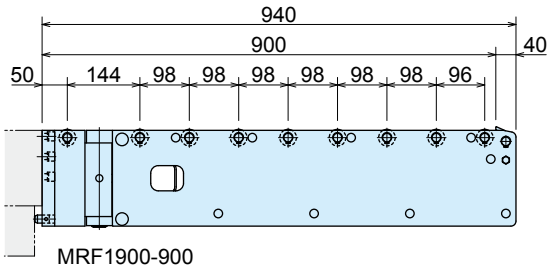
*1. If the bolster thickness is 160 mm or less, use a push bolt.

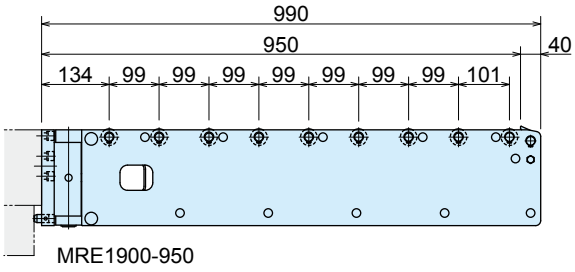
MRE and MRF can swing to both the left and right.

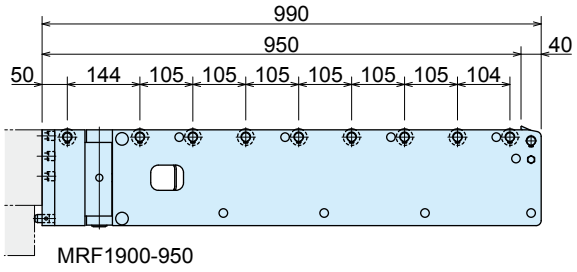


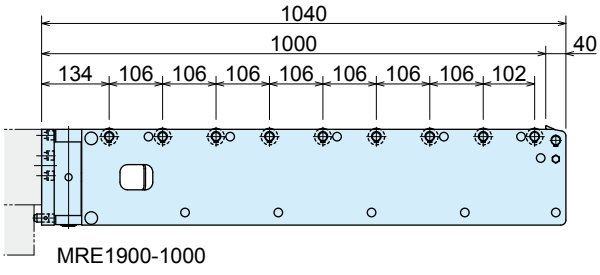


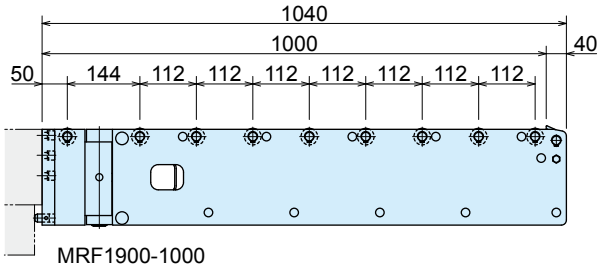






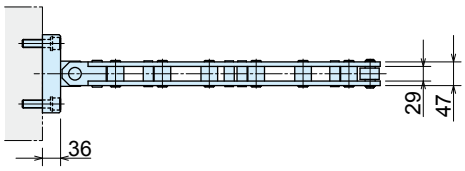


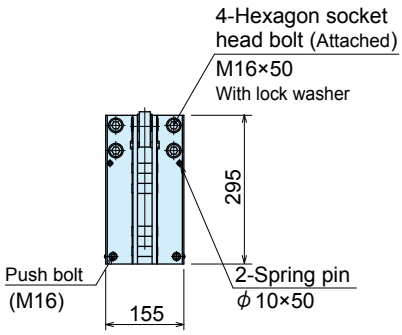




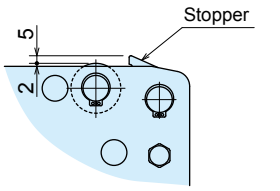
Horizontal folding type pre-roller

Outline Dimensions

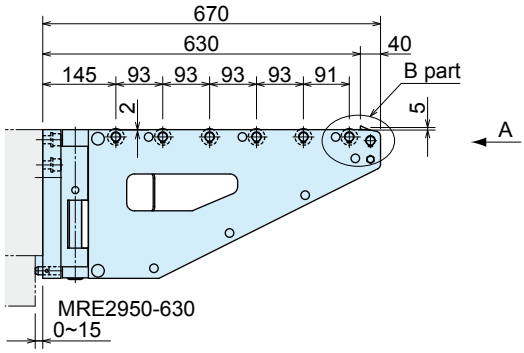




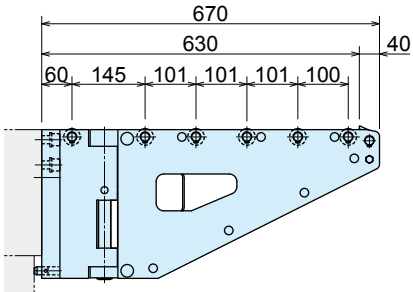
External dimensions of block
(Same for MRE and MRF)
View A



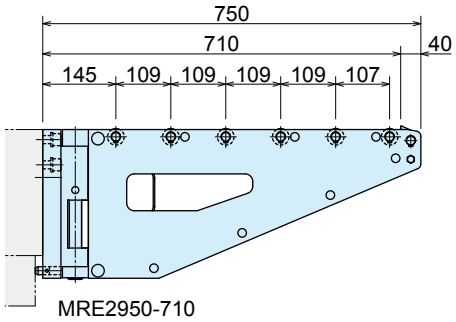
Enlarged view of B (end)



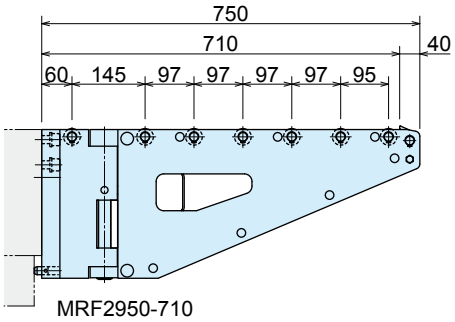
MRE2950-630



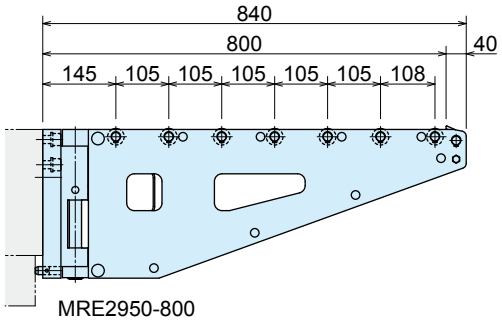
MRF2950-630



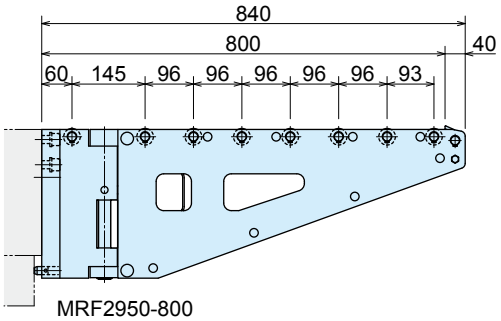
MRE2950-710



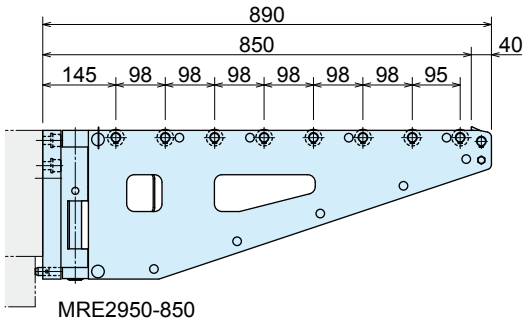
MRF2950-710



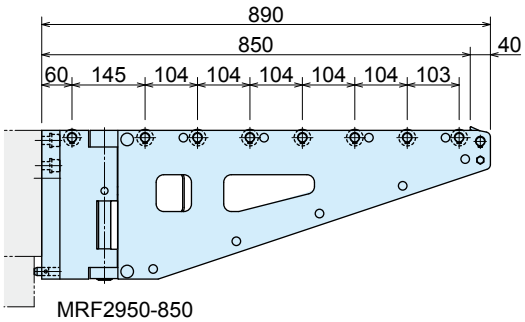
MRE2950-800



MRF2950-800

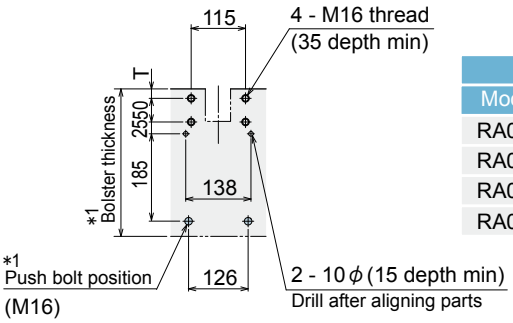


MRE2950-850



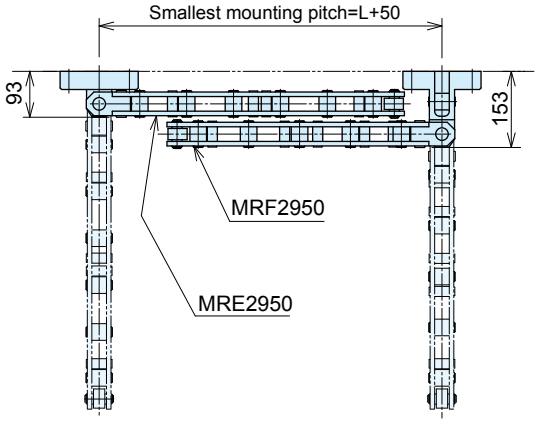
MRF2950-850

Mounting diagram



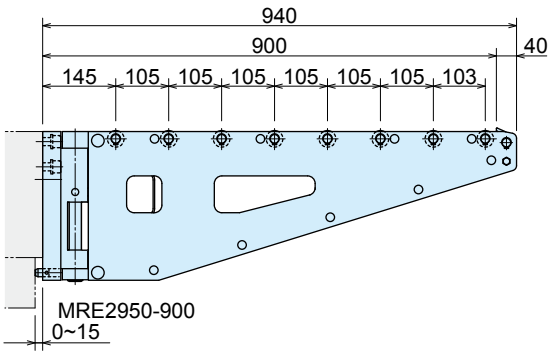
Die lifter		T dimension
Model	Lift stroke	
RA018	1.5	20.5
RA022		
RA028	2	20
RA050		

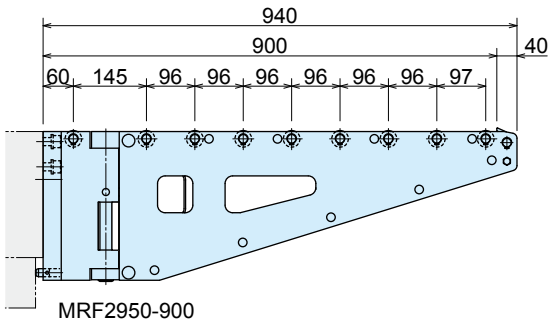
○ Dimension when stowed

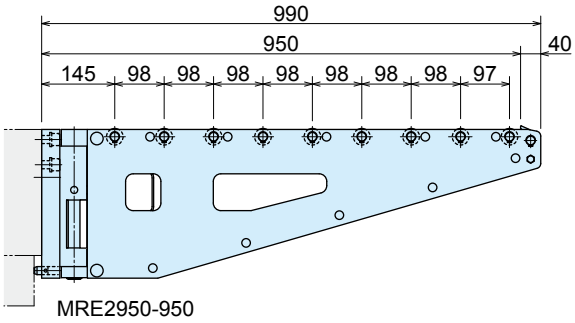


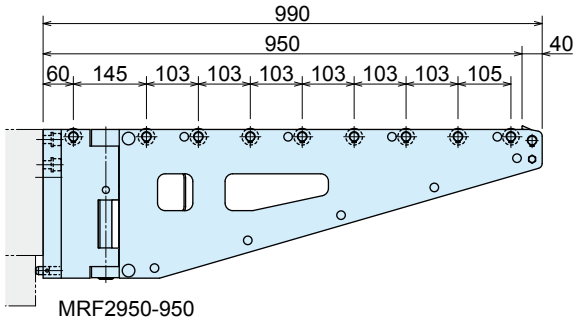
*1. If the bolster thickness is 245 mm or less, use a push bolt.

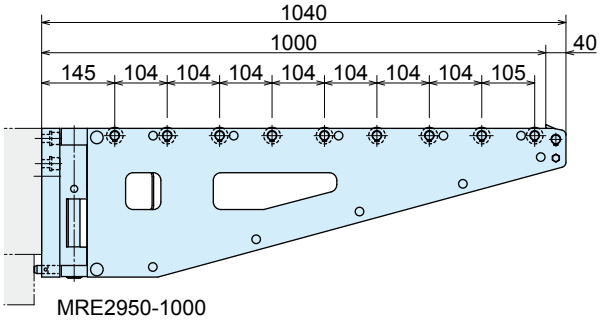
MRE and MRF can swing to both the left and right.

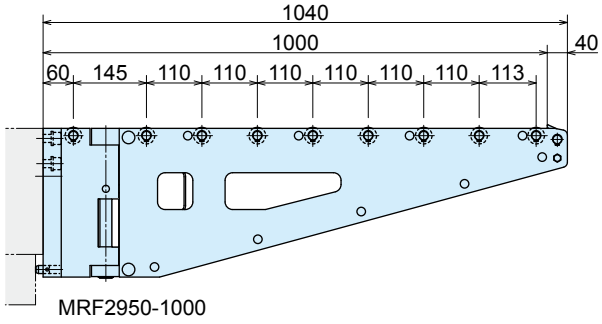










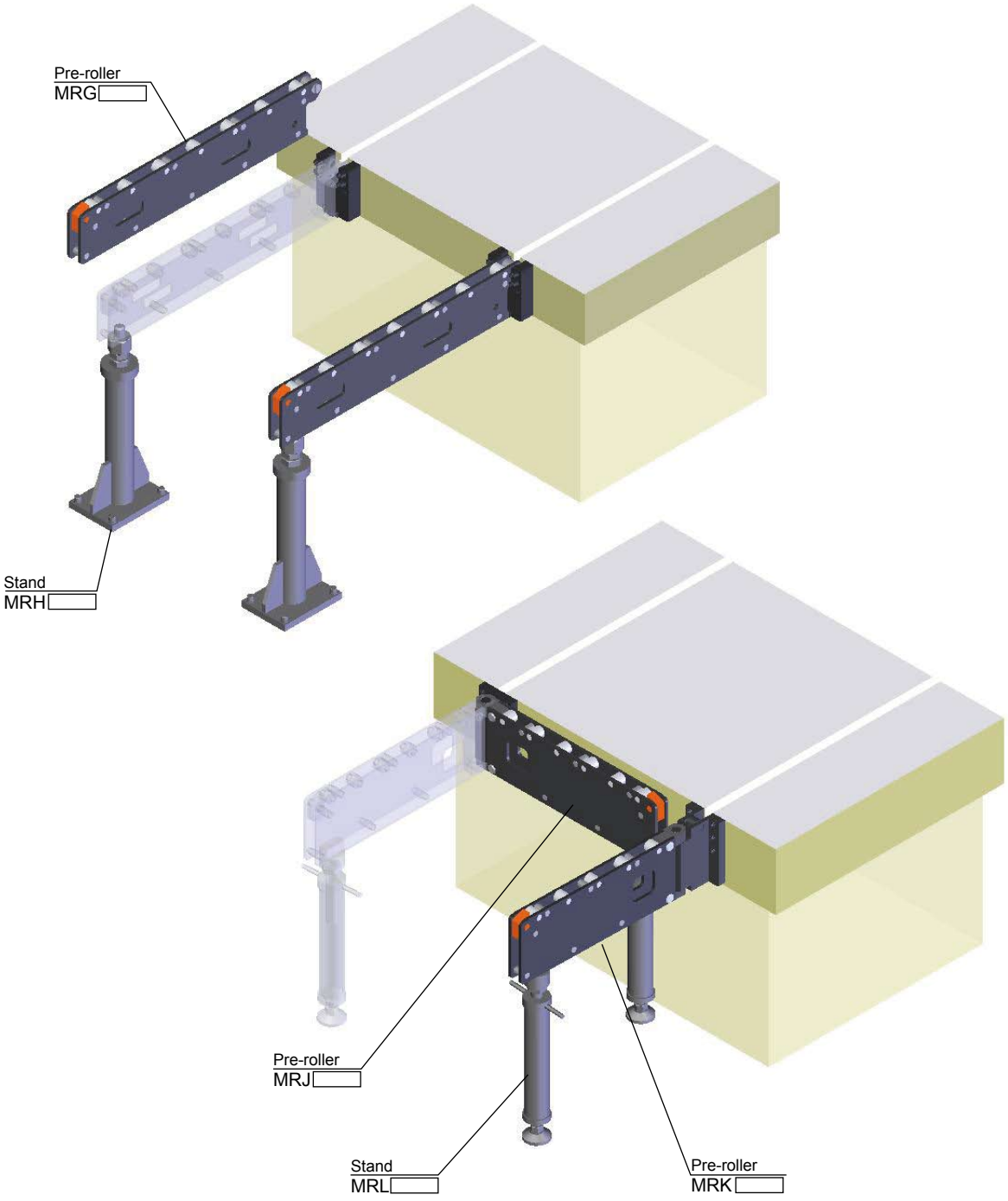


Pre-roller spacer block and stand

Pre-roller with stand

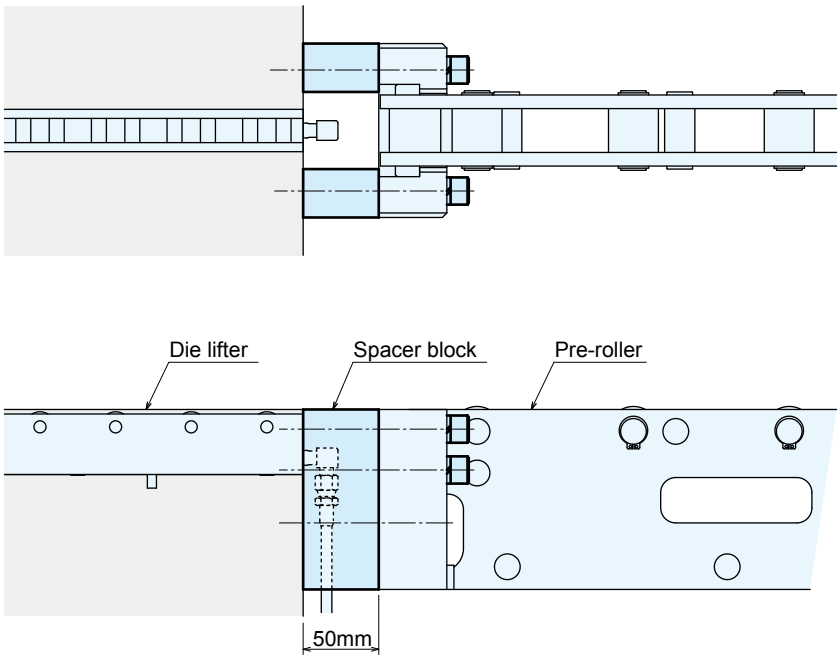
Contact a salesperson for further details.

Storage type	Pre-roller type	Stand type
Removable type	MRG	MRH
Horizontal folding type	MRJ/MRK	MRL



Spacer block

Provides clearance for hydraulic lines if installed on load/unload side.



●Compatible spacer blocks

Spacer block model	Compatible pre-roller block models*1	
MRC0750-S	MRC0750-□	MRC0750-B-S
	MRD0750-□	MRD0750-B-S
MRC1190-S	MRC1190-□	MRC1190-B-S
	MRD1190-□	MRD1190-B-S
MRC1500-S	MRC1500-□	MRC1500-B-S
	MRD1500-□	MRD1500-B-S
MRC1900-S	MRC1900-□	MRC1900-B-S
	MRD1900-□	MRD1900-B-S
MRE1190-S	MRE1190-□-S	
	MRF1190-□-S	
MRE1900-S	MRE1900-□-S	
	MRF1900-□-S	
MRE2950-S	MRE2950-□-S	
	MRF2950-□-S	

Remarks

*1: When using a spacer, the types of pre-roller and mounting block that can be used are those in the chart above. The MRE and MRF mounting blocks are included in the pre-roller type.

Hydraulic die lifter

Specifications

Model				RA0180	RA0220	RA0280	RA0500	RA0800
Applicable slot dimensions	Width: $^{+0.25}_{+0.05}$		mm	18	22	28	50	80
	Depth: $^{+0.5}_{0}$ *1		mm	31 34	36 39	43	53	80
Full stroke			mm	2.2	2.2	3	3	4
Lift stroke			mm	1.5	1.5	2	2	3
Allowable die weight per roller kg *2 *3	SS400 *4	Flat roller		25	45	80	200	500
		crowned roller		17.5	30	50	110	-
	S45C, FC25	Flat roller		45	80	140	350	800
		crowned roller		30	50	90	200	-
Lifting force (per cylinder)			kN	2.2	3.8	4.9	11.1	24.5
Cylinder capacity (per cylinder)			cm^3	0.2	0.34	0.6	1.4	4.1
Hydraulic port				Rc1/8			Rc1/4	
Normal hydraulic pressure			MPa	24.5				
Operating temperature			℃	0~70				
Frequency of use				20 times/day or less				

Remarks

∗1. RA0180 and RA0220 are available with two mounting depths.

∗2. The number of rollers and cylinders per die lifter varies depending on the total length of the die lifter.
See p. 35-44 for the dimensions.

∗3. The listed weight is based on bottom of die (rolling surface) hardness.

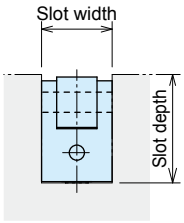
∗4. Shows the die material.

Model Code

RA0 [18] [0] – [138] – [F31] – [P38] – [J]

1 2 3 4 5 6

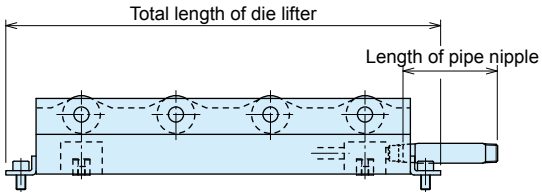
1 Applicable slot width



2 Design No.

3 Total length of die lifter

See p. 35-43 for details.



4 Applicable slot depth

Dimension F: Slot depth

* Only RA0180 and RA0220 have selectable depths

5 Length of pipe nipple

Dimension	:	Standard pipe nipple length (Select from 50,75,100,125,150)
E	:	No pipe nipple
Dimension P	:	Special pipe nipple length (Specify the dimensions by 1mm unit from 25 to 149mm.

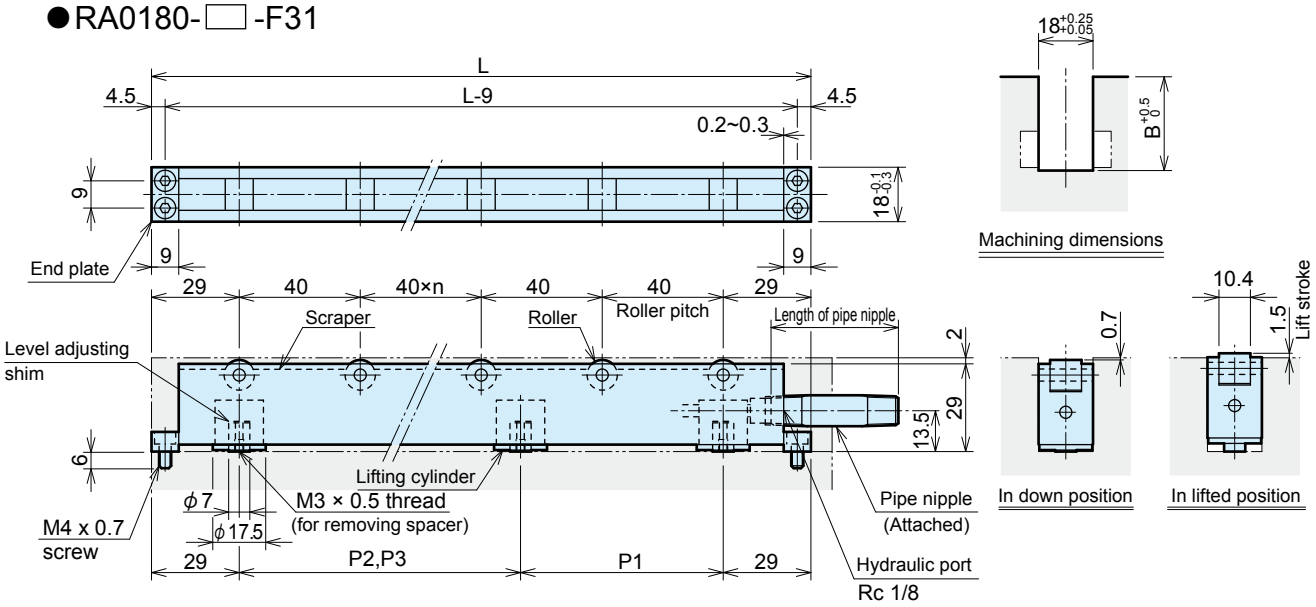
6 Option models

No code	:	Standard
G	:	Pin specifications
J	:	Crowning roller specifications
N	:	Hydraulic port NPT specifications
S	:	Long stroke specifications
V	:	High temperature specifications (0-120˚C)

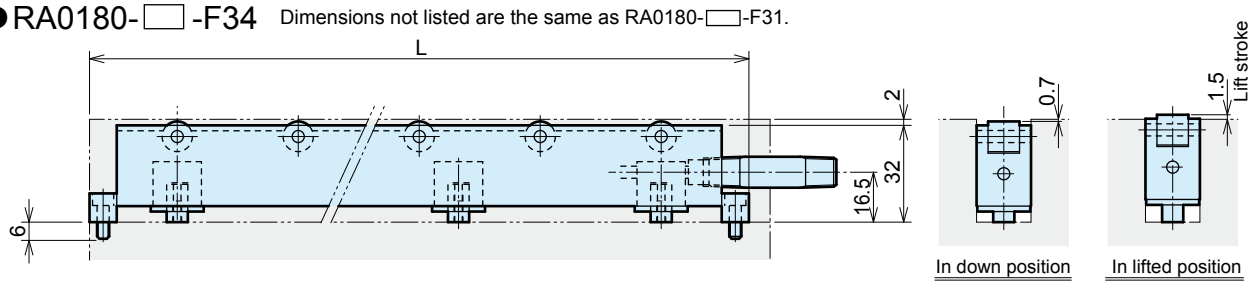
See p. 45-46 for details.

Outline Dimensions

● RA0180-□-F31



● RA0180-□-F34 Dimensions not listed are the same as RA0180-□-F31.



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)		
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3
RA0180-138	138	3	75	135	2	4.4	80		
RA0180-178	178	4	100	180			120		
RA0180-218	218	5	125	225			160		
RA0180-258	258	6	150	270			200		
RA0180-298	298	7	175	315			240		
RA0180-338	338	8	200	360			280		
RA0180-378	378	9	225	405	3	6.6	160	160	
RA0180-418	418	10	250	450			180	180	
RA0180-458	458	11	275	495			200	200	
RA0180-498	498	12	300	540			220	220	
RA0180-538	538	13	325	585			240	240	
RA0180-578	578	14	350	630			260	260	
RA0180-618	618	15	375	675	4	8.8	185	190	185
RA0180-658	658	16	400	720			200	200	200
RA0180-698	698	17	425	765			210	220	210

● Machined slot depth

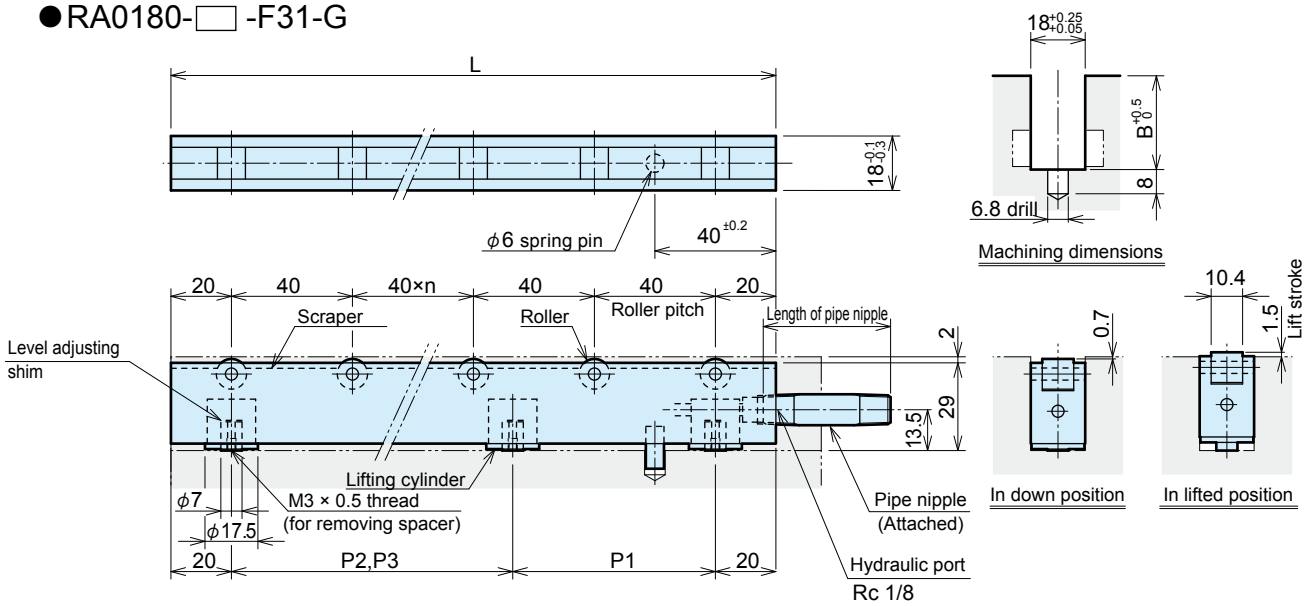
Model	slot depth (B)
F31	31
F34	34

Remarks

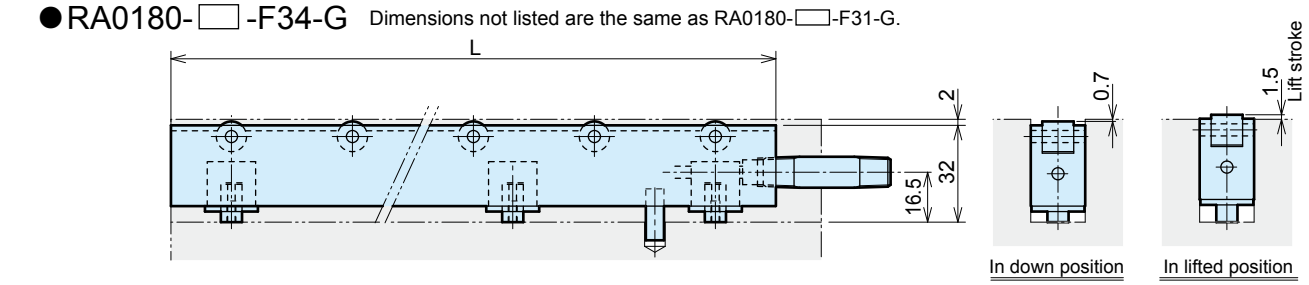
*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Outline Dimensions

● RA0180-□ -F31-G



● RA0180-□ -F34-G Dimensions not listed are the same as RA0180-□-F31-G.



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)		
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3
RA0180-120-G	120	3	75	135	2	4.4	80		
RA0180-160-G	160	4	100	180			120		
RA0180-200-G	200	5	125	225			160		
RA0180-240-G	240	6	150	270			200		
RA0180-280-G	280	7	175	315			240		
RA0180-320-G	320	8	200	360			280		
RA0180-360-G	360	9	225	405	3	6.6	160	160	
RA0180-400-G	400	10	250	450			180	180	
RA0180-440-G	440	11	275	495			200	200	
RA0180-480-G	480	12	300	540			220	220	
RA0180-520-G	520	13	325	585			240	240	
RA0180-560-G	560	14	350	630			260	260	
RA0180-600-G	600	15	375	675	4	8.8	185	190	185
RA0180-640-G	640	16	400	720			200	200	200
RA0180-680-G	680	17	425	765			210	220	210

● Machined slot depth

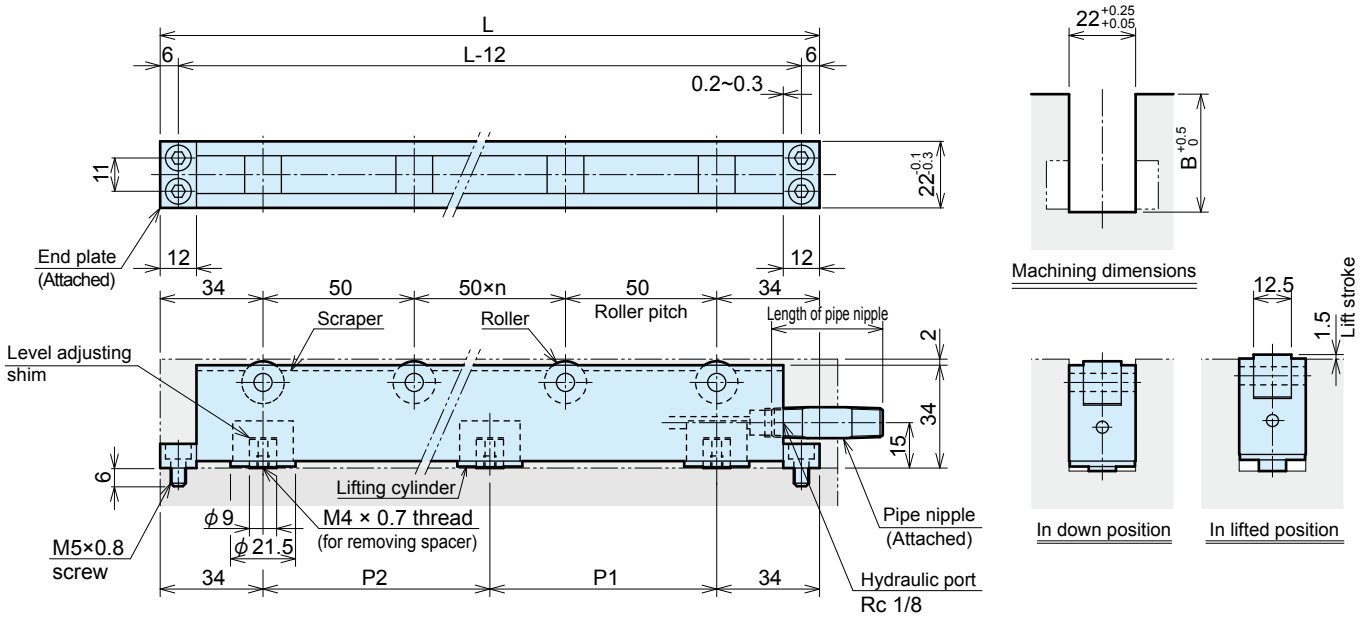
Model	slot depth (B)
F31	31
F34	34

Remarks

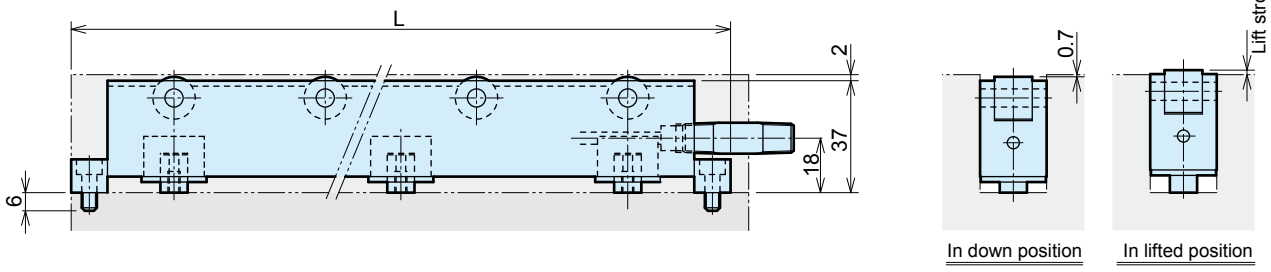
*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Outline Dimensions

● RA0220-□ -F36



● RA0220-□ -F39 Dimensions not listed are the same as RA0220-□-F36.



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)	
			SS400	S45C	Number	Lifting force (kN)	P1	P2
RA0220-168	168	3	135	240	2	7.6	100	
RA0220-218	218	4	180	320			150	
RA0220-268	268	5	225	400			200	
RA0220-318	318	6	270	480			250	
RA0220-368	368	7	315	560			300	
RA0220-418	418	8	360	640	3	11.4	175	175
RA0220-468	468	9	405	720			200	200
RA0220-518	518	10	450	800			225	225
RA0220-568	568	11	495	880			250	250
RA0220-618	618	12	540	960			275	275
RA0220-668	668	13	585	1040			300	300
RA0220-718	718	14	630	1120			325	325

● Machined slot depth

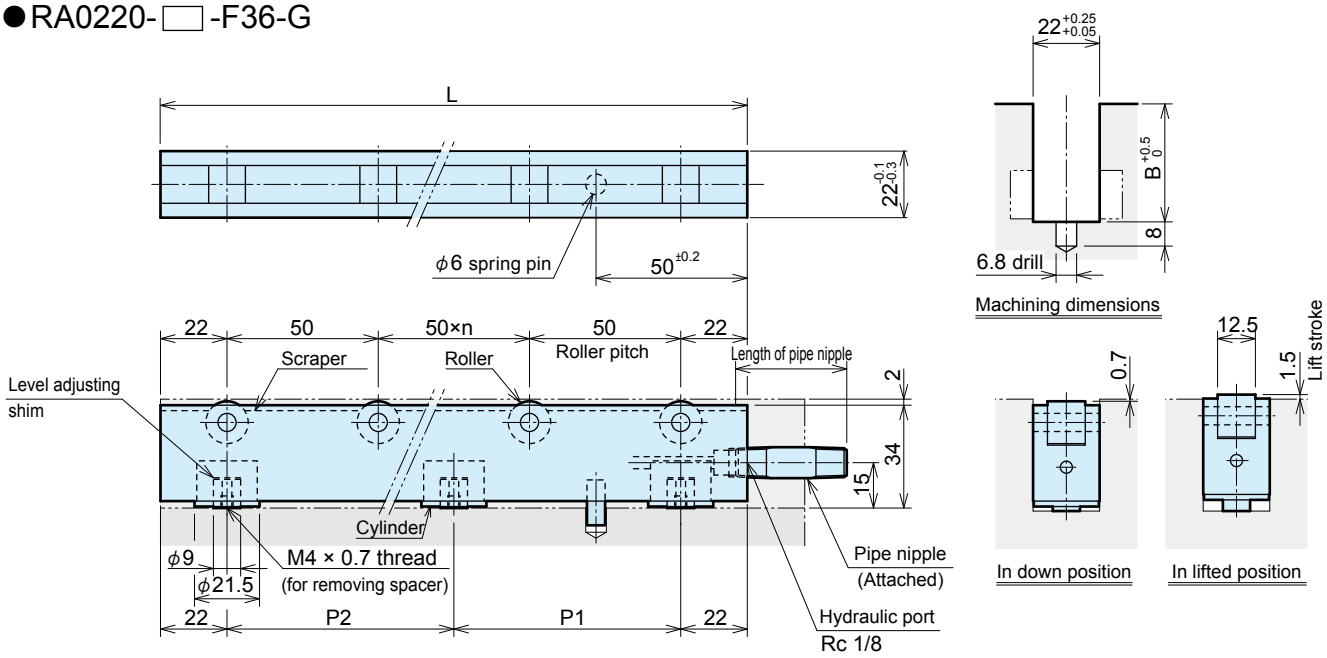
Model	slot depth (B)
F36	36
F39	39

Remarks

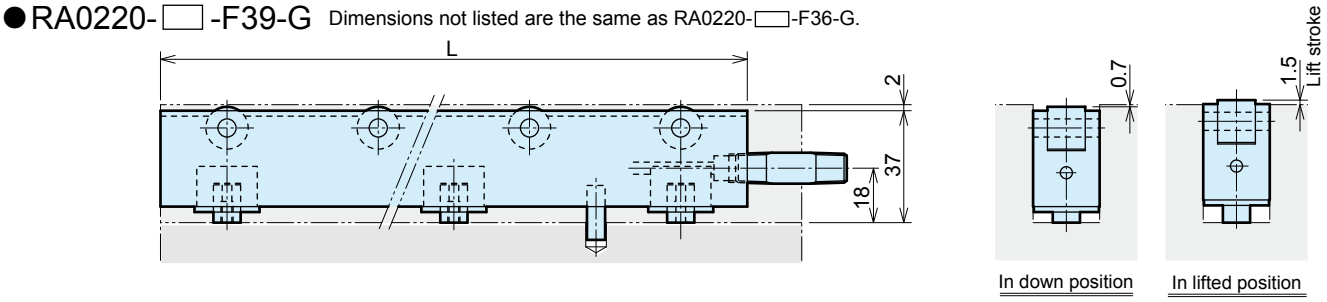
*1. The allowable die weight is for when the die rests on all the flat rollers.
If the crowning roller specifications (optional model J) are used, calculate the allowable weight using the figures in the specifications column.

Outline Dimensions

● RA0220-□-F36-G



● RA0220-□-F39-G Dimensions not listed are the same as RA0220-□-F36-G.



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)	
			SS400	S45C	Number	Lifting force (kN)	P1	P2
RA0220-144-G	144	3	135	240	2	7.6	100	
RA0220-194-G	194	4	180	320			150	
RA0220-244-G	244	5	225	400			200	
RA0220-294-G	294	6	270	480			250	
RA0220-344-G	344	7	315	560			300	
RA0220-394-G	394	8	360	640	3	11.4	175	175
RA0220-444-G	444	9	405	720			200	200
RA0220-494-G	494	10	450	800			225	225
RA0220-544-G	544	11	495	880			250	250
RA0220-594-G	594	12	540	960			275	275
RA0220-644-G	644	13	585	1040			300	300
RA0220-694-G	694	14	630	1120			325	325

● Machined slot depth

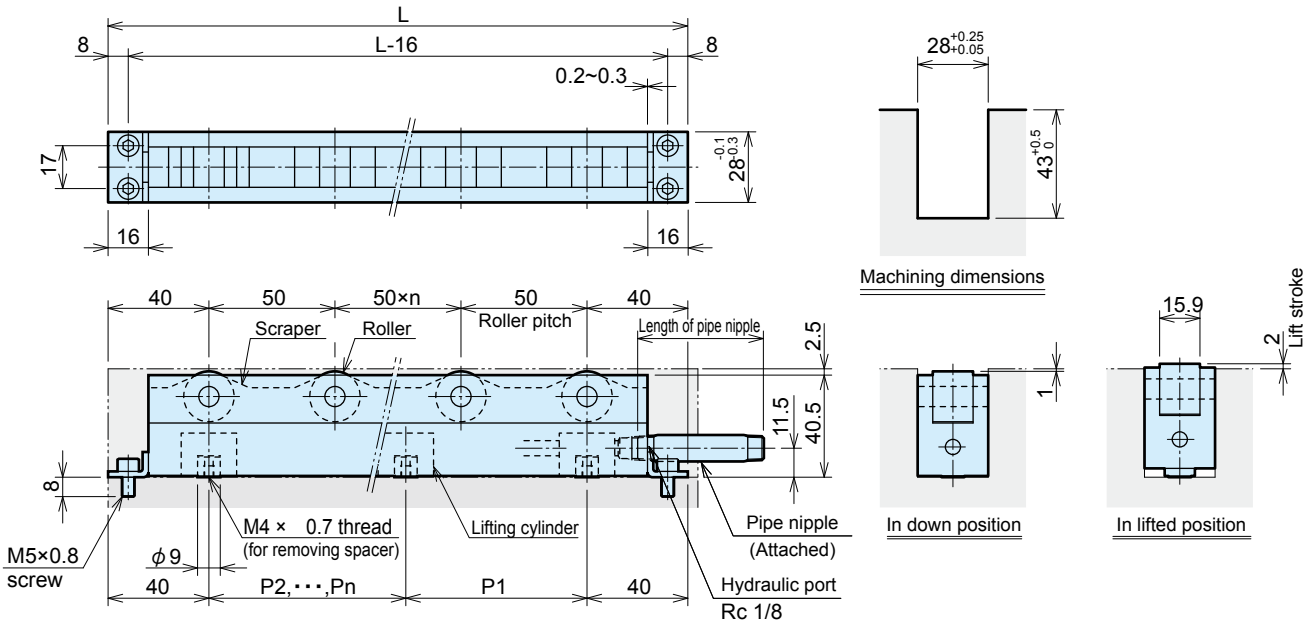
Model	slot depth (B)
F36	36
F39	39

Remarks

*1. The allowable die weight is for when the die rests on all the flat rollers.
If the crowning roller specifications (optional model J) are used, calculate the allowable weight using the figures in the specifications column.

Outline Dimensions

● RA0280-□



● Dimensions

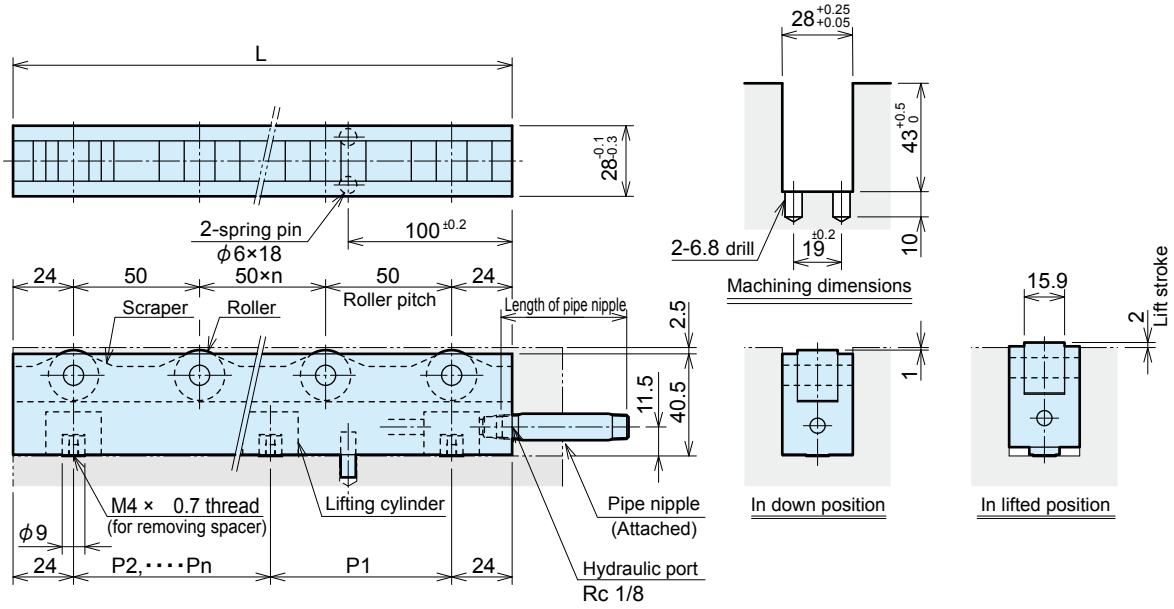
Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)						
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3	P4	P5	P6	P7
RA0280-180	180	3	240	420	2	9.8	100						
RA0280-230	230	4	320	560			150						
RA0280-280	280	5	400	700			200						
RA0280-330	330	6	480	840			250						
RA0280-380	380	7	560	980			300						
RA0280-430	430	8	640	1120	3	14.7	175	175					
RA0280-480	480	9	720	1260			200	200					
RA0280-530	530	10	800	1400			225	225					
RA0280-580	580	11	880	1540	4	19.6	165	170	165				
RA0280-630	630	12	960	1680			180	190	180				
RA0280-680	680	13	1040	1820			200	200	200				
RA0280-730	730	14	1120	1960			215	220	215				
RA0280-780	780	15	1200	2100	5	24.5	175	175	175	175			
RA0280-830	830	16	1280	2240			185	190	190	185			
RA0280-880	880	17	1360	2380			200	200	200	200			
RA0280-930	930	18	1440	2520	6	29.4	170	170	170	170	170		
RA0280-980	980	19	1520	2660			180	180	180	180	180		
RA0280-1030	1030	20	1600	2800			190	190	190	190	190		
RA0280-1080	1080	21	1680	2940			200	200	200	200	200		
RA0280-1130	1130	22	1760	3080	7	34.3	175	175	175	175	175	175	
RA0280-1180	1180	23	1840	3220			180	185	185	185	185	180	
RA0280-1230	1230	24	1920	3360			190	190	195	195	190	190	
RA0280-1280	1280	25	2000	3500			200	200	200	200	200	200	
RA0280-1330	1330	26	2080	3640	8	39.2	175	180	180	180	180	180	175
RA0280-1380	1380	27	2160	3780			185	186	186	186	186	186	185
RA0280-1430	1430	28	2240	3920			190	194	194	194	194	194	190
RA0280-1480	1480	29	2320	4060			200	200	200	200	200	200	200

Remarks

*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Outline Dimensions

● RA0280-□-G



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)						
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3	P4	P5	P6	P7
RA0280-148-G	148	3	240	420	2	9.8	100						
RA0280-198-G	198	4	320	560			150						
RA0280-248-G	248	5	400	700			200						
RA0280-298-G	298	6	480	840			250						
RA0280-348-G	348	7	560	980			300						
RA0280-398-G	398	8	640	1120	3	14.7	175	175					
RA0280-448-G	448	9	720	1260			200	200					
RA0280-498-G	498	10	800	1400			225	225					
RA0280-548-G	548	11	880	1540	4	19.6	165	170	165				
RA0280-598-G	598	12	960	1680			180	190	180				
RA0280-648-G	648	13	1040	1820			200	200	200				
RA0280-698-G	698	14	1120	1960			215	220	215				
RA0280-748-G	748	15	1200	2100	5	24.5	175	175	175	175			
RA0280-798-G	798	16	1280	2240			185	190	190	185			
RA0280-848-G	848	17	1360	2380			200	200	200	200			
RA0280-898-G	898	18	1440	2520	6	29.4	170	170	170	170	170		
RA0280-948-G	948	19	1520	2660			180	180	180	180	180		
RA0280-998-G	998	20	1600	2800			190	190	190	190	190		
RA0280-1048-G	1048	21	1680	2940			200	200	200	200	200		
RA0280-1098-G	1098	22	1760	3080	7	34.3	175	175	175	175	175	175	
RA0280-1148-G	1148	23	1840	3220			180	185	185	185	185	180	
RA0280-1198-G	1198	24	1920	3360			190	190	195	195	190	190	
RA0280-1248-G	1248	25	2000	3500			200	200	200	200	200	200	
RA0280-1298-G	1298	26	2080	3640	8	39.2	175	180	180	180	180	180	175
RA0280-1348-G	1348	27	2160	3780			185	186	186	186	186	186	185
RA0280-1398-G	1398	28	2240	3920			190	194	194	194	194	194	190
RA0280-1448-G	1448	29	2320	4060			200	200	200	200	200	200	200

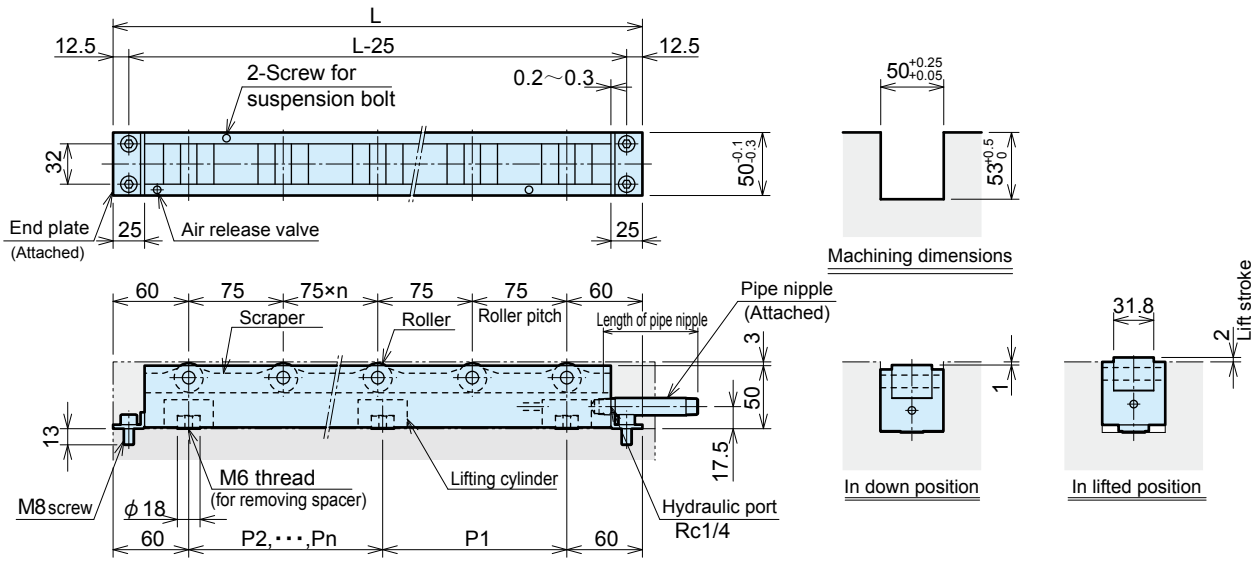
Remarks

*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Hydraulic die lifter

Outline Dimensions

● RA0500-□



● Dimensions

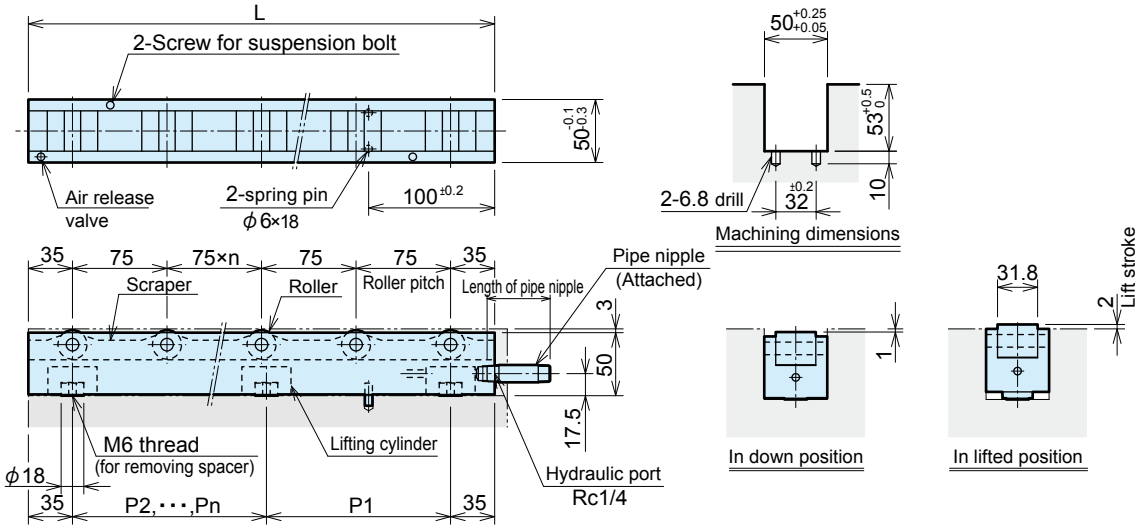
Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)						
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3	P4	P5	P6	P7
RA0500-195	195	2	400	700	2	22.2	75						
RA0500-270	270	3	600	1050			150						
RA0500-345	345	4	800	1400			225						
RA0500-420	420	5	1000	1750			300						
RA0500-495	495	6	1200	2100			375						
RA0500-570	570	7	1400	2450	3	33.3	225	225					
RA0500-645	645	8	1600	2800			262.5	262.5					
RA0500-720	720	9	1800	3150			300	300					
RA0500-795	795	10	2000	3500	4	44.4	225	225	225				
RA0500-870	870	11	2200	3850			250	250	250				
RA0500-945	945	12	2400	4200			275	275	275				
RA0500-1020	1020	13	2600	4550	5	55.5	225	225	225	225			
RA0500-1095	1095	14	2800	4900			240	247.5	247.5	240			
RA0500-1170	1170	15	3000	5250			262.5	262.5	262.5	262.5			
RA0500-1245	1245	16	3200	5600			280	282.5	282.5	280			
RA0500-1320	1320	17	3400	5950	6	66.6	240	240	240	240	240		
RA0500-1395	1395	18	3600	6300			255	255	255	255	255		
RA0500-1470	1470	19	3800	6650			270	270	270	270	270		
RA0500-1545	1545	20	4000	7000	7	77.7	237.5	237.5	237.5	237.5	237.5		
RA0500-1620	1620	21	4200	7350			250	250	250	250	250	250	
RA0500-1695	1695	22	4400	7700			262.5	262.5	262.5	262.5	262.5	262.5	
RA0500-1770	1770	23	4600	8050	8	88.8	235	236	236	236	236	236	235
RA0500-1845	1845	24	4800	8400			245	247	247	247	247	247	245

Remarks

*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Outline Dimensions

● RA0500-□-G



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)						
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3	P4	P5	P6	P7
RA0500-145-G	145	2	400	700			75						
RA0500-220-G	220	3	600	1050			150						
RA0500-295-G	295	4	800	1400	2	22.2	225						
RA0500-370-G	370	5	1000	1750			300						
RA0500-445-G	445	6	1200	2100			375						
RA0500-520-G	520	7	1400	2450			225	225					
RA0500-595-G	595	8	1600	2800	3	33.3	262.5	262.5					
RA0500-670-G	670	9	1800	3150			300	300					
RA0500-745-G	745	10	2000	3500			225	225	225				
RA0500-820-G	820	11	2200	3850	4	44.4	250	250	250				
RA0500-895-G	895	12	2400	4200			275	275	275				
RA0500-970-G	970	13	2600	4550			225	225	225	225			
RA0500-1045-G	1045	14	2800	4900	5	55.5	240	247.5	247.5	240			
RA0500-1120-G	1120	15	3000	5250			262.5	262.5	262.5	262.5			
RA0500-1195-G	1195	16	3200	5600			280	282.5	282.5	280			
RA0500-1270-G	1270	17	3400	5950			240	240	240	240	240		
RA0500-1345-G	1345	18	3600	6300	6	66.6	255	255	255	255	255		
RA0500-1420-G	1420	19	3800	6650			270	270	270	270	270		
RA0500-1495-G	1495	20	4000	7000			237.5	237.5	237.5	237.5	237.5		
RA0500-1570-G	1570	21	4200	7350	7	77.7	250	250	250	250	250	250	
RA0500-1645-G	1645	22	4400	7700			262.5	262.5	262.5	262.5	262.5	262.5	
RA0500-1720-G	1720	23	4600	8050			235	236	236	236	236	236	235
RA0500-1795-G	1795	24	4800	8400	8	88.8	245	247	247	247	247	247	245

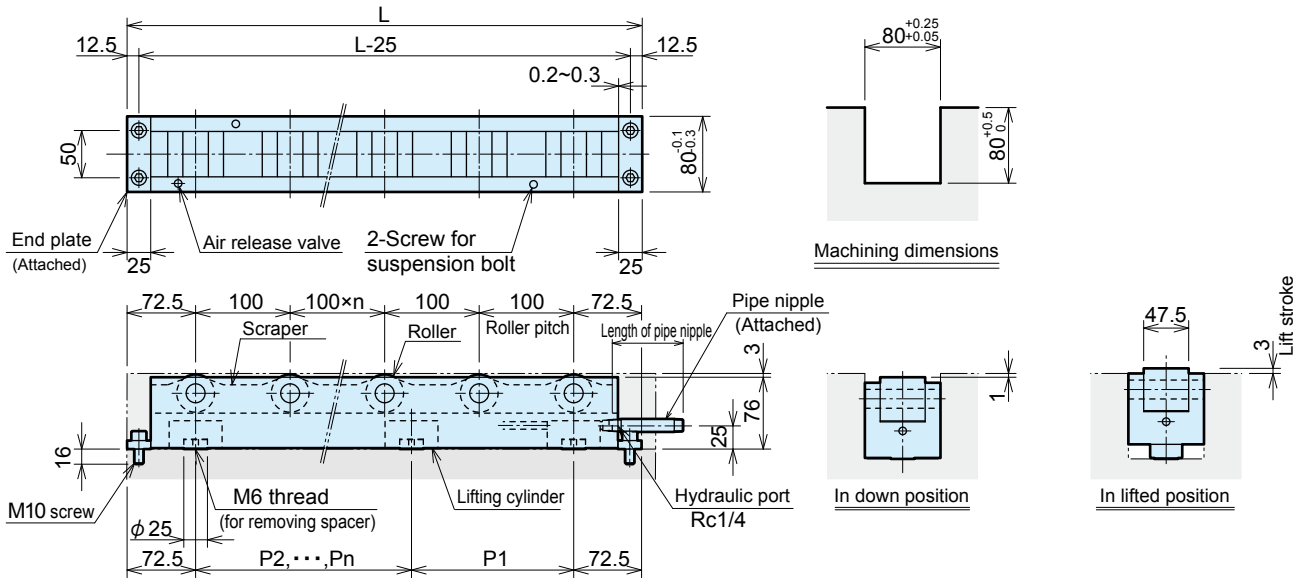
Remarks

*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Hydraulic die lifter

Outline Dimensions

● RA0800-□



● Dimensions

Model	Total length of die lifter L (mm)	Roller qty	Allowable die weight (kg)*1		Lifting cylinder		Lifting cylinder pitch (mm)				
			SS400	S45C	Number	Lifting force (kN)	P1	P2	P3	P4	P5
RA0800-445	445	4	2000	3200			300				
RA0800-545	545	5	2500	4000	2	49	400				
RA0800-645	645	6	3000	4800			500				
RA0800-745	745	7	3500	5600			300	300			
RA0800-845	845	8	4000	6400	3	73.5	350	350			
RA0800-945	945	9	4500	7200			400	400			
RA0800-1045	1045	10	5000	8000			300	300	300		
RA0800-1145	1145	11	5500	8800	4	98	330	340	330		
RA0800-1245	1245	12	6000	9600			360	380	360		
RA0800-1345	1345	13	6500	10400			300	300	300	300	
RA0800-1445	1445	14	7000	11200	5	122.5	325	325	325	325	
RA0800-1545	1545	15	7500	12000			350	350	350	350	
RA0800-1645	1645	16	8000	12800			300	300	300	300	300
RA0800-1745	1745	17	8500	13600	6	147	320	320	320	320	320
RA0800-1845	1845	18	9000	14400			340	340	340	340	340

Remarks

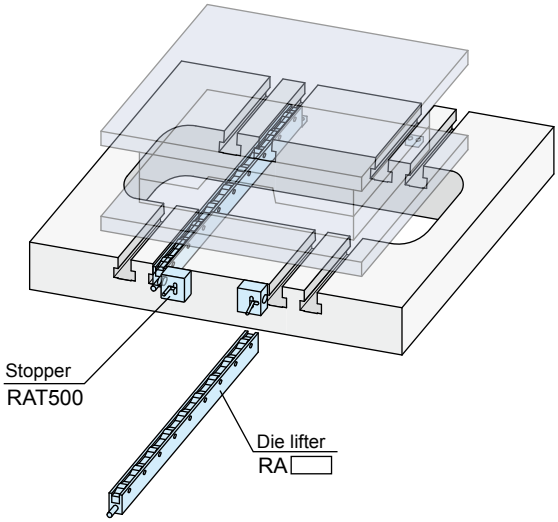
*1. The allowable die weight is for when the die rests on all the flat rollers.
For crowned rollers (option J) calculate allowable weight from the values shown in the specifications table.

Hydraulic die lifter (option)

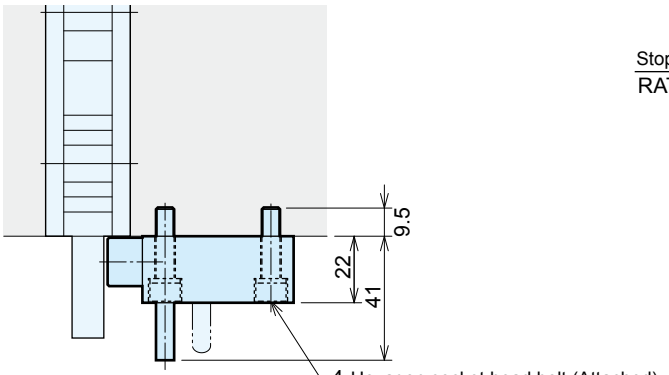
Option/Special specification example

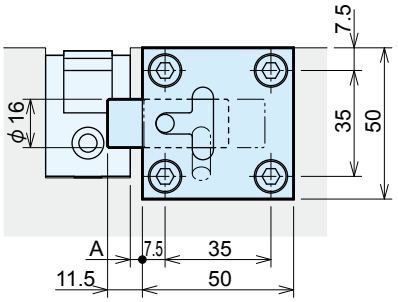
● RAT retractrable stopper

- Easily remove die lifters from bolster
- Bridge scrap chutes when loading/unloading dies
- Reposition die lifters for different sizes
  Reposition die lifters for multiple die loading



External and mounting dimensions of stopper

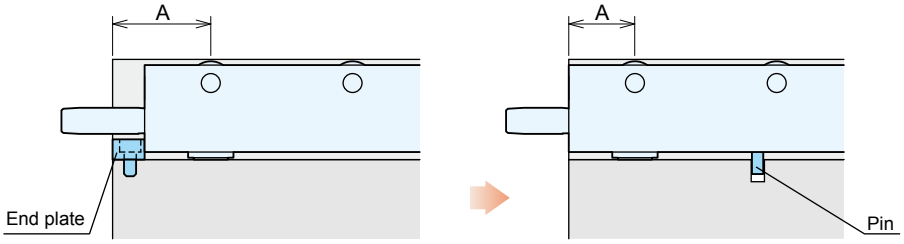




Stopper model	Die lifter model	Dimension A
RAT500	RA0180	9
	RA0220	7
	RA0280	4
	RA0500	0

● See p. 33 for pin specifications (optional model G), model and external dimensions.

- Reduces pitch A from roller to edge of bolster
- Prevents debris from collecting in the slot

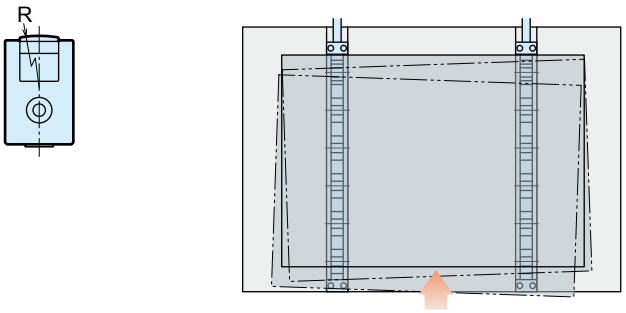


Standard

G: Pin specifications

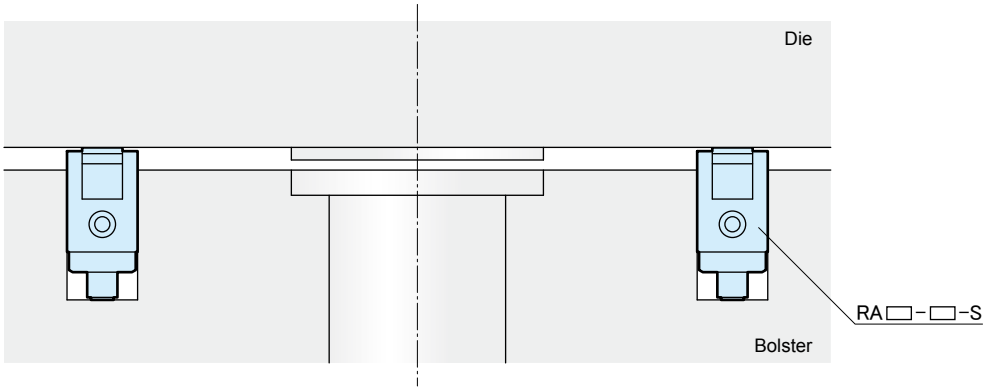
● The maximum die weight under the crowning roller specifications (optional model J) will be less than the standard weight.
See the specifications column on p. 33.

● Reposition off center dies



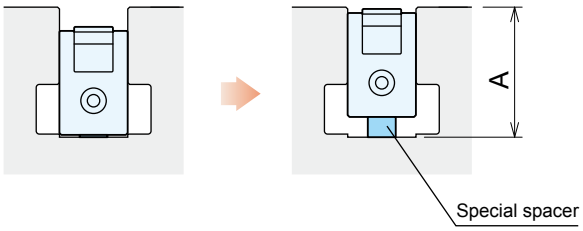
● Contact us for details on the long stroke specifications (optional model S).

● If die need extra clearance when loading/unloading



● Special spacer Contact us for details.

● If existing slot depth A is greater than our specification

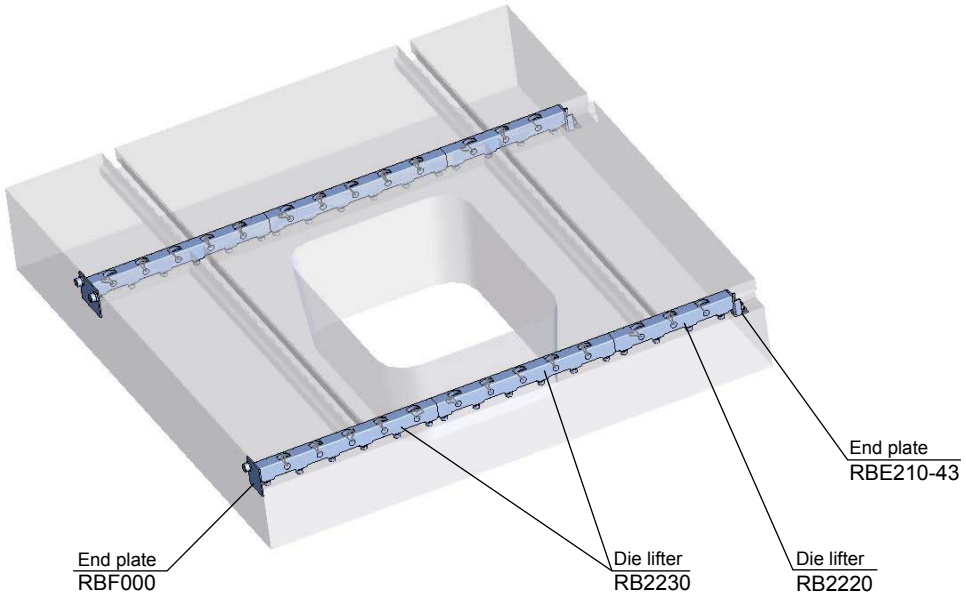


Spring lifting type die lifter

Specifications

Model			RB2220	RB2230	RB2420	RB2430	RB02820	RB02830	RB3220	RB3230
Application slot dimensions	Width:	mm	22		24		28		32	
	Depth:	mm	32~43				44~58			
Total length of die lifter		mm	200	300	200	300	200	300	200	300
Roller quantity (per die lifter)			3	5	3	5	3	5	3	5
Lift spring quantity (per die lifter)			4	6	4	6	4	6	4	6
Lifting force (per die lifter)		kN	1.5	2.2	1.5	2.2	2.9	4.4	2.9	4.4
Operating temperature		℃	0~110							

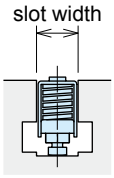
Applications



Model Code

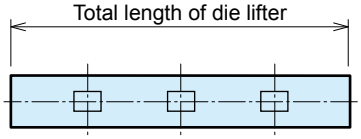
RB 22 2 0 – V145
1 2 3 4

1 Applicable slot width



2 Total length of die lifter

2 : 200mm
3 : 300mm



3 Design No.

4 Option models

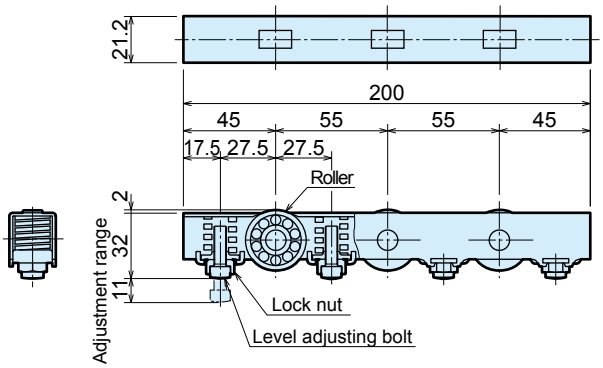
V : High temperature specifications (0~200℃)
145 : Total length 145mm (RB☐☐20 only)
245 : Total length 245mm (RB☐☐30 only)

Remarks
1. Optional models 145 and 245 are for the US, so the dimensions in the specifications and other documents are listed in inches, but the total length is a code which can be converted to millimeters.
2. End plates are sold separately. See p. 50 for details.

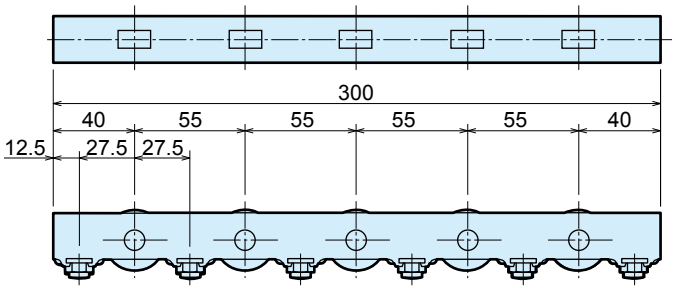
Spring lifting type die lifter

Outline Dimensions

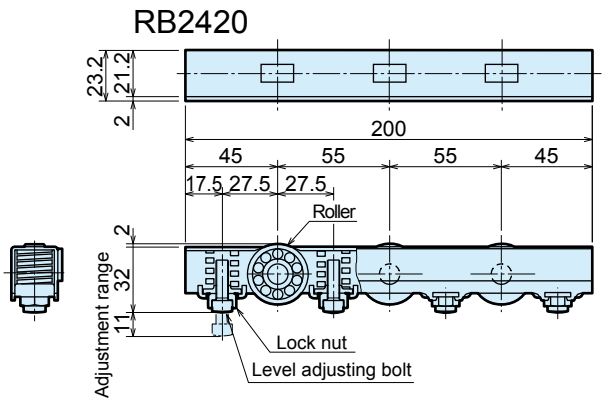
RB2220



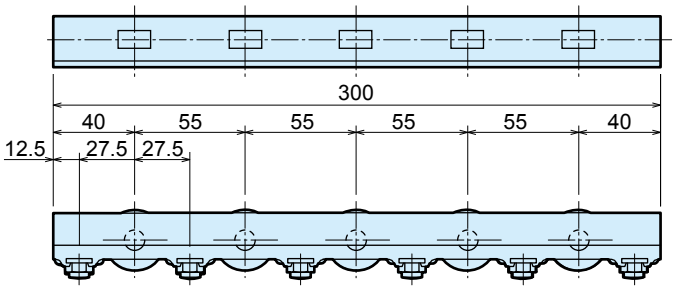
RB2230



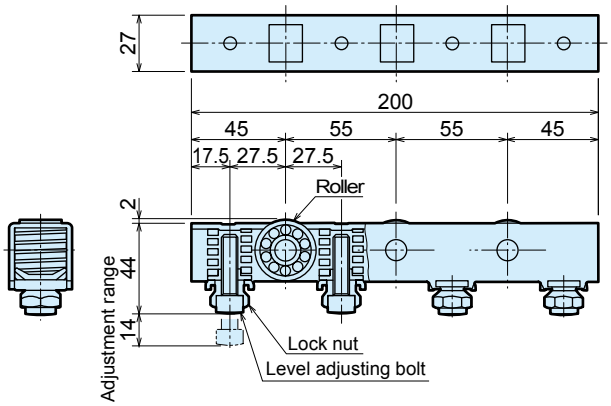
RB2420



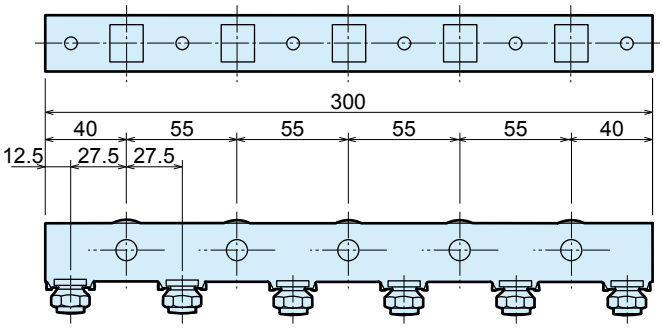
RB2430



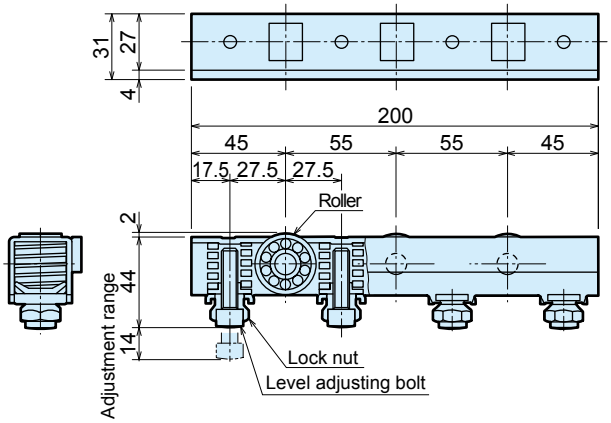
RB2820



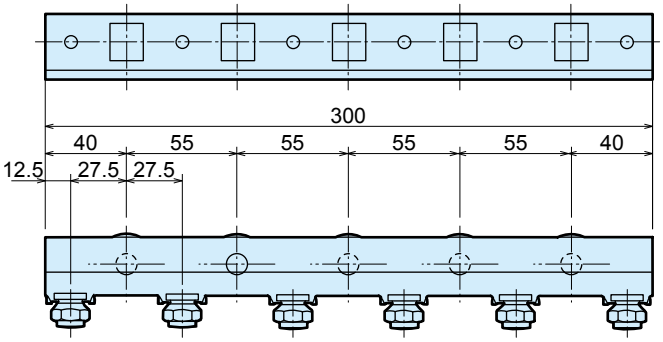
RB2830



RB3220

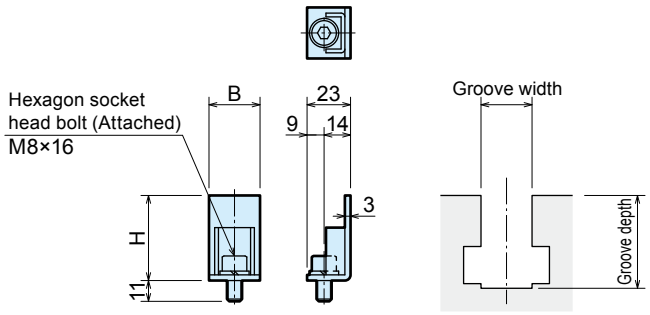


RB3230

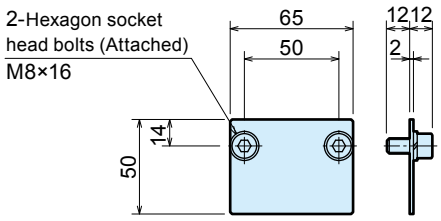


Accessories

Slot mounted end plate
RBE□0-□



Edge mounted end plate
RBF000



● Compatible end plates

Model (slot mount)		RBE210-43	RBE230-43	RBE270-45	RBE270-58	RBE310-58
Model (edge mount)		RBF000				
Applicable RB roller model		RB22□0	RB24□0	RB28□0		RB32□0
B	mm	21	23	27	2731	
H*1	mm	43	43	45	58	58
Applicable slot dimensions	Width:mm	22	24	28		32
	Depth:mm	32~43		44~58		

Notes
*1. Cut according to applicable slot depth.

Cautions for Desing

1) Check the specifications

●Check each of the specification columns.

MRC (removable type)...p. 3

MRD (removable vertical folding type)...p. 13

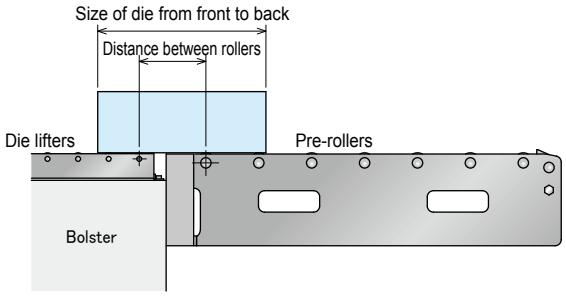
MRE/MRF (horizontal folding type)...p. 23

2) Check the die weight

●Make sure the weight of the die to be used is less than the maximum load.

3) Check the die dimensions

●Make sure that the size of the die from front to back is at least twice the size of the space between the first roller on the pre-roller side of the die lifter inside the bolster and the first roller on the pre-roller bolster side.
If the die is smaller than the distance between the rollers, transport will not be smooth, and it could result in damage to the die or equipment.

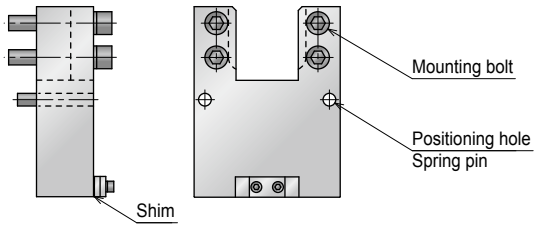


Cautions for Mounting

1) Mounting the block

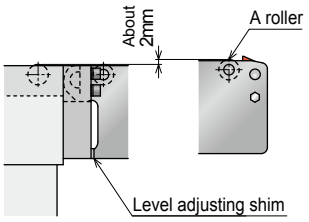
(1) Attach the block on the edge of the bolster with the supplied mounting bolts and perform the initial tightening.
(2) Attach the pre-roller and use shims to make the roller surface level.
(3) With the die lifter inside the bolster in the lifted position, adjust the position of the mounting block so that the top of the rollers on the die lifter and pre-roller are even and then perform the final tightening of the mounting bolts.
※Tighten the mounting bolts (M12) with a torque of 98 Nm.
※If rollers are not used within the bolster, align the top of the rollers on the pre-roller with the top of the bolster.

(4) Be sure to position the block with a spring pin.
Without a spring pin, the pre-roller could become misaligned, resulting in the die falling off.



2) Level adjustment

●Use shims to adjust the roller on the edge of the pre-roller (roller A) so that it is on the level of the roller inside the bolster or approximately 2 mm higher than the top of the bolster.

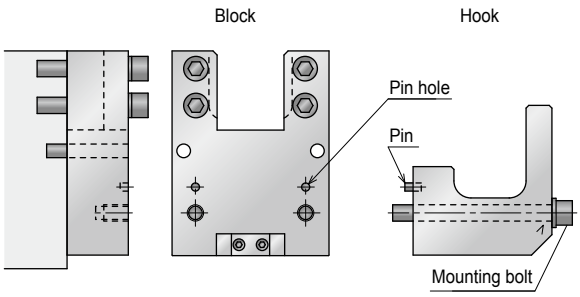


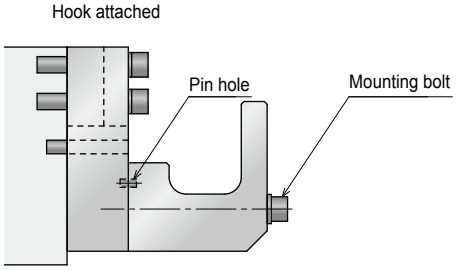
3) Mounting the hook (MRD roller only)

●Align the pin on the hook with the hole on the block and attach the hook with the supplied mounting bolt.

Mounting bolt tightening torque

Model	Mounting bolt size	Tightening torque (N·m)
MRD0750	M10	50
MRD1190	M12	98
MRD1500		
MRD1900		





Cautions for Use

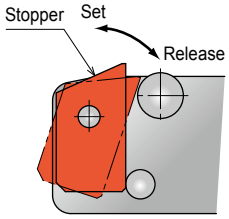
1) The product should be operated by persons with the necessary knowledge and experience.

2) The pre-roller should not be used for purposes other than die changes.

3) Only use dies that weigh less than the maximum load.

4) Stow the pre-roller away while operating the press machine.
●Fold or remove the pre-roller while operating the press machine. If the press machine is operated with the pre-roller in place, the vibration could damage the pre-roller.

5) Check the stopper
●If the die is moved with the stopper released, the die could drop and cause an injury, so always make sure the stopper is in place before use.



6) Do not exceed the maximum die lowering speed.
●When placing the die on the pre-roller, lower it at a speed of 50 mm/sec or less.
If it is done too fast the pre-roller could be damaged and cause an injury.

7) Do not exceed the maximum die moving speed.
●Do not exceed 100mm/sec when moving die to prevent damage to stopper.

8) Be careful not to injure your fingers when folding the frame.
●Never let the pre-roller drop freely when removing or folding it as it could cause personal injury or equipment damage.

9) Check the lock pin (MRE/MRF only)
●When moving the die, always ensure that the lock pin is engaged.

10) Do not get water or oil onto the equipment.
●Doing so could result in failure or deterioration of the product causing an accident.

Cautions for Design

1) Check the specifications
- The normal hydraulic pressure of the RA roller is 24.5 MPa, and the maximum pressure under the specifications is 27 MPa.
- See the specifications columns for the detailed specifications of the RA and RB rollers.

2) Check the die weight
- Make sure the die weight is within the allowable range.
  If the weight of the die exceeds the allowable range, the bottom of the die could be damaged and the lifting could be impaired.

3) Check lift cylinder location on the bolster (RA roller only)
- Check the lift cylinder does not sit over a cavity on the bolster. This could damage the RA die lifter causing the die to fall and possibly cause injury.

Cautions for Mounting

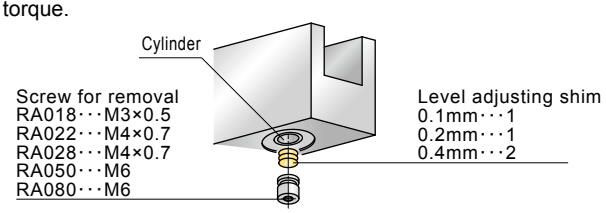
1) Check the fluid used (RA roller only)
- Make sure to use the list below to choose the appropriate fluid.

Manufacturer	Abrasion resisting hydraulic oil	General purpose oil
Showa Shell Sekiyu	Tellus Oil 32	Tellus Oil C32
Idemitsu Kosan	Daphne Super Hydraulic 32A	Super Multi 32
Eneos	Super Highland 32	Super Mulpus 32
Cosmo Oil	Cosmo Hydro AW32	Cosmo New Mighty Super 32
Japan Energy (JOMO)	Hydrax 32	Lathus 32
Esso	Nuto H32	Nuto 32
ExxonMobil	Mobil DTE24	Mobil DTE24 Light
Kygnus	Unit Oil WR32	Unit Oil P32
Fuji Kosan	Fukkol Super Hydrol 32	Fukkol Hydrol DX32
Matsumura Oil	Hydrol AW32	
Sunoco	Sunvis 832	Sunvis 932
Mitsui Oil	Hi-Tech AW32	Hydrax 32
Castrol	Hyspin AWS32	

2) Action before installing piping (RA lifter only)
- Flush the pipes and joints to make sure they are clean.

3) Use a hydraulic hose (RA roller only)
- The hydraulic connection port will rise and fall, so use a hydraulic hose.

4) Level adjustment
- Place the lifter in the slot and adjust the level according to the dimensions when lifting and lowering.
  See the outline dimensions for the slot dimensions and level adjusting settings. if the level is not adjusted, the load may not be uniformly distributed, which could damage the rollers or the die.
  Use level adjusting shims to adjust the RA roller level. Use the level adjusting bolt to adjust the RB roller level and fasten the level adjusting bolt with a lock nut tightened with 5.9-9.8 Nm of torque.



5) Air bleeding within hydraulic circuit (RA roller only)
- Excessive air in the hydraulic circuit will slow the reaction time and could result in pump continuously idling.
  After installing the hydraulic circuit, or if the pump run out of oil, be sure to bleed air from the nipple in the case of RA018/022/028 or from the air bleed valve in the case of RA050/RA080.

Cautions for Use

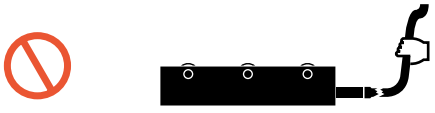
1) The product should be operated by persons with the necessary knowledge and experience.

2) Do not operate or remove equipment without first ensuring your safety.
(1)Perform inspections and maintenance of the machines and systems after making sure no objects will fall and the equipment will not accidentally operate.
(2)When removing equipment, check to make sure the safety precautions mentioned above have been taken and then block the power source and the air to the hydraulic pressure source. Remove the equipment after making sure no pressure remains in the hydraulic pressure circuit.
(3)When removing equipment right after operation, the equipment may still be hot, so wait until it cools off.
(4)When restarting the machine or system, make sure the bolts and parts are secure and in place first.

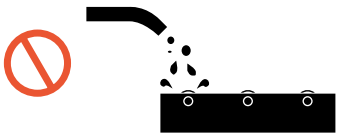
3) Do not take the equipment apart or modify it.
- If the equipment is taken apart or modified the warranty will be void, even within the warranty period.

4) Do not touch the rollers while they are being operated.
- Doing so could result in injury.

5) When moving the RA roller or removing it, hold onto the RA roller itself.
- Pulling on the hose can cause the RA roller to drop and result in injury.
  The hose fitting can also become loose, resulting in oil leaks.



6) Do not get water or oil onto the equipment.
- Doing so could result in failure or deterioration of the product causing an accident.



Maintenance and inspection

<Common items>

1) Removal of equipment
- ●Before removing equipment, take measure to prevent objects from dropping or equipment from activating
- ●Before restarting equipment, make sure all fasteners and fittings are secure

2) Check to make sure the rollers move smoothly and do not make noises.

3) For overhaul and repairs, please contact us.

<Pre-roller>

1) Make sure that the stopper returns to the normal position by spring force.

2) Make sure the die holds when the stopper is released.

3) Check the block mounting bolts periodically and tighten as needed.

4) Check the hook mounting bolts periodically and tighten as needed.

5) When using a push bolt, make sure there is no space between it and the press.

<Die lifter>

1) Check the hydraulic fittings periodically and tighten as needed.

2) Check periodically to make sure that the supplied hydraulic pressure is at the correct operating pressure.

3) Check to make sure the hydraulic fluid has not degraded.

4) Check to make sure operation is smooth without abnormal sounds.
- ●In particular, if the equipment is not used for a long period of time, when it is used again for the first time make sure that it operates properly.

5) Check periodically to make sure that the end plate mounting bolts are not loose.

6) When storing the product, keep it out of direct sunlight in a cool location where it is protected from water.

Warranty

1) Warranty period
- ●The product warranty period is for 1.5 years after shipment from our plant or 1 year of use, whichever is shorter.

2) Warranty scope
- ●If the product is damaged or malfunctions during the warranty period due to some fault of ours, we will replace or repair the defective part at our expense. However, defects or failures caused by the following are not covered:

（1）Proper maintenance and inspections were not performed

（2）The product was used in an imperfect state at the discretion of the user

（3）The user did not use or handle the product properly (including damages caused by a third party

（4）The cause was due to some factor other than our product

（5）The product was modified or repaired by another company or was modified or repaired without our approval or confirmation

（6）The damage or defect was caused by natural disaster or accident through no fault of our own

（7）Parts and replacements necessary due to wear and tear (rubber, plastic, sealant, certain electrical equipment, etc.)

Damages caused by defects in our products are not covered.

KOSMEK®

HEAD OFFICE: 1-5, 2-CHOME, MUROTANI, NISHI-KU, KOBE 651-2241
TEL.81-78-991-5115 FAX.81-78 -991-8787

BRANCH OFFICE: KOSMEK (U.S.A.) LTD.
9824 S. INDUSTRIAL DRIVE SUITE B.BRIDGEVIEW, ILLINOIS 60455, U.S.A.
TEL.708-598-5772 FAX.708-598-6215

- FOR FURTHUR INFORNATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
- SPECIFICATIONS ON THIS LEAFLET ARE SUBJECTED TO CHANGE WITHOUT NOTICE.

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