

# ボールエアリフタ

*Ball Air Lifter*

# ローラエアリフタ

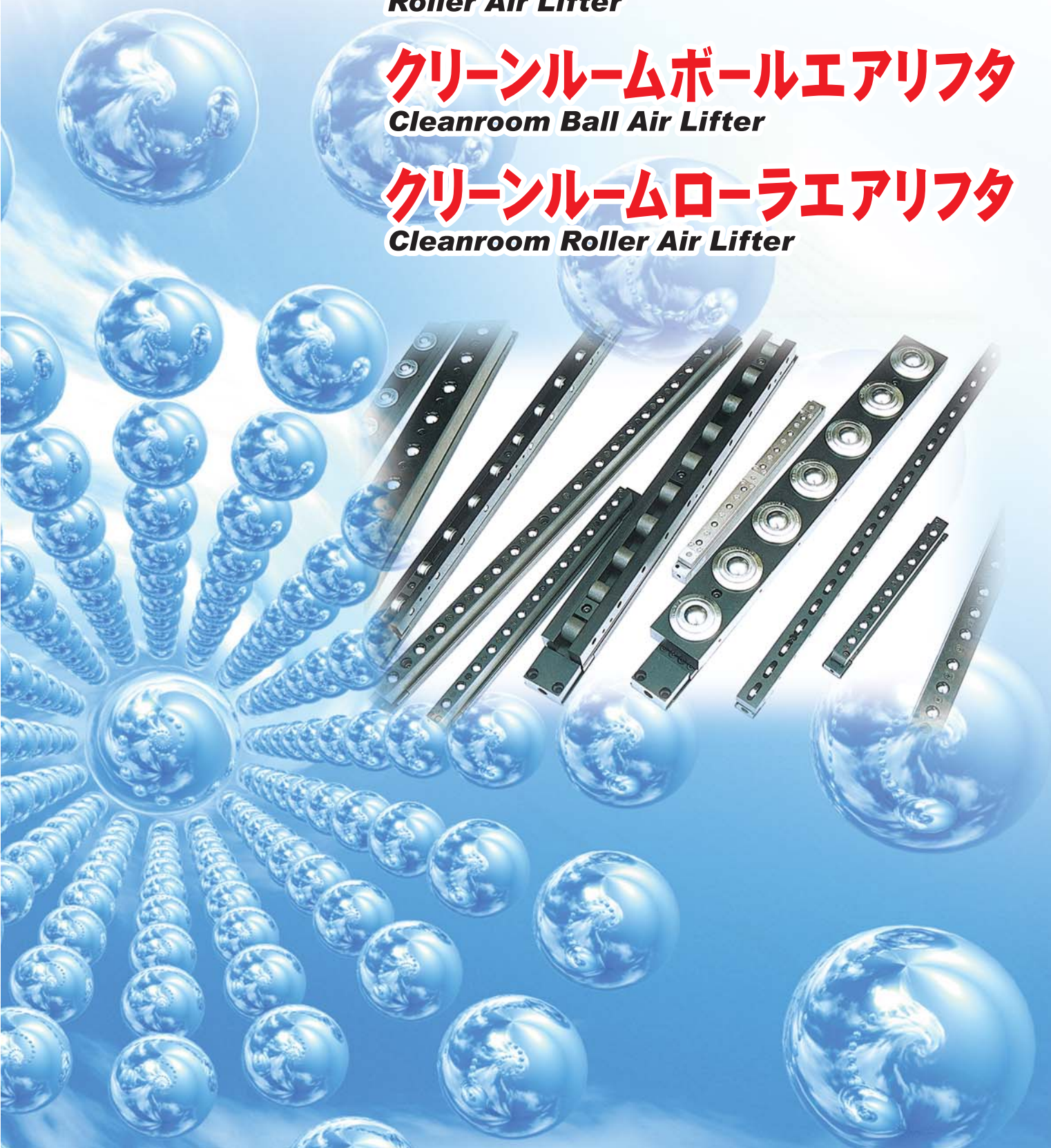
*Roller Air Lifter*

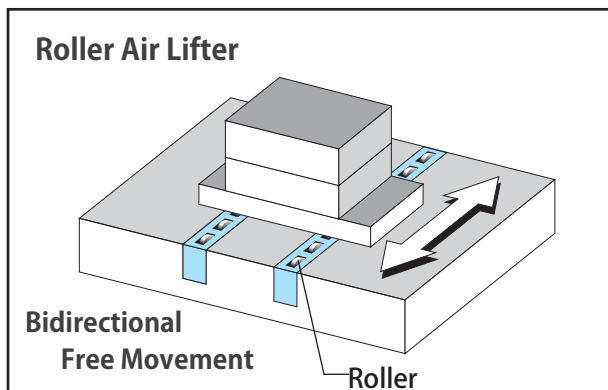
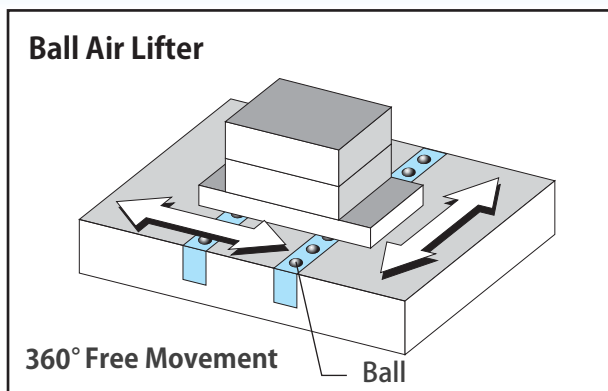
# クリーンルームボールエアリフタ

*Cleanroom Ball Air Lifter*

# クリーンルームローラエアリフタ

*Cleanroom Roller Air Lifter*





***Just connect the air!***  
***Accurate positioning of transported objects (die/molds, jigs, workpieces) in a short time***  
***Can be moved with a light force***

*In the case of* **1ton**  
*Ball Air Lifter* **20~30kg**  
*Roller Air Lifter* **10~20kg**

**Labor Saving**

with one worker

Easy to positioning

**Time Saving**

Number of Setups × Reduced time

Reduction of setup time

**Safety**

Move by ascent, Set by descent

positioning by turning of the air

**Cost Saving**

Flexibility for small lot multi production

**Utilization Rate**

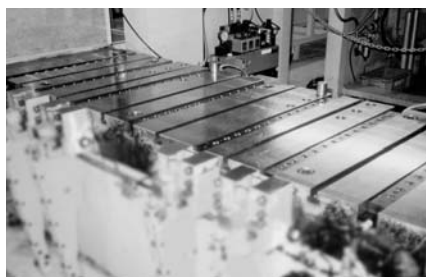
UP ↑

Improvement of machine utilization rate

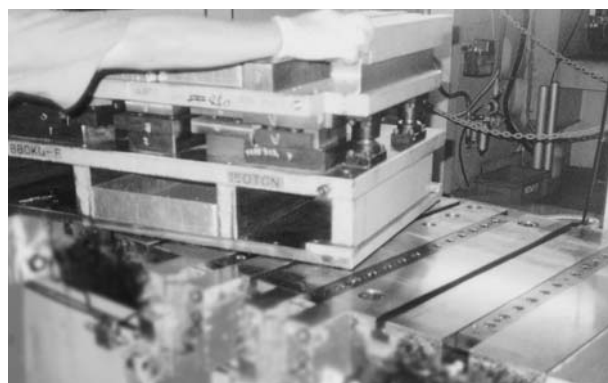
**Environment**

No need to refuel

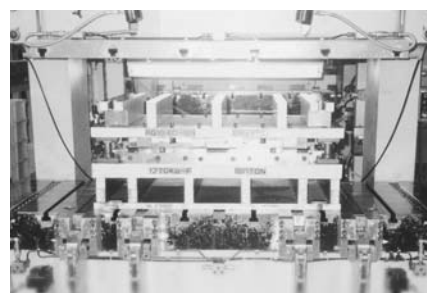
Clean work environment



Before Set Up



Die change in progress

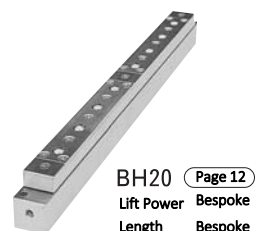
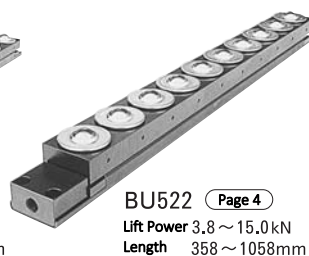
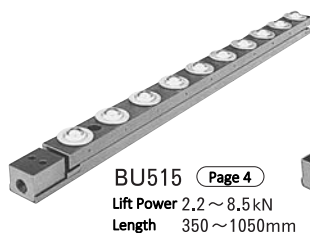
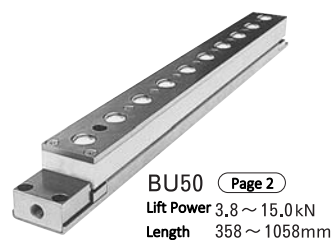
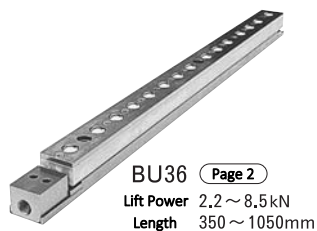


Positioning completed

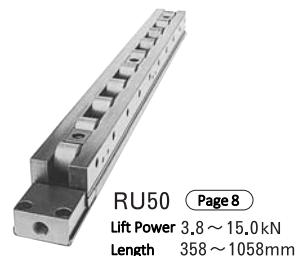
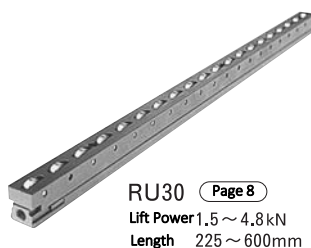


## U-slot Type

### ● Ball Air Lifter

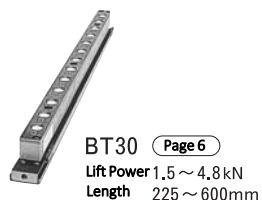


### ● Roller Air Lifter



## T-slot Type

### ● Ball Air Lifter



### ● Roller Air Lifter



# Ball Air Lifter

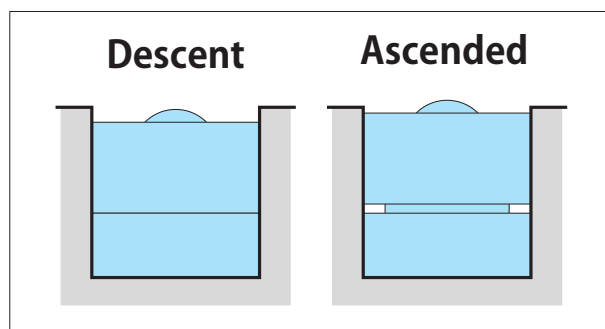
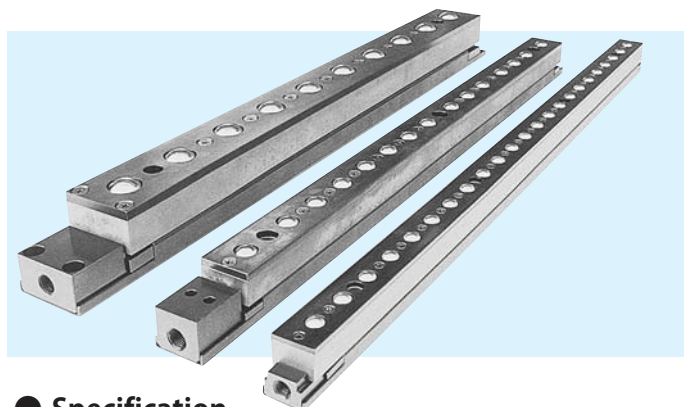
U-slot

# BU

30  
36  
50

Range of Load/piece

Light(1.5kN)~ Heavy(15.0kN)



## ● Specification

Type		BU30	BU36	BU50
Working Pressure Range	MPa(kgf/cm <sup>2</sup> )	0.05 ~ 0.6 (0.5 ~ 6.1)		
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> )	0.8 (8.2)		
Temperature	°C	-5 ~ +50		
Fluid used		Air (No need to refuel)		
Ball Diameter	φ mm	12.7 (1/2")	16.0	25.4 (1")
Allowable Mass/ball	kg	20	30	100
Lift Stroke	mm	3		

Lift Stroke: 4 ~ 10mm can be manufactured only for BU50 as a special version.  
Please contact us inquiry for special balls(Stainless, Nylon, other resin).

## ● Dimensions

Type	Number of Balls	Lift Power(kN)	A	B	C	D	Min. Descending(kg)
BU30-225	8	1.5	225	175	215		12
-300	11	2.2	300	250	290		15
-375	14	2.8	375	325	365		17
-600	23	4.8	600	550	590		22
BU36-350	9	2.2	350	260	300	325	8
-450	12	3.1	450	360	400	425	10
-550	15	4.0	550	460	500	525	12
-650	18	4.9	650	560	600	625	14
-750	21	5.8	750	660	700	725	16
-850	24	6.7	850	760	800	825	18
-950	27	7.6	950	860	900	925	20
-1050	30	8.5	1050	960	1000	1025	22
BU50-358	6	3.8	358	250	300	342	10
-458	8	5.4	458	350	400	442	10
-558	10	7.0	558	450	500	542	12
-658	12	8.6	658	550	600	642	12
-758	14	10.2	758	650	700	742	12
-858	16	11.8	858	750	800	842	14
-958	18	13.4	958	850	900	942	14
-1058	20	15.0	1058	950	1000	1042	15

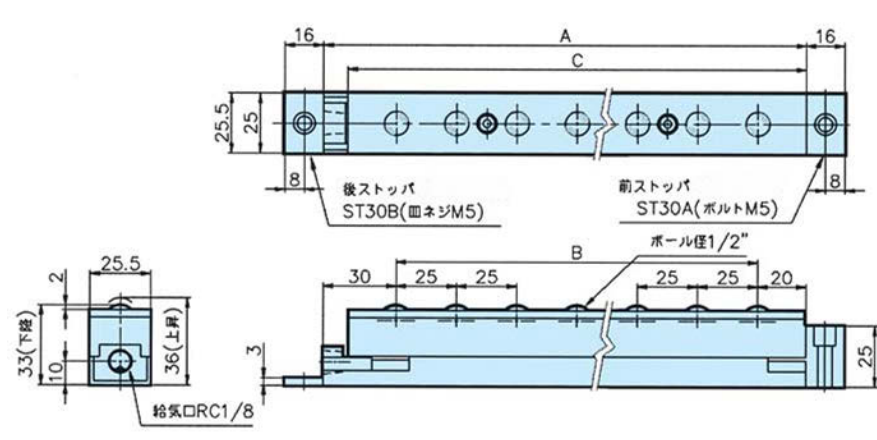
※Lift Power : Value when the air used of 0.5MPa.

※Min. Descending(kg) : The mass that descends by conveyed object from ascending stroke of 2mm after exhausting the air.

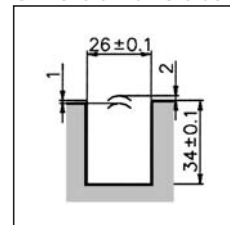
※Maximum total length : BU30(800mm)/BU36(1500mm)/BU50(1800mm)can be manufactured as aspecial apcification.

## ● External dimensional Drawing

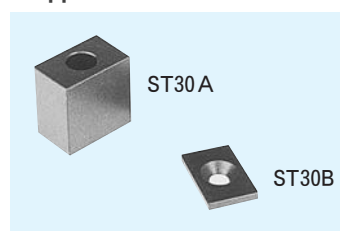
### BU30



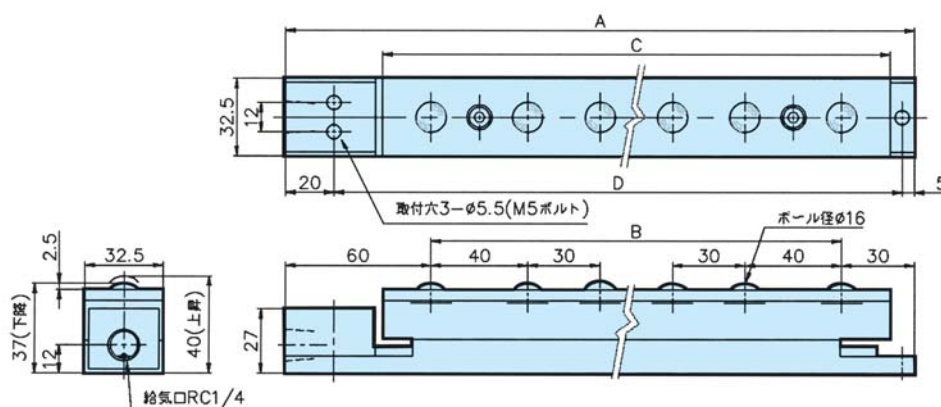
Dimension of U-slot



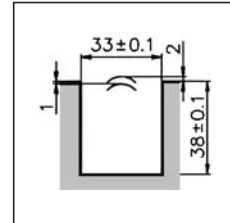
Stopper



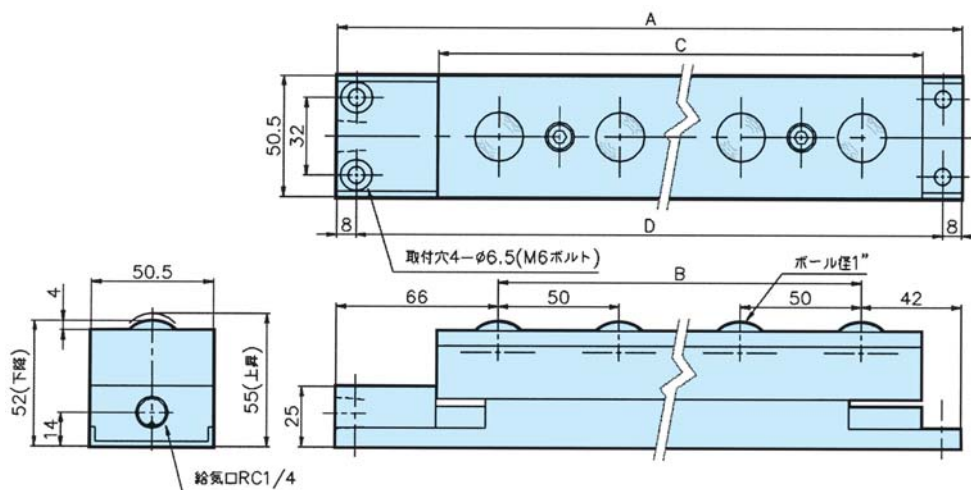
### BU36



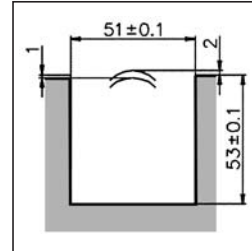
Dimension of U-slot



### BU50



Dimension of U-slot



## Ball Air Lifter

U-slot

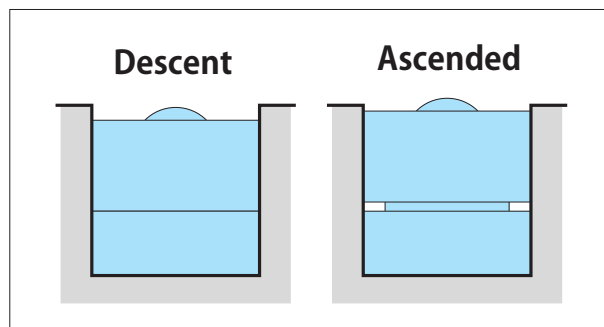
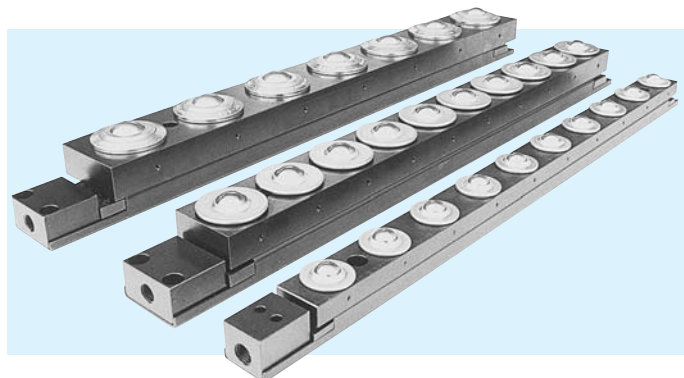
**BU** **515** (EURO Unit)  
**522** (EURO Unit)  
**805** (HEAVY DUTY Unit)

## Ball Transfer Unit inset type

- Large allowable load/ball
- Suitable for Heavy Load

## Range of Load/piece

Light(2.2kN)~ Heavy(15.0kN)



## ● Specification

Type		BU515	BU522	BU805
Working Pressure Range	MPa(kgf/cm <sup>2</sup> )	0.05 ~ 0.6 (0.5 ~ 6.1)		
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> )	0.8 (8.2)		
Temperature	°C	-5 ~ +50		
Fluid used		Air (No need to refuel)		
Ball Diameter	φ mm	15.0	22.0	30.0
Allowable Mass/ball	kg	60	160	350
Lift Stroke	mm	3	4	4

※Lift Stroke: 4~10mm can be manufactured for BU522 and BU805 as a special version.

## ● Dimensions

Type	number of Balls	Lift Power(kN)	A	B	C	D	Min. descending(kg)
BU515-350	6	2.2	350	250	300	325	8
-450	8	3.1	450	350	400	425	10
-550	10	4.0	550	450	500	525	12
-650	12	4.9	650	550	600	625	14
-750	14	5.8	750	650	700	725	16
-850	16	6.7	850	750	800	825	18
-950	18	7.6	950	850	900	925	20
-1050	20	8.5	1050	950	1000	1025	22

※Max. Dynamic Loading of Ball Unit Type515(φ15) : 60kg

※Max. Total length : 1500mm

Type	number of Balls	Lift Power(kN)	A	B	C	D	Min. descending(kg)
BU522-358	6	3.8	358	250	300	342	10
-458	8	5.4	458	350	400	442	10
-558	10	7.0	558	450	500	542	12
-658	12	8.6	658	550	600	642	12
-758	14	10.2	758	650	700	742	12
-858	16	11.8	858	750	800	842	14
-958	18	13.4	958	850	900	942	14
-1058	20	15.0	1058	950	1000	1042	15

※Recommended Height of slot : 52.8~53.8mm

※Max. Dynamic Loading of Ball Unit Type522 (φ22) : 160kg

※Max. Total length : 1800mm

Type	number of Balls	Lift Power(kN)	A	B	C	D	Min. descending(kg)
BU805-432	5	5.1	432	300	375	416	10
-582	7	7.3	582	450	525	566	10
-732	9	10.0	732	600	675	716	12
-882	11	12.0	882	750	825	866	14
-1032	13	15.0	1032	900	975	1016	15

※Recommended Height of slot : 59.8~60.8mm

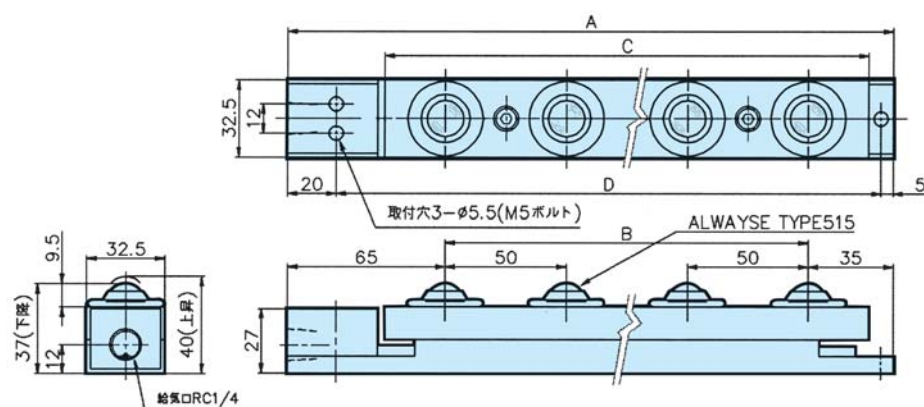
※Max. Dynamic Loading of Ball Unit Type805-30-16(φ30) : 350kg(Stainless ball)

※Max. Total length : 1800mm

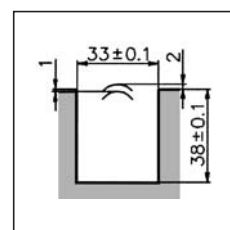
※Min. Descending(kg) : The mass that descends by conveyed object from ascending stroke of 2mm after exhausting the air.

## ● External dimensional Drawing

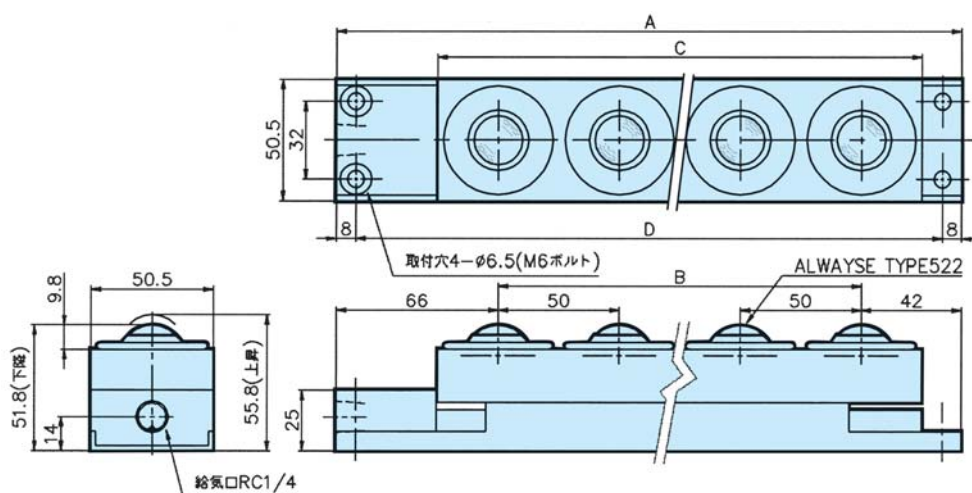
### BU515



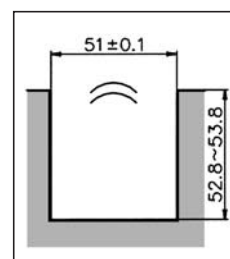
Dimension of U-slot



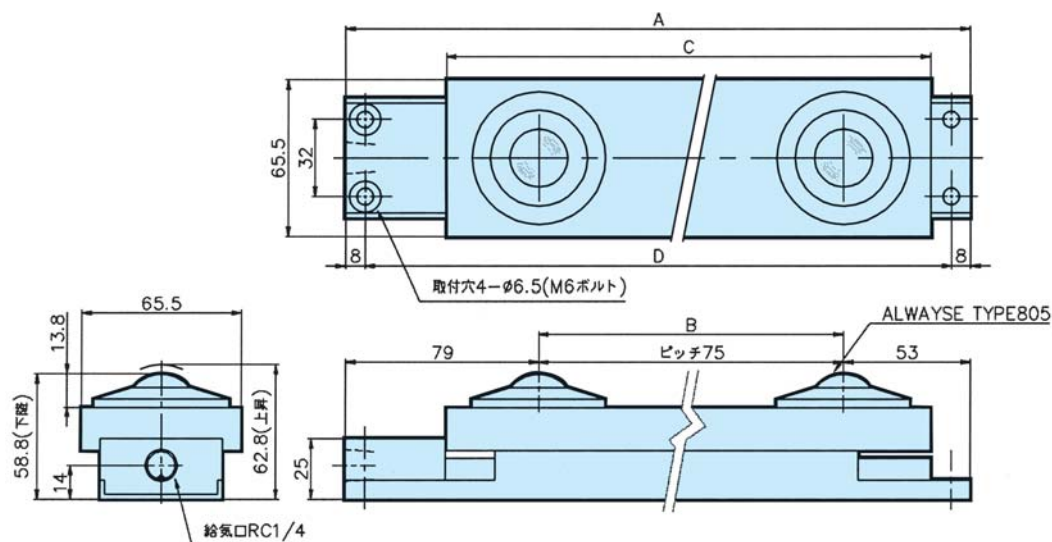
### BU522



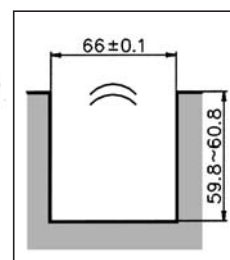
Dimension of U-slot



### BU805



Dimension of U-slot





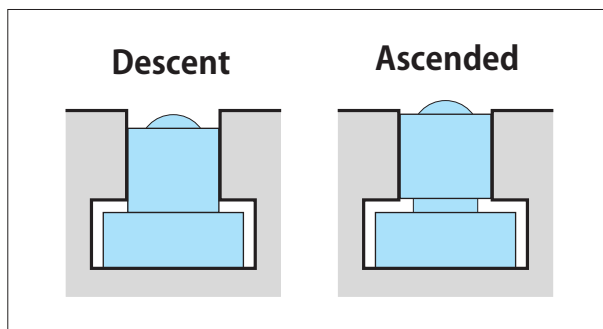
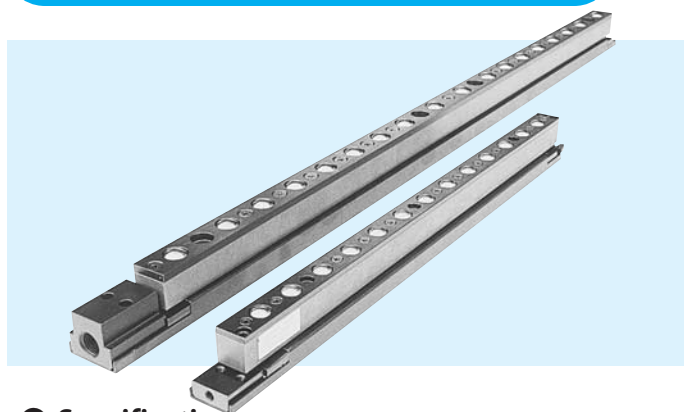
## Ball Air Lifter

T-slot

# BT 30 36

Suitable for T-slot of press machine

Range of Load/piece  
Light(1.5kN)~ Heavy(15.0kN)



### ● Specification

Type	BT30	BT36
Working Pressure Range	MPa(kgf/cm <sup>2</sup> ) 0.05 ~ 0.6 (0.5 ~ 6.1)	
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> ) 0.8 (8.2)	
Temperature	°C -5 ~ +50	
Fluid used	Air (No need to refuel)	
Ball Diameter	φ mm 12.7 (1/2")	16.0
Allowable Mass/ball	kg 20	30
Lift Stroke	mm 3	

※ Please contact us inquiry for special ball (Stainless, Nylon, other resin ).

### ● Dimensions

Type	number of Balls	Lift Power(kN)	A	B	C	D	Min. descending(kg)
BT30-225	8	1.5	225	175	215		12
-300	11	2.2	300	250	290		15
-375	14	2.8	375	325	365		17
-600	23	4.8	600	550	590		22
BT36-350	9	2.2	350	260	300	325	8
-450	12	3.1	450	360	400	425	10
-550	15	4.0	550	460	500	525	12
-650	18	4.9	650	560	600	625	14
-750	21	5.8	750	660	700	725	16
-850	24	6.7	850	760	800	825	18
-950	27	7.6	950	860	900	925	20
-1050	30	8.5	1050	960	1000	1025	22

※ Lift Power : Value when the air used of 0.5MPa.

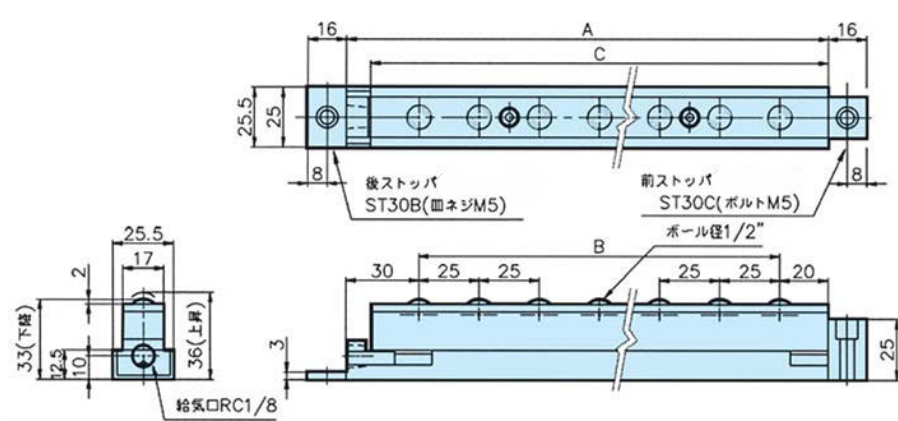
※ Min. Descending(kg) : The mass that descends by conveyed object with an ascending stroke of 2mm after exhausting the air.

※ Maximum total length : BT30(800mm)/BT36(1500mm) can be manufactured as a special specification.

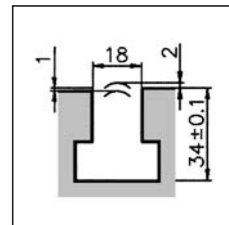


## ● External dimensional Drawing

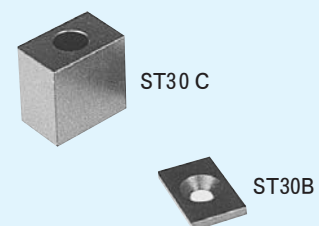
### BT30



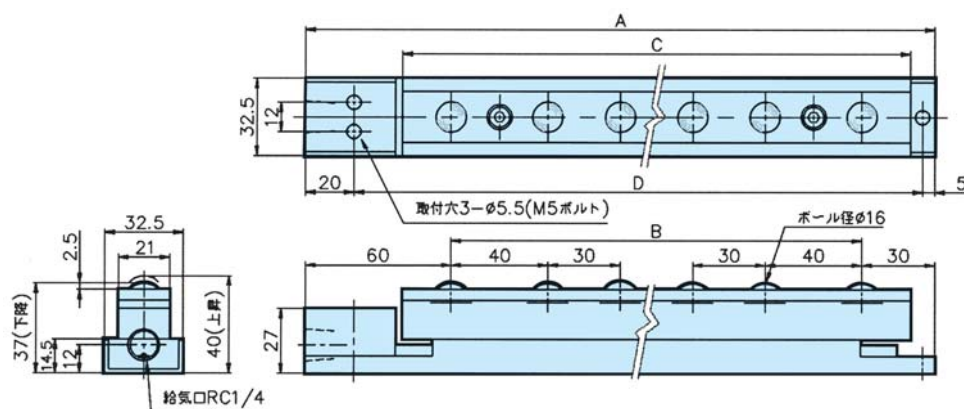
Dimension of T-slot



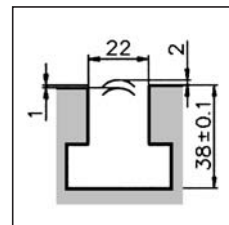
Stopper



### BT36



Dimension of T-slot



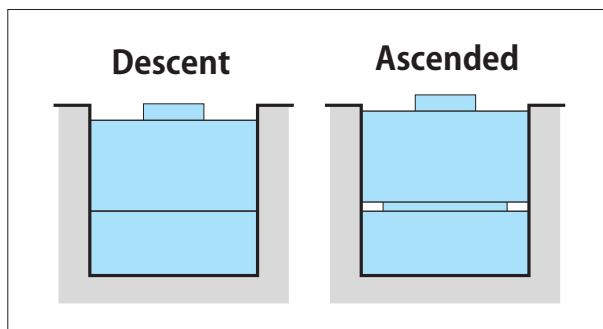
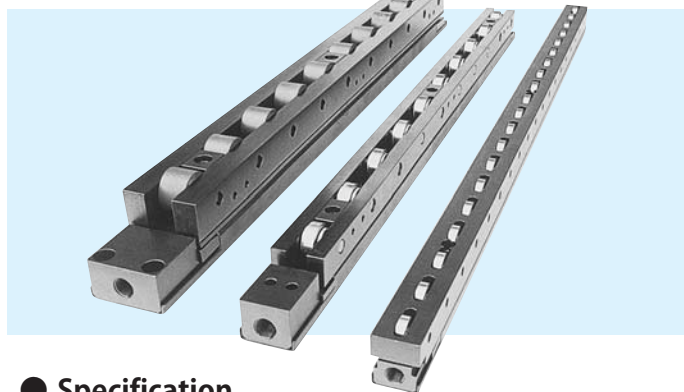
## Roller Air Lifter

U-slot

# RU

30  
36  
50

Range of Load/piece  
Light(1.5kN)~ Heavy(15.0kN)



### ● Specification

Type		RU30	RU36	RU50
Working Pressure Range	MPa(kgf/cm <sup>2</sup> )		0.05 ~ 0.6 (0.5 ~ 6.1)	
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> )		0.8 (8.2)	
Temperature	°C		-5 ~ +50	
Fluid used		Air (No need to refuel)		
Ball Diameter	φ mm	16	22	26
Allowable Mass/ball	kg	60	75	250
Lift Stroke	mm		3	

※Lift Stroke: 4~10mm can be manufactured only for RU50 as a special version.

※Please contact us inquiry for special rollers(Stainless, Nylon, other resin).

### ● Dimensions

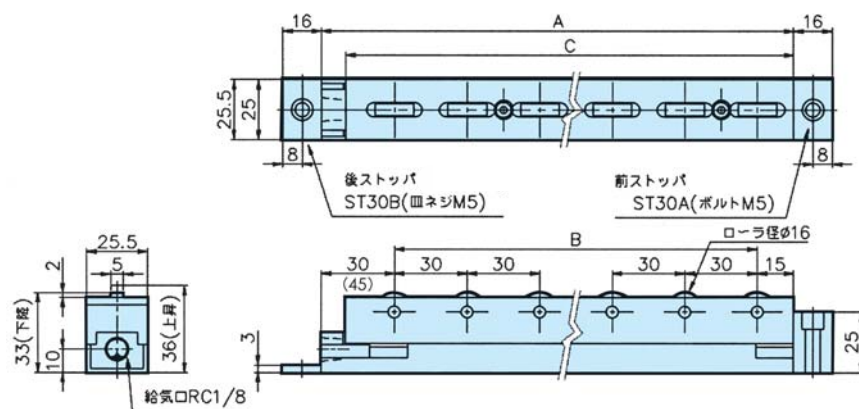
Type	number of Roller	Lift Power(kN)	A	B	C	D	Min. descending(kg)
RU30-225	7	1.5	225	180	215		12
-300	9	2.2	300	240	290		15
-375	12	2.8	375	330	365		17
-600	19	4.8	600	540	590		22
RU36-350	6	2.2	350	250	300	325	8
-450	8	3.1	450	350	400	425	10
-550	10	4.0	550	450	500	525	12
-650	12	4.9	650	550	600	625	14
-750	14	5.8	750	650	700	725	16
-850	16	6.7	850	750	800	825	18
-950	18	7.6	950	850	900	925	20
-1050	20	8.5	1050	950	1000	1025	22
RU50-358	6	3.8	358	250	300	342	10
-458	8	5.4	458	350	400	442	10
-558	10	7.0	558	450	500	542	12
-658	12	8.6	658	550	600	642	12
-758	14	10.2	758	650	700	742	12
-858	16	11.8	858	750	800	842	14
-958	18	13.4	958	850	900	942	14
-1058	20	15.0	1058	950	1000	1042	15

※Min. Descending(kg) : The mass that descends by conveyed object with an ascending stroke of 2mm after exhausting the air.

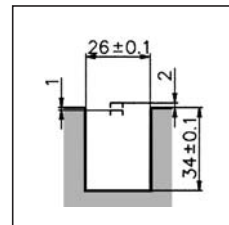
※Maximum total length : RU30(800mm)/RU36(1500mm)/RU50(1800mm) can be manufactured as a special specification.

## ● External dimensional Drawing

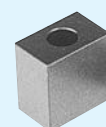
### RU30



Dimension of U-slot



Stopper

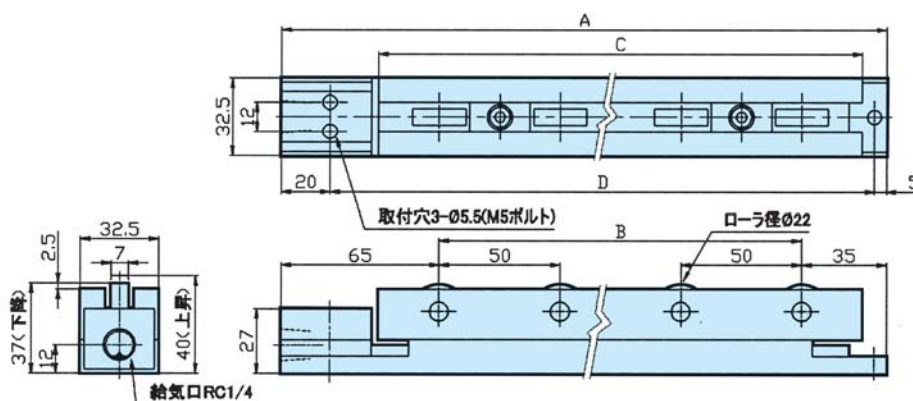


ST30A

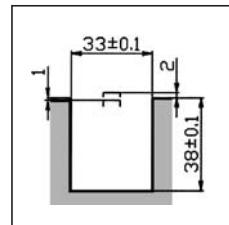


ST30B

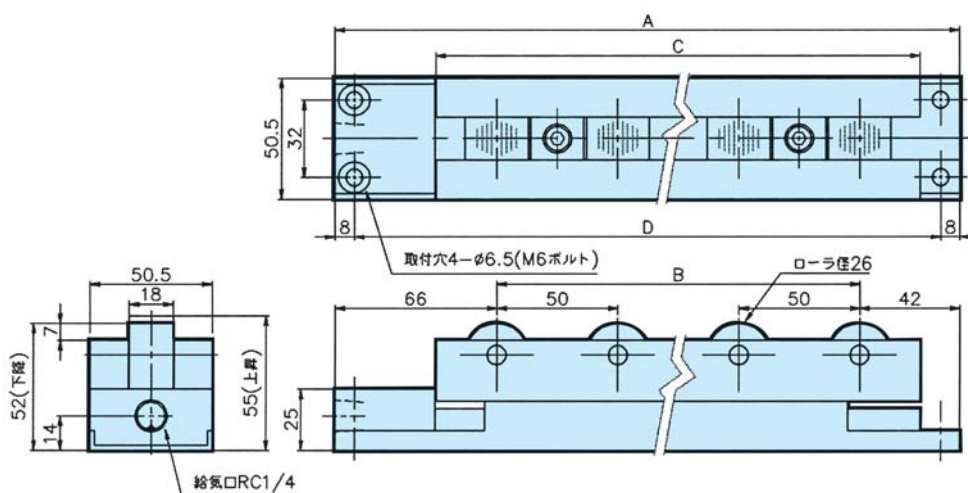
### RU36



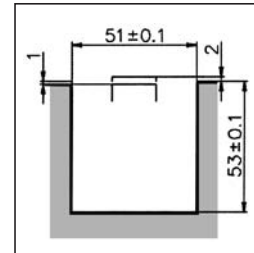
Dimension of U-slot



### RU-50



Dimension of U-slot



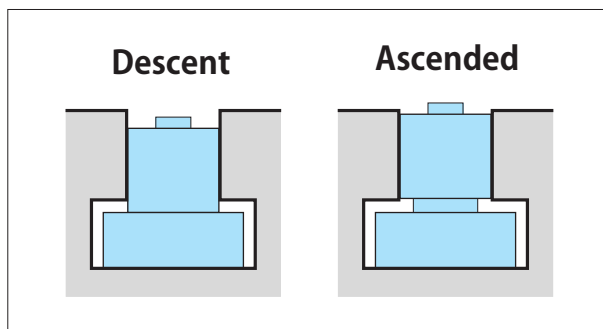
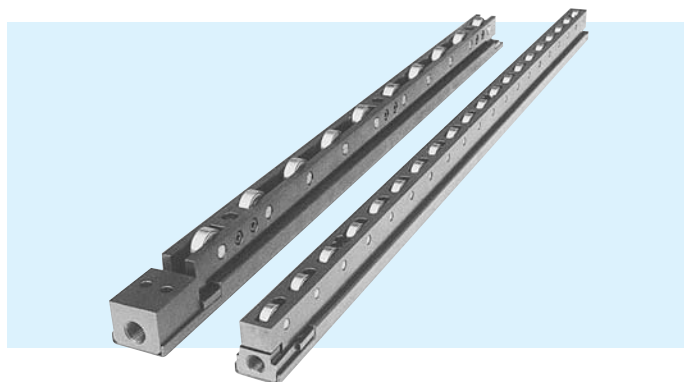
## Roller Air Lifter

T-slot

# RT 30 36

Suitable for T-slot of press machine

Range of Load/piece  
Light(1.5kN)~ Heavy(8.5kN)



### ● Specification

Type		RT30	RT36
Working Pressure Range	MPa(kgf/cm <sup>2</sup> )	0.05 ~ 0.6 (0.5 ~ 6.1)	
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> )	0.8 (8.2)	
Temperature	°C	-5 ~ +50	
Fluid used		Air (No need to refuel)	
Ball Diamiter	φ mm	16	22
Allowable Mass/ball	kg	60	75
Lift Stroke	mm	3	

※Please contact us inquiry for special rollers(Stainless, Nylon, other resin).

### ● Dimensions

Type	number of Roller	Lift Power(kN)	A	B	C	D	Min. descending(kg)
RT30-225	7	1.5	225	180	215		12
-300	9	2.2	300	240	290		15
-375	12	2.8	375	330	365		17
-600	19	4.8	600	540	590		22
RT36-350	6	2.2	350	250	300	325	8
-450	8	3.1	450	350	400	425	10
-550	10	4.0	550	450	500	525	12
-650	12	4.9	650	550	600	625	14
-750	14	5.8	750	650	700	725	16
-850	16	6.7	850	750	800	825	18
-950	18	7.6	950	850	900	925	20
-1050	20	8.5	1050	950	1000	1025	22

※Lift Power : Value when the air used of 0.5MPa.

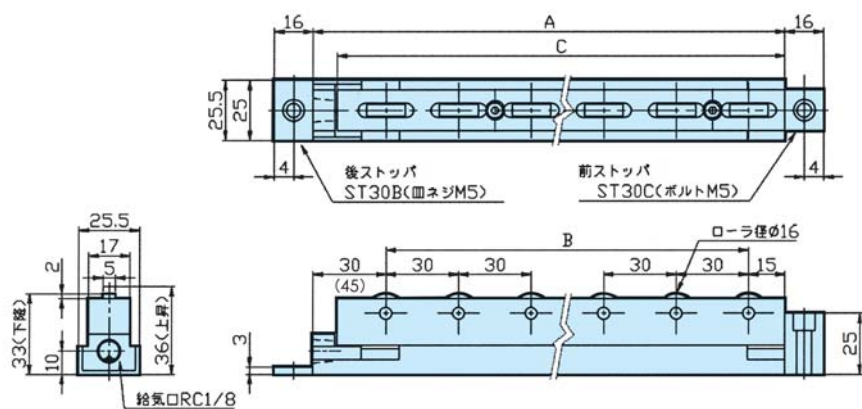
※Min. Descending(kg) : The mass that descends by conveyed object with an ascending stroke of 2mm after exhausting the air.

※Maximum total length : RT30(800mm)/RT36(1500mm) can be manufactured as a special specification.

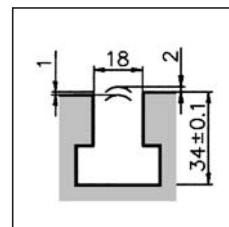


## ● External dimensional Drawing

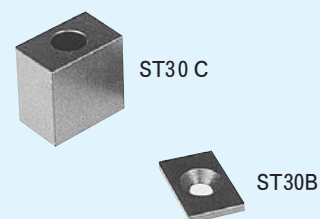
### RT30



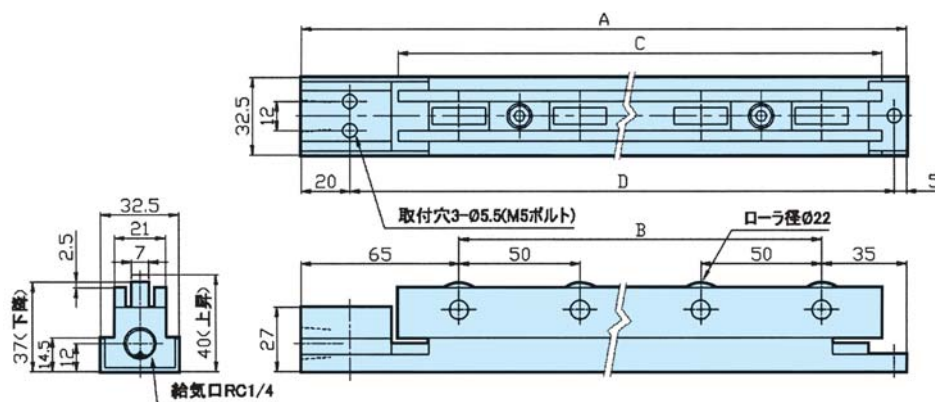
Dimension of T-slot



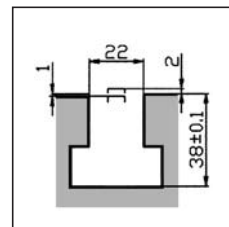
Stopper



### RT36



Dimension of T-slot



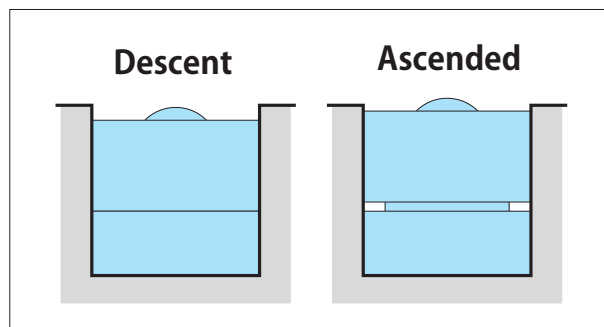
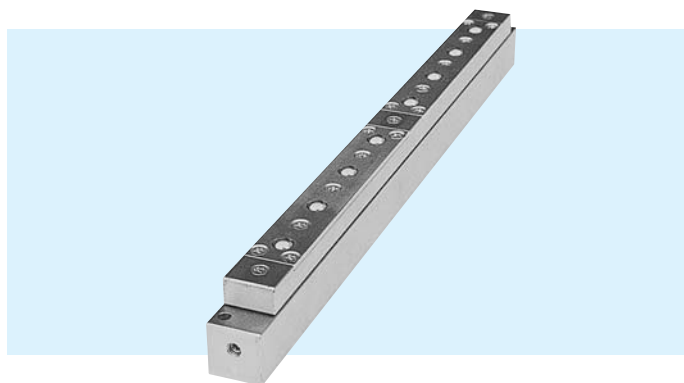
## Clean room Ball Air Lifter

Stainless

# BH20

Types other than BH20-300 are made to order.

Please contact to us with your specifications for estimations.



### ● Specification

Type		BH20-300
Working Pressure Range	MPa(kgf/cm <sup>2</sup> )	0.5 (5.1)
Withstandable Pressure	MPa(kgf/cm <sup>2</sup> )	0.8 (8.2)
Temperature	°C	-5 ~ +50
Fluid used		Air (No need to refuel)
Ball Diameter	φ mm	8
Allowable Mass/ball	kg	
Lift Stroke	mm	5

### ● Dimensions

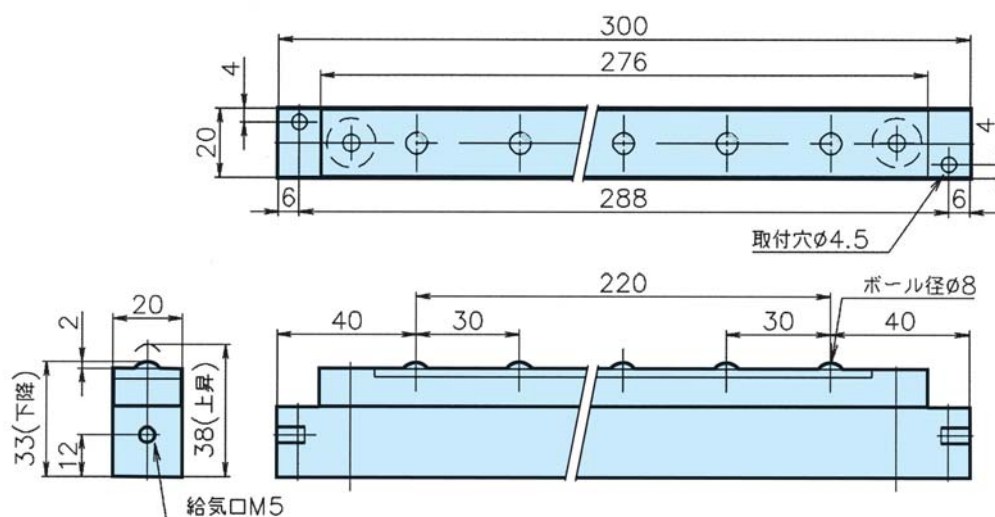
Type	number of Roller	Lift Power(kN)	Air pressure	Mass(kg)
BH20-300	8	0.2	0.5MPa	1.7

Body :Stainless

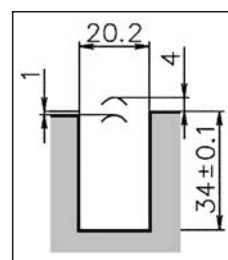
Ball: Stainless/Nylon/Other resin

### ● External dimensional Drawing

#### BH20-300

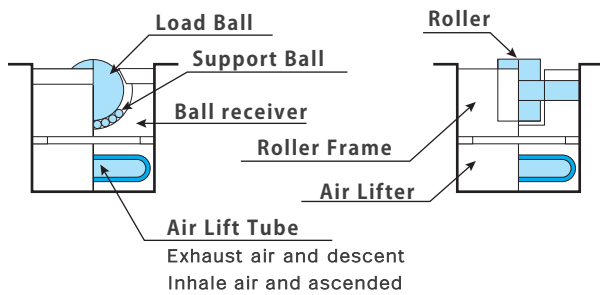


Dimension of U-slot



## Common Specifications

### Structure



### Ball

**Material** Steel Ball (Load ball/Support ball) SUJ2

**Hardness** HRC62~67

**Made to order** Please contact us inquiry for special balls(Stainless, Nylon, other resin).

**Starting resistance value**  
(Friction Coefficient  $\mu$ )

HRC62 :  $\mu 0.01 \sim 0.02$   
SS400 :  $\mu 0.02 \sim 0.03$

It can be move lightly with small starting resistance if the transported object has a hard and smooth surface bottom.

### Roller

**Material** Ball bearing (RU30/RT30,RU36/RT36)  
Needle bearing with outer lace(RU50)  
(Nitriding treatment)

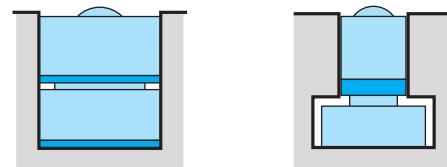
**Made to order** Please contact us inquiry for special rollers(Stainless, Nylon, other resin).

**Starting resistance value**  
(Friction coefficient  $\mu$ )  $\mu = 0.01 \sim 0.02$

### Air Lifter

<b>Material</b>	Air Lifter	S55C,SS400(Blackening)
	Ball receiver	S55C(Soft nitriding) Surface hardness HRC58~62
	Roller Frame	S55C(Blackening)
	Air Lift Tube	Nylon cloth,CR

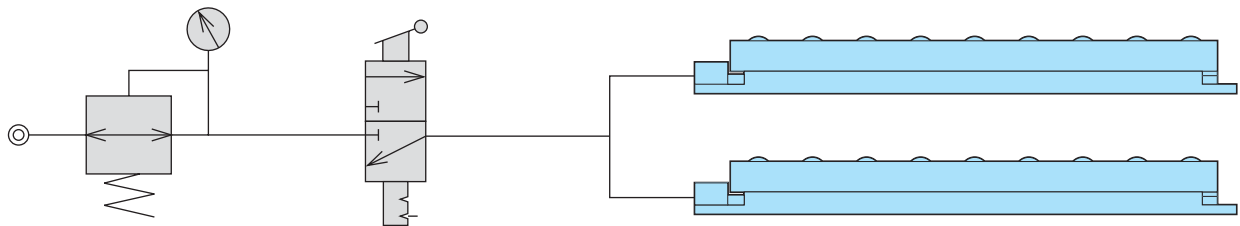
### Spacer



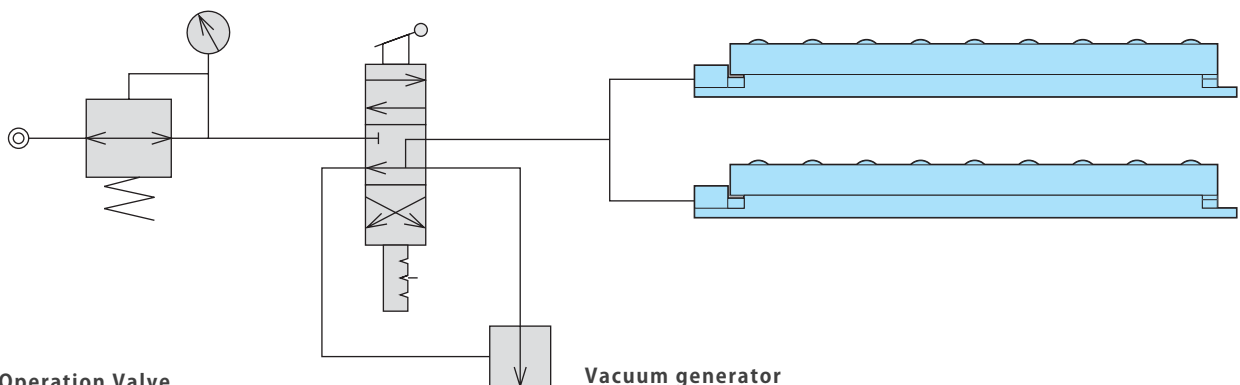
Add spacers in the middle and bottom in case slot is deep.

## Air Circuit

### Normal Air Circuit (Descends due to the mass of the transported object.)



### Forced Descent Circuit (Forced descent by vacuum generator.)



※ **Operation Valve**  
Use either manual valve or solenoid valve.

※ **Forced Descent Circuit(Evacuate)**  
Descends by the adhering of the inside of the air lift tube.



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