ABBA
Linear TechCo.,LTD.

Made in Taiwan

انواع ریل و واگن (کارخانه شرکت SKF ساخت تایوان)

از سایز 15 mm تا 55 mm

1.1 Ten Characteristics

Ten Characteristics

Built-in long life lubrication (patent)

Equivalent loading capacity in four directions

linear guideSmooth running due to new ball re-circulation (patent)

High rigidity : 4-row angular contact

International standard diamension

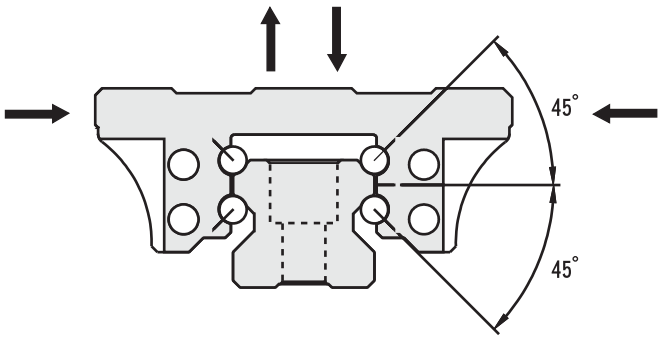
High accuracy, low friction, low maintenance

High speed, low noise

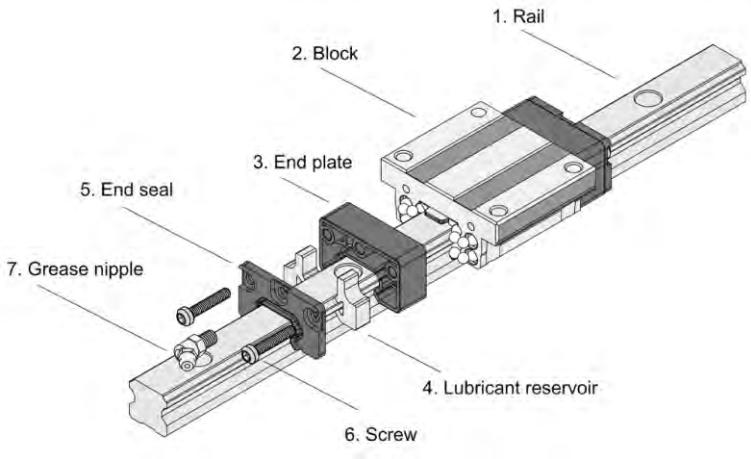
Integral all-round sealing

Interchangeability

Green production



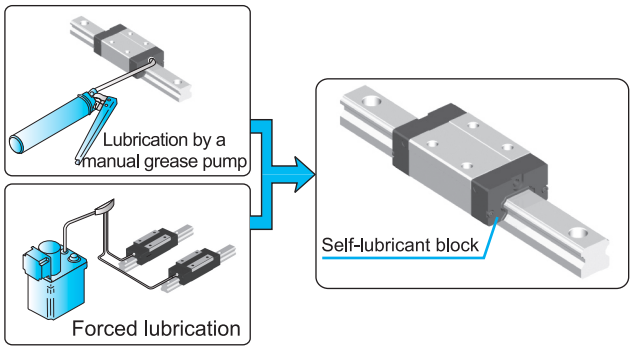
1.2 Construction of Self-Lubricant Linear Guideway



1.3 Four Advantages of Self-Lubricant Block

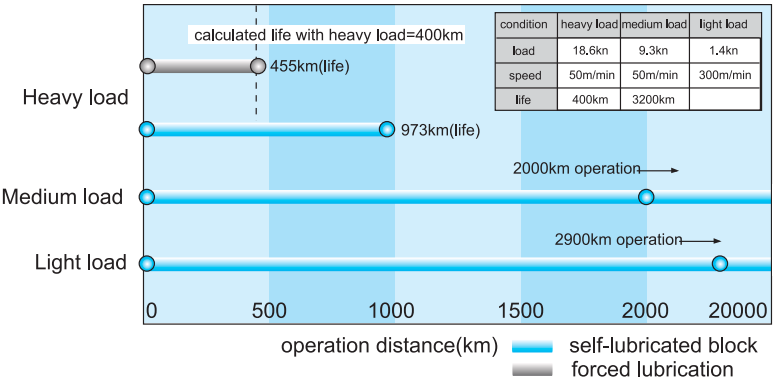
Advantage 1

Maintenance free - No need for frequent periodic lubrication or automatic lubrication systems.



Advantage 2

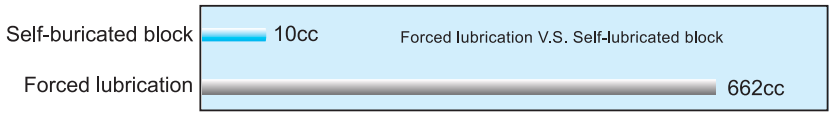
Extended intervals between maintenance.



condition	heavy load	medium load	light load
load	18.6kn	9.3kn	1.4kn
speed	50m/min	50m/min	300m/min
life	400km	3200km	

Advantage 3

Curtailing lubrication cost.

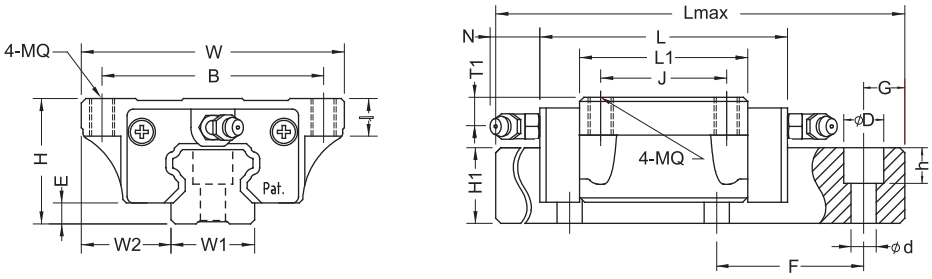


Forced lubrication:0.03cc/6min X 8h/day X 276day X 1year=662cc
Operation distance=3500km/year

Advantage 4

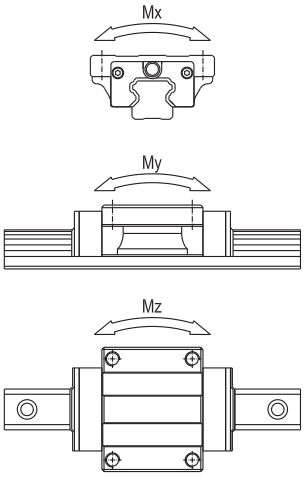
No oil leakage concern, easy for cleaning.

1.4 Interchangeability Notice



BRC-A0

1. Check the mounting height (H)
2. Check the mounting width (W)
3. Check the block length (L)
4. Check the block's body size (L1)
5. Check the hole Diameter and pitches on the block (BxJ)
6. Check the rail width (W1)
7. Check the pitch of the rail (F)
8. Check the hole Diameter and rail size (d x D x h)
9. When a specific length is required, please advise the (G) values in your order.



1.5 Accuracy Selection

We have five grades for your selection:

Normal/ High/ Precision/ Super-Precision/ Ultra Precision

	Application	Accuracy Grade				
		N	H	P	SP	UP
NC Machine tools	Machining Center			○	○	
	Lathe			○	○	
	Milling Machine			○	○	
	Boring Machine			○	○	○
	Jig Borer				○	○
	Grinding Machine			○	○	○
	Electro-discharge Machine			○	○	○
	Punching Press Machine		○	○		
	Laser Cutting Machine		○	○	○	
	Wood Working Machine	○	○	○		
	NC Drilling Machine		○	○		
	Milling Center		○	○		
	Packaging Machine	○				
	ATC	○				
	Wire Cut Machine			○	○	
	Grinding Wheel Machine				○	○

	Application	Accuracy Grade				
		N	H	P	SP	UP
Industrial Robots	Orthogonal Type	○	○	○		
	Multi-joint Type	○	○			
Semiconductor Machine	Wire Bonder			○	○	
	Prober			○	○	○
	Inserter Machine		○	○		
	PCB Driller		○	○	○	
Other Machines	Injection Molding Machine	○	○			
	Measuring Machine			○	○	○
	Business Machine	○	○			
	Transporting Machine	○	○			
	X-Y Table		○	○	○	
	Painting Machine	○	○			
	Welding Machine	○	○			
	Medical Equipment	○	○			
	Digitizer		○	○	○	
	Test Equipment			○	○	○

1.6 Accuracy Standard

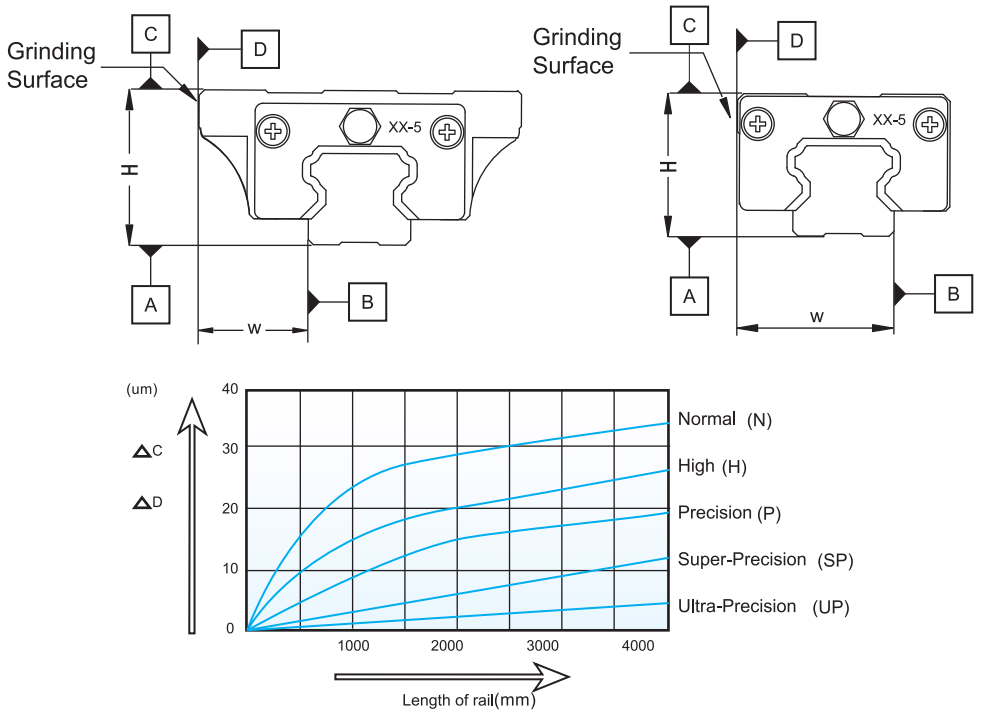


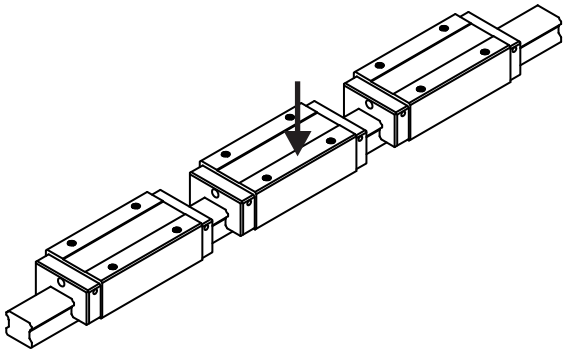
Fig.1 BR rail length and running parallelism

ITEM	GRADE				
	Normal (N)	High (H)	Precision (P)	Super-Precision (SP)	Ultra-Precision (UP)
Tolerance of height (H)	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
Tolerance of width (W)	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
Difference of heights (△H)	0.03	0.02	0.01	0.005	0.003
Difference of widths (△W)	0.03	0.02	0.01	0.005	0.003
Running parallelism of BR Block between surface [A] & [C]	△C Refer to Fig.1				
Running parallelism of BR Block between surface [B] & [D]	△D Refer to Fig.1				

1.6.1 Definitions

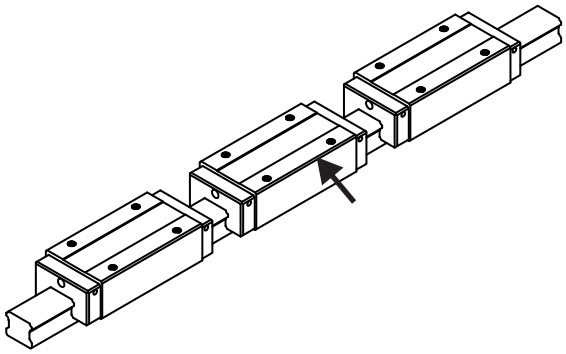
(1) Difference of heights ΔH

The difference is obtained by measuring the different blocks on the same rail position in terms of the difference between maximum heights (H).



(2) Difference of widths

The difference is obtained by measuring the different blocks on the same rail position in terms of the difference between the maximum and minimum widths (W).



(3) Running parallelism

This is refer to the running parallelism tolerance between the two reference planes of rail and block when the block is moved along the entire rail length, the rail being screwed to the reference plane.

1.7 Preload

1.7.1 Preload and rigidity

To adjust a linear guideway to the specific demands of a given application, it is advisable to choose an appropriate preload. This will positively effect the operating behavior of the entire linear guidance system. Preload can enhance the performance of an entire linear guidance system and increase the rigidity of the block under load.

1.7.2 Preload and rigidity

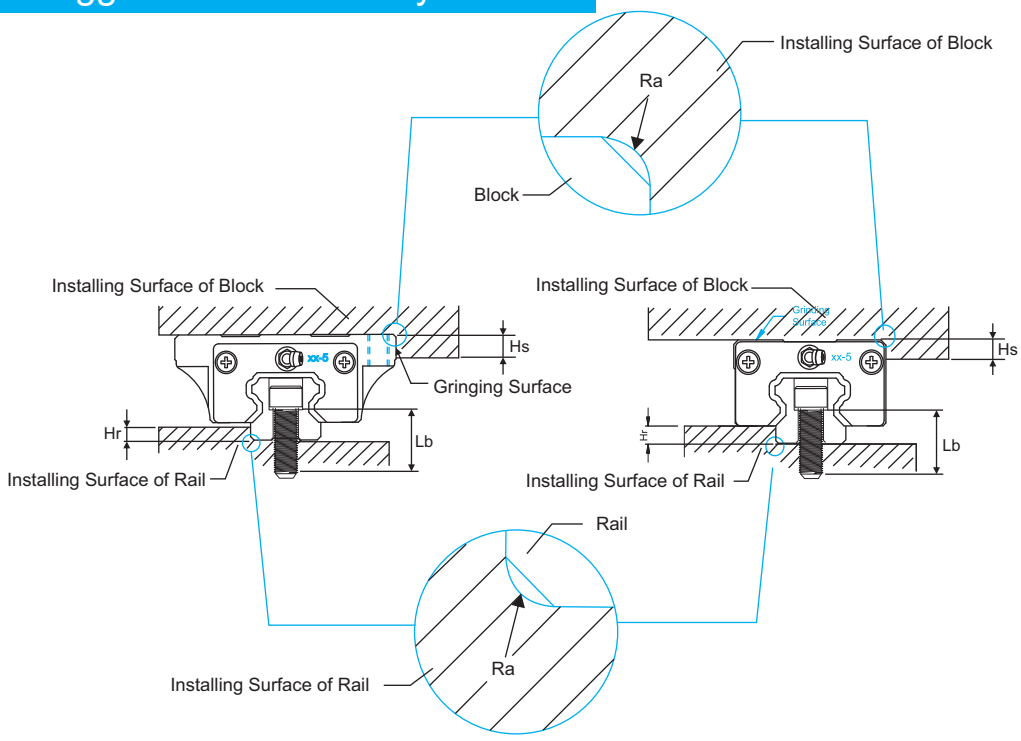
Preload is determined by the diameter of the balls and increase with larger diameter.

BR linear guideway are available in five classes. For additional information, refer to table 1.7.1.

Table 1.7.1 Preload class and preload force

GRADE	ITEM	
	Symbol	Preload force
Clearance	ZF	0
No Preload	Z0	0
Light Preload	Z1	0.02 C
Middle Preload	Z2	0.05 C
Heavy Preload	Z3	0.07 C

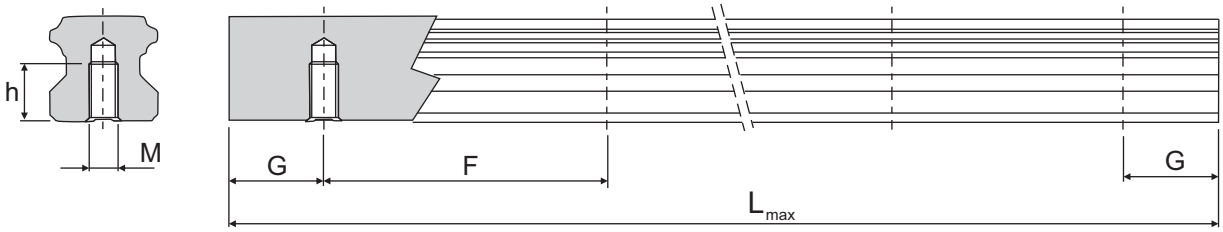
1.8 Suggestion in Assembly



ITEM	Maximum Fillet (Ra)	Maximum Height (Hr) rail shoulder	Maximum Height (Hs) block shoulder	Rail Bolt Length (Lb) suggestion
BR-15	0.8	4	5	M4*16
BR-20	0.8	4.5	6	M5*20
BR-25	1.2	6	7	M6*25
BR-30	1.2	8	8	M8*30
BR-35	1.2	8.5	9	M8*30
BR-45	1.6	12	11	M12*40

Unit : mm

1.9 Dimension of Blind Hole

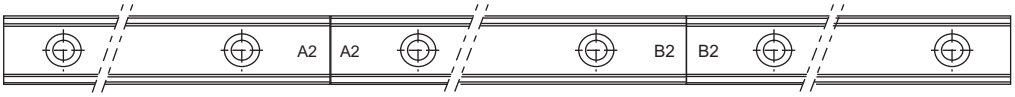


Nominal Size	Screw Size (M)	Screw Thread h (mm)
15	M5	8
20	M6	10
25	M6	12
30	M8	15
35	M8	17
45	M12	24

1.10 Jointed Rail

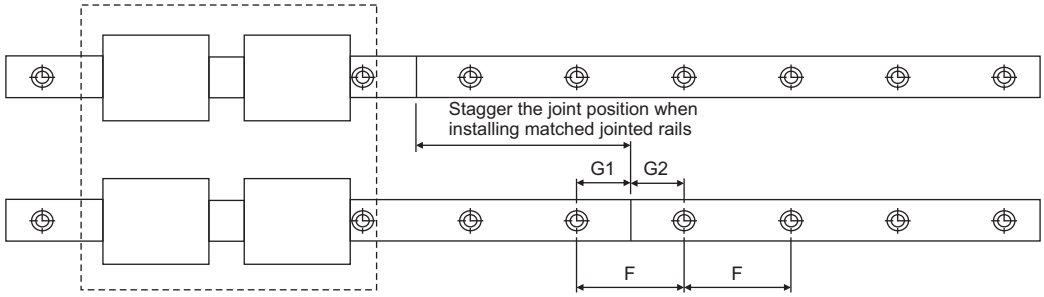
Jointed rails can be ordered if a rail length is required that exceeds standard and maximum length of rail. Refer to below for markings.

Master rail



Subsidiary rail

(2) Toavoid accuracy problems to discrepancies between the two rails such as matched pair, butt-joint rails, the jointed positions should be staggered as below.



1.11 Lubrication

The objective of lubrication includes the reduction of friction among the rolling elements as well as between the rolling elements and the raceway, prevention of sintering, reduction of wear, and the prevention of rust by forming a film over the surfaces. To maximize the performance of a linear system, the lubricant type and a lubrication method appropriate for the operating environment should be selected.

1.11.1 Factory pre-lubrication

BR blocks are factory pre-lubricated with Grease No. 2 and the lubricant reservoir is factory pre-lubricated with Grease No. 0. The technical data of grease can be found in table 1.11.12.

A preservative is applied to the BR rails and blocks to protect them during transport, storage and mounting. When using the recommended lubricants, it is not necessary to remove this preservative.

1.11.2 Initial lubrication

Initial lubrication is not required, as BR linear guideway is delivered pre-lubricated and ready to install unless specified otherwise. In cases where a different type of grease is required, the blocks should be thoroughly cleaned and regreased prior to mounting. Please refer to table 1.11.1 for appropriate grease quantity.

This initial lubrication has to be applied according to the steps blow :

1. Grease each block according to the quantities listed in table 1.11.1

2. Move the block three times backwards and forwards with strock=block length

3. Repeat steps 1 and 2 again , twice

4. Check if a lubricating film is visible on the rail.

1.11.3 Grease re-lubrication

Re-lubrication intervals recommendation

Nominal size 30 and below : per 100km; nominal size 35 and above : per 40km

Make supplimentary periodically per 3 months.

1.11.4 Oil re-lubrication

First time re-lubrication : apply to whole internal block, please refer to table 1.11.1 for appropriate grease amount.

Re-lubrication amount : Q=n/150 (cm3/hrs)

n: Nominal size of rail (mm)

Recommended lubricaition oil spec. ISO VG32~68 ; ISO VG68~220

Recommended Re-lubrication Amount					unit : ml
Nominal size	Amount	Nominal size	Amount	Nominal size	Amount
BRC15A0	2~3	BRC25R0	3~4	BRD35A0	6~8
BRC15R0		BRC25U0	2~3	BRD35R0	
BRC15U0		BRC25SU		BRD35U0	
BRC15SU	1~2	BRC25LA	4~6	BRD35SU	4~6
BRC20A0	2~3	BRC25LR		BRD35LA	7~10
BRC20R0		BRC30A0		BRD35LR	
BRC20U0		BRC30R0		BRD45A0	9~14
BRC20SU		BRC30U0		BRD45R0	
BRC20LA	3~4	BRC30SU	3~5	BRD45U0	
BRC20LR		BRC30LA	6~8	BRD45LA	11~17
BRC25A0		BRC30LR		BRD45LR	

Table 1.11.1

1.11.5 Grease Lubrication No. and Spec

NGLI item	No.0	No.0
Drop point (C°)	205	206
Penetration (60 worked, 1/10mm)	378	282
Penetration (1000 worked, 1/10mm)	382	288
Apperance	Amber	Amber
Oxidation stability (100hrs, Pressure Drop, psi)	4	3
Oxidation stability (500hrs, Pressure Drop, psi)	8	7
Anti-corrosion Test	Pass	Pass
Copper plate corrosion (100° C, 24hrs)	1a	1a
Soap base	Lithium	Lithium
Rinsing water resistance (79.4°C , %)	N/A	2.5
Viscisity of base oil (cSt, @100°C)	164.5	164.5

Table 1.11.2

1.12 Technical Data

1.12.1 Definition of load rating

Basic static load rating : C0

We define the basic static load rating C0 as a static load of constant magnitude acting in one direction under which the sum of the permanent deformations of rolling elements and receway equals 0.0001 itemes of the diameter of the rolling elements.

Basic dynamic load rating : C

When each group of identical linear motion system is applied independently under the same condition, basic dynamic load rating C is the load of constant magnitude acting in one direction that results in a nominal life of 50 km.

1.12.2 Static safety coefficient : fs

Static safety factor fs is the ratio of the basic static load rating C0 to the load acting on the linear motion system.

$fs = (fc * C0) / P$ or $fs = (fc * M0) / M$

fs : static safety factor
fc : contact factor
C0 : basic static load rating
M0 : static permissible moment
P : design load
M : design moment

Reference value of static safety factor fs shown below :

Operating condition	Load condition	Minimum fs
Normally stationary	Small impact and deflection	1.0 ~ 1.3
	Impact or twisting load is applied	2.0 ~ 3.0
Normally moving	Small impact or twisting load is applied	1.0 ~ 1.5
	Impact or twisting load is applied	2.5 ~ 5.0

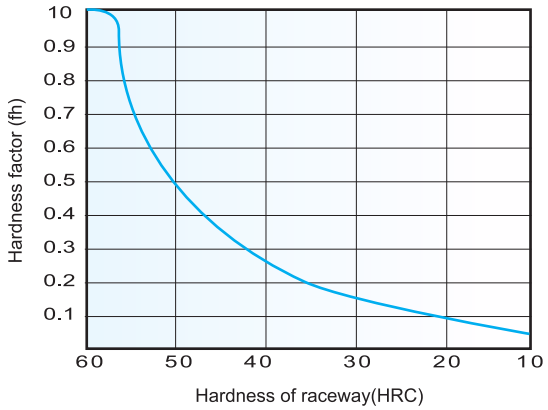
1.12.3 Contact coefficient : fc

In linear motion system, it is hard to obtain identical load distribution due to moments, errors and other factors on the mounting surfaces. When multiple blocks on a rail are used in close contact, the basic load ratings C and C0 corresponding with contact coefficients are shown below.

Number of blocks in close contact	Contact factor
2	0.81
3	0.72
4	0.66
5	0.61
Normal operation	1

1.12.4 Hardness coefficient : fh

For linear motion system, its optimum load carrying capacity is HRC 58 to 64 hardness on the raceways.
If the hardness is under HRC 58, both the basic dynamic load rating and basic static load rating should be multiplied by hardness coefficient fh.

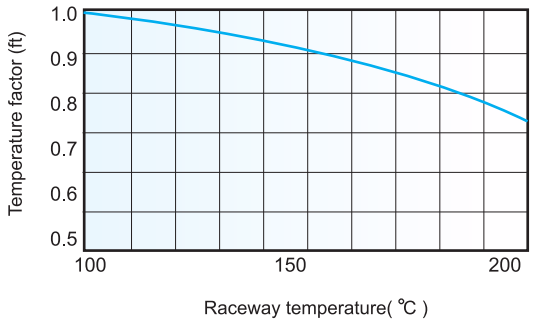


1.12.5 Temperature coefficient : fT

When a linear motion system is subject to temperature above 100 C, the temperature factor should be taken into consideration.

Note 1: When being used in the environment over 80 °C, the seals and end plates should be designed for high temperature operation.

Note 2: When used in above 120 °C, special treatment should be designed for stabilizing the dimension.



1.12.6 Load coefficient : fw

Impacts and vibrations	Speed (V)	Measured vibration (G)	fw
Without external Impacts or Vibrations	At low speed V<=15m/min	G<=0.5	1~1.5
Without significant Impacts or Vibrations	At medium speed 15<V<=60m/min	0.5<G<=1.0	1.5~2.0
With external Impacts or Vibrations	At high speed V>60m/min	1.0<G<=2.0	2.0~3.5

1.12.7 Formula of nominal life : L

Given the basic dynamic load rating C and the applied load P, the following formulas shows the nominal life L of a linear motion system using steel balls.

$$L = \left(\frac{fh * fT * fc}{fw} * \frac{C}{P} \right)^{3} * 50$$

L : nominal life
C : basic dynamic load rating
P : applied load

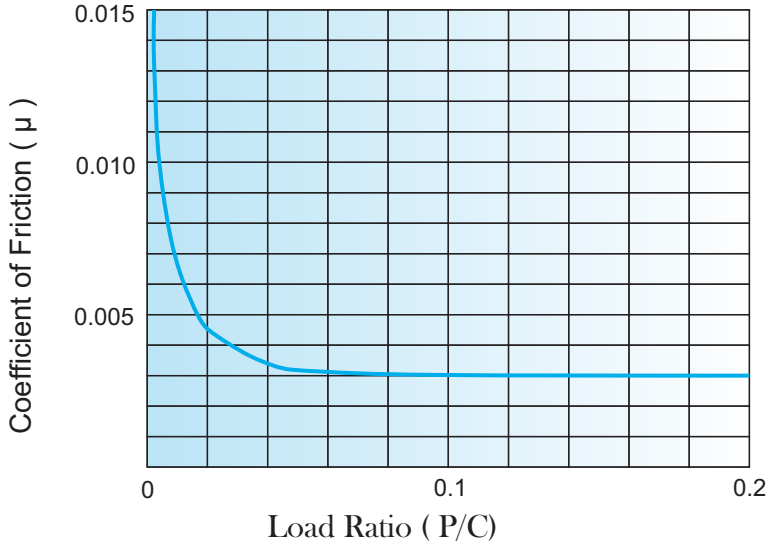
fh : Hardness factor
fT : Temperature factor
fc : Contact factor
fw : Load factor

1.13 Friction

$$F = \mu * w + f$$

F : Friction (kgf)
μ : Coefficient of Friction
w : Normal Load (kgf)
f : Friction Resistance of Standard seal

μ : Coefficient of Friction



P : Load (kgf)

C : Basic Dynamic Load Rating (kgf)

f : Friction Resistance of Standard Seal

Friction Resistance	
Model	Standard Seal
BR 15	0.4
BR20	0.5
BR25	0.6
BR30	0.8
BR35	0.95
BR45	1.4

Remark : The value is based on the block with standard seal at both ends and added with Grease No. 2.

Grease Nipple

Grease Nipple	
NL	Grease Nipple
NP	Plumbing Nipple
NA	Quick joint

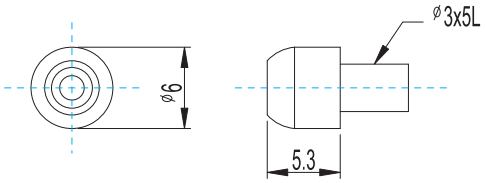
Angle	
A	0°
B	45°
C	90°

Note: ● : Appropriate

Shall you have any question,
please kindly contact ***ABBA***.

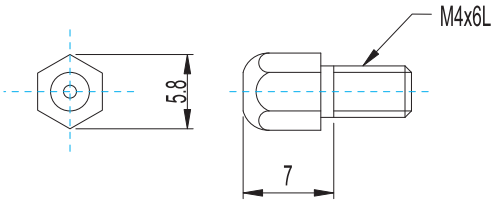
NLA01

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



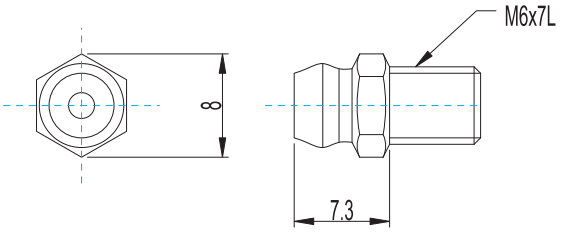
NLA02

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



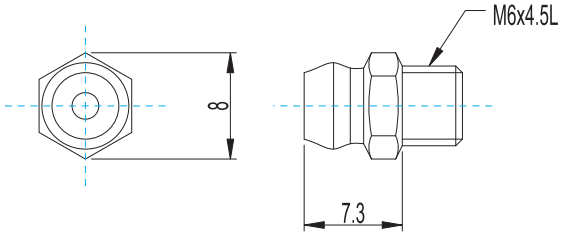
NLA04

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



NLA03

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



بلبرینگ اسکوئی

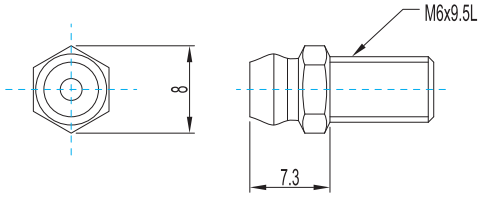
(اسکو صنعت تاوریژ)

OBC
Oskoyi Ballbearing Company

Grease Nipple

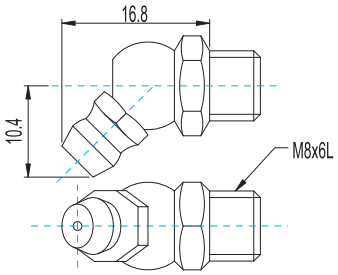
NLA05

Application	15		20		25		30	●	35	●	45	
Metal scraper	15		20		25	●	30	●	35	●	45	



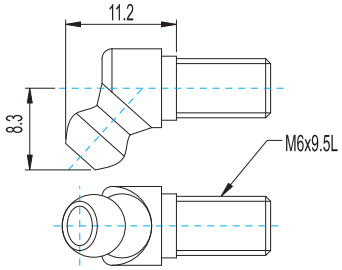
NLB04

Application	15		20		25		30		35		45	●
Metal scraper	15		20		25		30		35		45	●



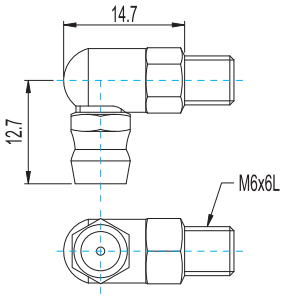
NLB01

Application	15		20	●	25	●	30	●	35	●	45	
Metal scraper	15		20	●	25	●	30	●	35	●	45	



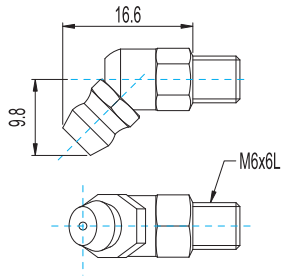
NLC01

Application	15		20	●	25	●	30	●	35	●	45	
Metal scraper	15		20		25		30	●	35	●	45	



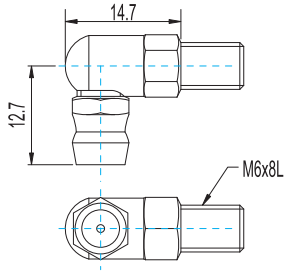
NLB02

Application	15		20	●	25	●	30	●	35	●	45	
Metal scraper	15		20		25		30	●	35	●	45	



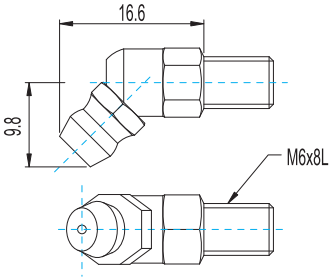
NLC02

Application	15		20		25	●	30	●	35	●	45	
Metal scraper	15		20	●	25	●	30	●	35	●	45	



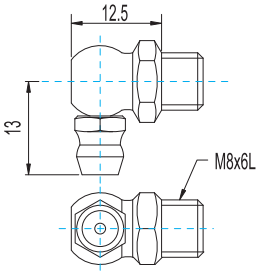
NLB03

Application	15		20		25	●	30	●	35	●	45	
Metal scraper	15		20	●	25	●	30	●	35	●	45	



NLC03

Application	15		20		25		30		35		45	●
Metal scraper	15		20		25		30		35		45	●



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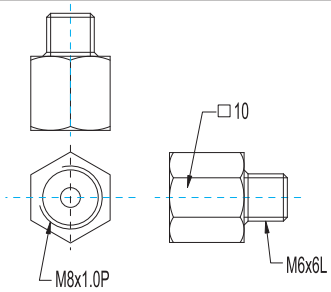
Plumbing Nipple

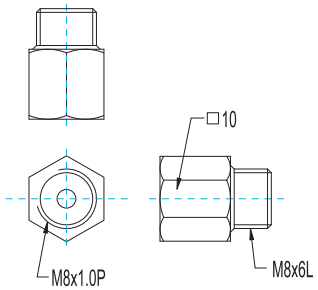
NPA01

Application	15		20		25	●	30	●	35	●	45	
Metal scraper	15		20		25		30		35		45	



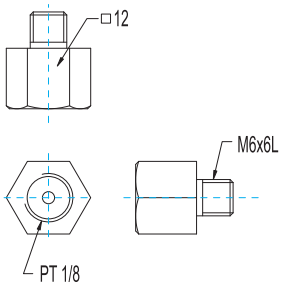
NPA02

Application	15		20		25		30		35		45	●
Metal scraper	15		20		25		30		35		45	●



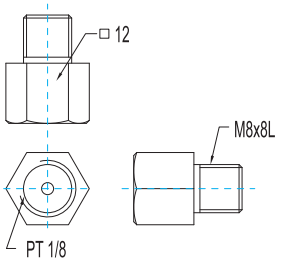
NPA03

Application	15		20		25		30	●	35	●	45	
Metal scraper	15		20		25		30	●	35	●	45	



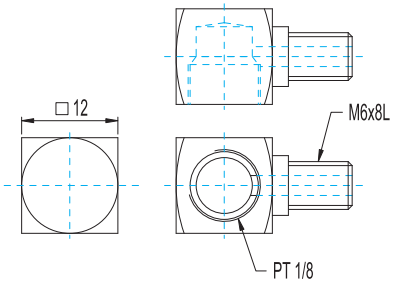
NPA04

Application	15		20		25		30		35		45	●
Metal scraper	15		20		25		30		35		45	●



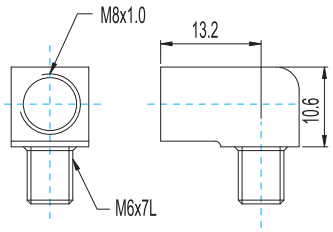
NPC01

Application	15		20		25		30	●	35	●	45	
Metal scraper	15		20		25		30	●	35	●	45	



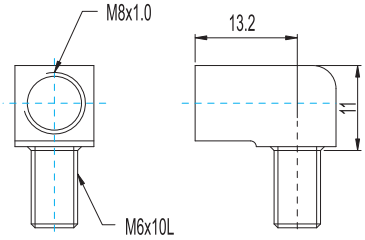
NPC02

Application	15		20	●	25	●	30	●	35	●	45	
Metal scraper	15		20		25	●	30		35		45	



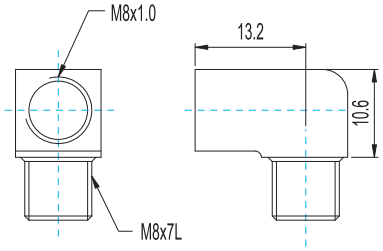
NPC03

Application	15		20		25		30	●	35	●	45	
Metal scraper	15		20		25	●	30	●	35	●	45	



NPC04

Application	15		20		25		30		35		45	●
Metal scraper	15		20		25		30		35		45	



بلبرینگ اسکوئی

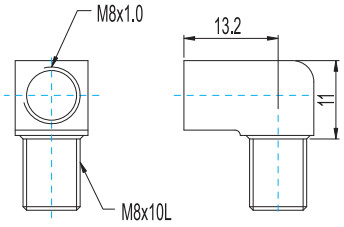
(اسکو صنعت تاوریژ)

OBC
Oskoyi Ballbearing Company

Plumbing Nipple

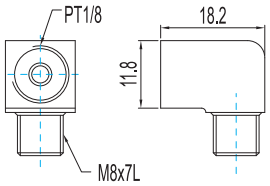
NPC05

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



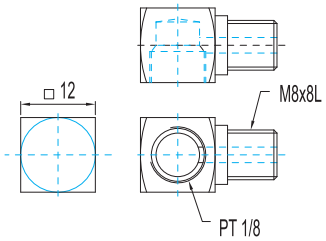
NPC06

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



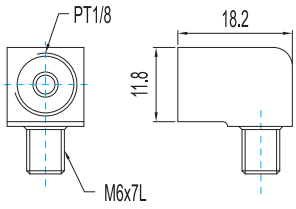
NPC07

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



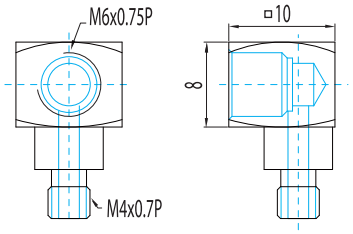
NPC08

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



NPC09

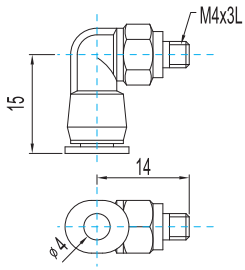
Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



Quick joint

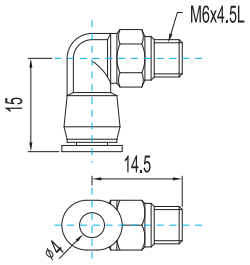
NAC01

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



NAC02

Application	15	20	25	30	35	45
Metal scraper	15	20	25	30	35	45



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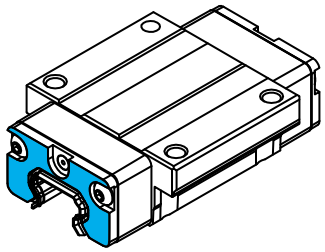
1.15 Accessories

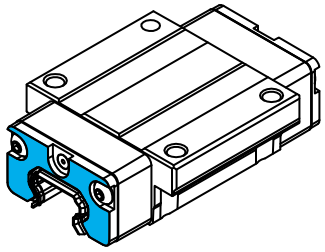
1.15.1 Standard Seal

Standard seal are contact seals that can be attached to the block end faces . Standard seal is suitable for normal environment.



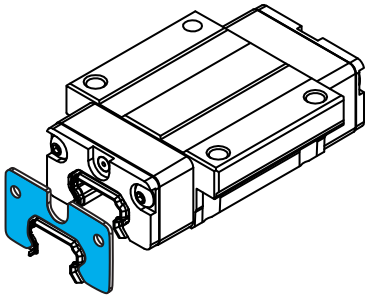
1.15.2 Low Friction Shield

Low friction shields are non-contact seals that can reduce running resistance and replace standard seal. They are suitable for the low pollution environment, for example, cleanroom.



1.15.3 Scraper plate

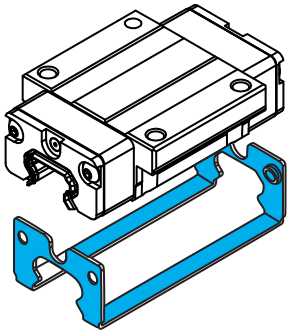
Scraper plates are spring-steel, non-contact components. They protect the standard seal from, for example,coarse contaminants or hot metal chips.



Model	Thickness (mm)
BR 15	1
BR 20	1
BR 25	1.5
BR 30	1
BR 35	1
BR 45	1

1.15.3 Scraper plate

U Type metal frames can hold the two side seals and change the block dimension values of L and E as below table . Refer to P38~P41 for definition of L and E.



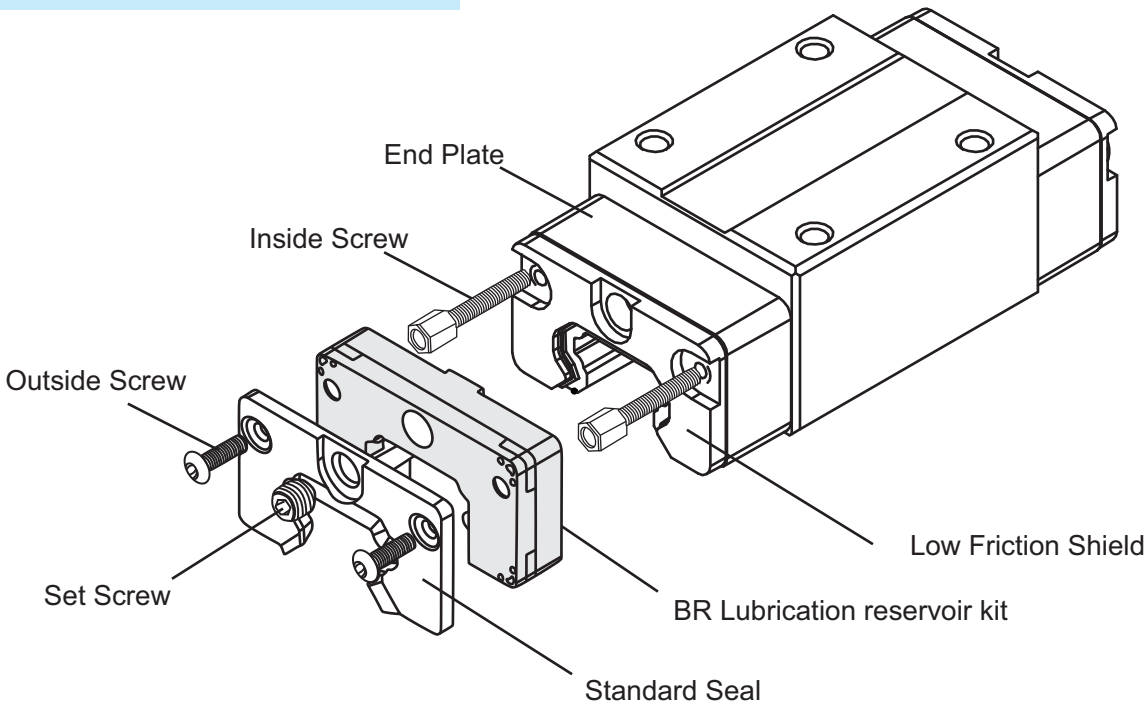
Model	L	E
BR 15	68	2.6
BR 20	79.8	3
BR 25	90	5
BR 30	111	7
BR 35	111	7.5
BR 45	140.2	12

Unit : mm

1.16 BR Lubrication Reservoir Kit

BR lubrication reservoir kit is run by a high oil content of reservoir and optimization of film forming designed to provide adequate and proper amount of lubricant to grooves of rails, thus reaching good effect of environmental and extend relubrication intervals.

1.16.1 Construction



1.16.2 Characteristics

(1) Effectivily extend the relubrication intervals

Make supplimentary periodically up to 4000km

(2) High reliability and interchangeability

End-users can install or replace BR lubrication reservoir kit by themselves easily.

Replace BR lubrication reservoir kit on the rail directly without moving the block out.

(3) Friendly to environment

Through optimization of the film forming methods to reduce the waste of lubrication oil, thus preventing environmental pollution.

(4) High-performance lubrication oil

Using the lubrication oil which is compliance with ISO3448, viscosity grade 680.

Perfectly compatible with the lubrication oil of blocks.

Allowable temperature range : -10~50°C (working continuously) or -10~80°C (working temporarily).

1.16.3 Applicable Scope

Series : BR Series

Size : 15/20/25/30

Block : available for all block type

End Plate : available for standard end plate only

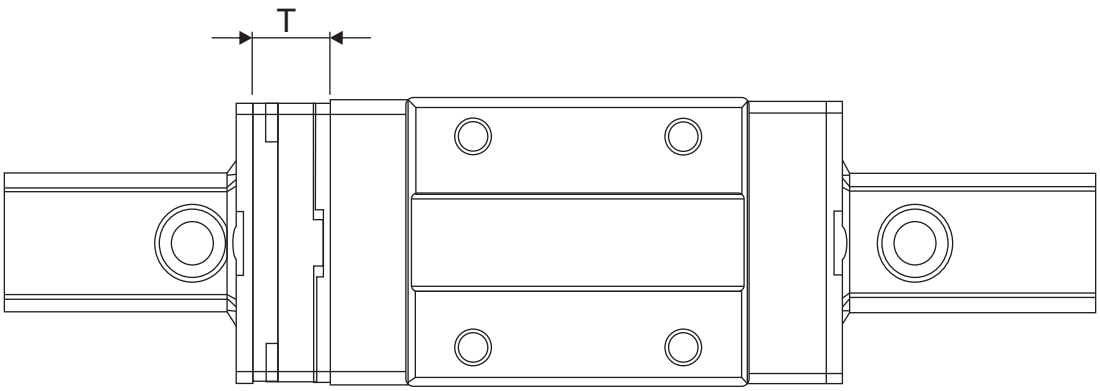
Preload : available for all preload classes

Precision : available for all accuracy classes

1.16.4 Thickness

BR Lubrication reservoir kit will increase the length of block.

Please refer to the below table for thickness T.



Thickness T of BR Lubrication reservoir kit

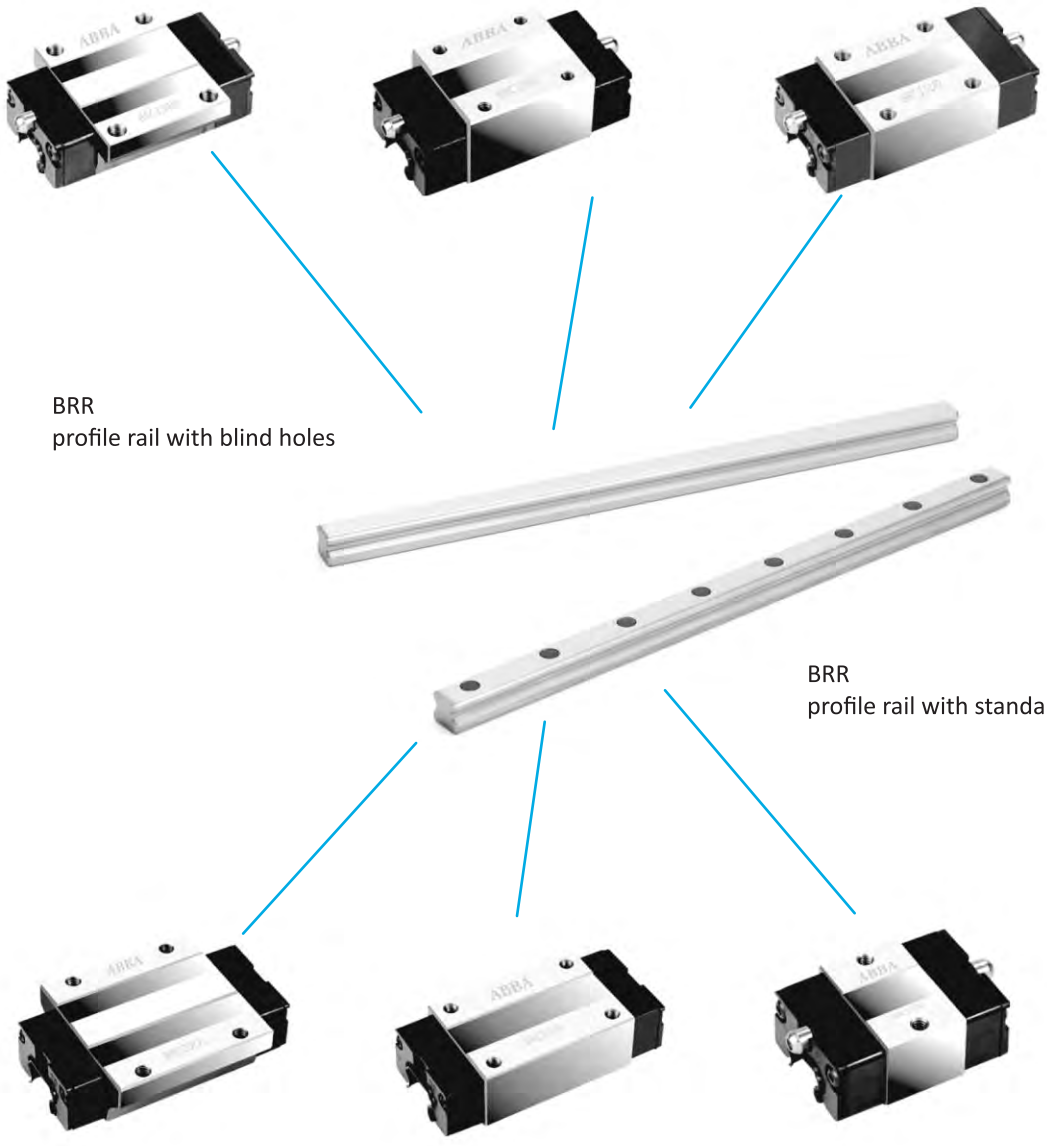
SIZE	BR lubrication reservoir kit thickess T (mm)
15	13
20	13
25	13
30	10

1.17 Product Overview

BRC-A0
BRD-A0
Flanged block, standard length, standard height

BRC-R0
BRD-R0
Slim-line block, standard length, extended height

BRC-U0
BRD-U0
Slim-line block, standard length, extended height



BRR
profile rail with blind holes

BRR
profile rail with standard holes

BRC-LA
BRD-LA
Flanged block, extended length, standard height

BRC-LR
BRD-LR
Slim-line block, extended length, extended height

BRC-SU
BRD-SU
Slim-line block, short length, standard height

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1.18 Ordering Key of System

B R S 1 5 - A 0 C 2 Z 1 - 1 0 8 0 0 N D 0 - A 0 S W 2

Size
15, 20, 25, 30, 35, 45

Block Type [1)]

A0	Flanged block, standard length, standard height
LA	Flanged block, extended length, standard height
SU	Slim-line block, short length, standard height
U0	Slim-line block, standard length, standard height
R0	Slim-line block, standard length, extended height
LR	Slim-line block, extended length, extended height

End Cap Type [1)]

C	Standard End Cap (for 15, 20, 25, 30)
D	Short End Cap (for 15, 20, 25, 30, 35, 45)

Number of blocks per rail

1~9	1~9 blocks per rail
A~W	> 9 blocks per rail (10=A, 11=B, 12=C...)

Preload Class [2)]

ZF	Clearance
Z0	No preload
Z1	Light preload, 0~0.02C
Z2	Medium preload, 0.02~0.02C
Z3	Heavy preload, 0.05~0.07C

Rail Length
00080~99999 mm (1 mm steps)

Accuracy Class [2)]

N	Normal
H	High
P	Precision

Rail Hole

D0	Standard hole (Standard hole distance. The distance of the first and last attachment holes is produced equidistantiy.)
F0	Standard hole (Standard hole distance. The distance of the first and last attachment holes is not produced equidistantiy.)
D4	Blind hole (Standard hole distance. The distance of the first and last attachment holes is produced equidistantly
F4	Blind hole (Standard hole distance. The distance of the first and last attachment holes is not produced equidistantly
DX	Special machining, customized according to drawing number

Joint rail Track

A	Yes
0	No

Rail treatment [3)]

O	Standard (anti-rust oil)
B	Black oxidation plating
H	Hard chromium plating

Sealing

S	Standard seal (only end seal)
O	Low friction shield
1	Standard seal + Scraper Plate
U [1)]	Standard seal + Metal frame to hold two side seals
V	Standard seal + BR Lubrication reservoir kit
W	Standard seal + Scraper plate + BR Lubrication reservoir kit

No. of Parallel Rails

00	Single Rail
W2~W9	Parallel Rails (W2:2 rails, W3:3 rails...)

1) Carriage type cross table
●/○ : Block Type available
● : Sealing U type, Standard seal + Metal frame to hold two side seals

BRC (Standard End Cap)	A0	LA	SU	U0	R0	LR
15	●		○	●	●	
20	●	○	○	●	●	○
25	●	○	○	●	●	○
30	●	○	○	●	●	○
35						
45						

BRC (Standard End Cap)	A0	LA	SU	U0	R0	LR
15	○		○	○	○	
20	○	○	○	○	○	○
25	○	○	○	○	○	○
30	○	○	○	○	○	○
35	●	○	○	●	●	○
45	●	○		●	●	○

2) Refer to following table for limitation

System			
Accuracy	P	H	N
	-	-	ZF
	Z0	Z0	Z0
Preload	Z1	Z1	Z1
	Z2	Z2	Z2
	Z3	Z3	Z3

3) Carriage Surface Treatment
A. Standard: Anti-rust oil
B. Non-Standard: See Drawing

4) Nipple/set screw quantity per block
A. Size 15:0° nipple (2 pcs)
B. Size 20/25/30/45: 45° nipple(1 pcs) + screw(1 pcs)

1.18 Ordering Key of Block

B R C 1 5 - A 0 Z 1 - N 0 S

End Cap Type [1)]

C	Standard End Cap (for 15, 20, 25, 30)
D	Short End Cap (for 15, 20, 25, 30, 35, 45)

Size

15, 20, 25, 30, 35, 45

Block Type [1)]

A0	Flangd block, standard length, standard height
LA	Flanged block, extended length standard height
SU	Slim-line block, short length, standard height
U0	Slim-line block, standard length, standard height
R0	Slim-line block, standasd length, extended height
LR	Slim-line block, extended length, extended height

Preload Class

ZF	Clearance
Z0	No preload
Z1	Light preload, 0~0.02C

Accuracy Class

N	Normal

Block Treatment

0	Standard (anti-rust oil)
B	Black oxidation plating
H	Hard chromium plating

Sealing

S	Standard seal (only end seal)
0	Low friction shield
1	Standard seal + Scraper plate
U [1)]	Standard seal + Metal frame to hold two side seals

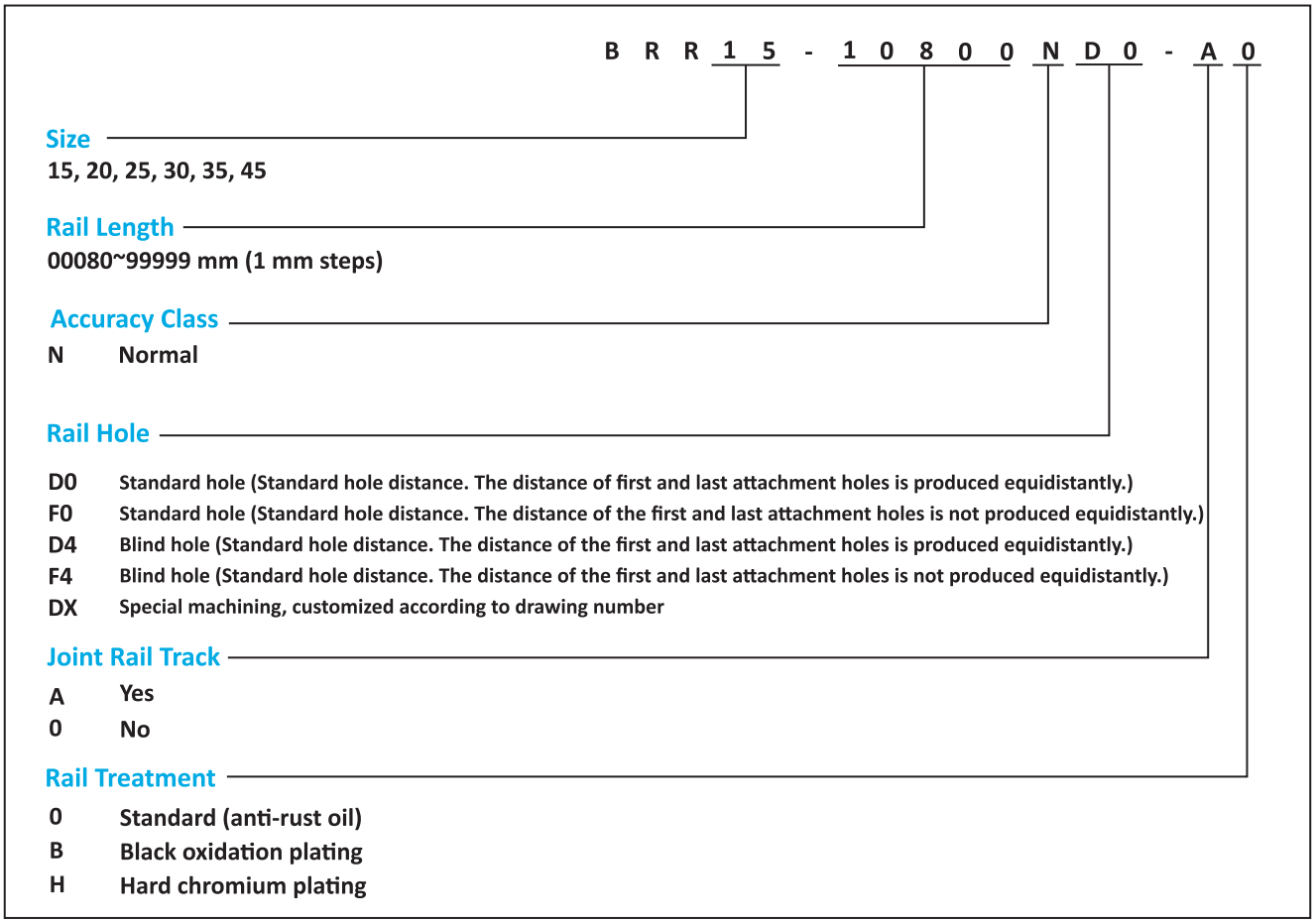
1) Carriage type cross table
●/○ : Block Type available
● : Sealing U type, Standard seal + Metal frame to hold two side seals

BRC (Standard End Cap)	A0	LA	SU	U0	R0	LR
15	●		○	●	●	
20	●	○	○	●	●	○
25	●	○	○	●	●	○
30	●	○	○	●	●	○
35						
45						

BRC (Standard End Cap)	A0	LA	SU	U0	R0	LR
15	○		○	○	○	
20	○	○	○	○	○	○
25	○	○	○	○	○	○
30	○	○	○	○	○	○
35	●	○	○	●	●	○
45	●	○		●	●	○

2) Nipple/set screw quantity per block
A. Size 15:0° nipple (2 pcs)
B. Size 20/25/30/45: 45° nipple(1 pcs) + screw(1 pcs)

1.18 Ordering Key of Rail



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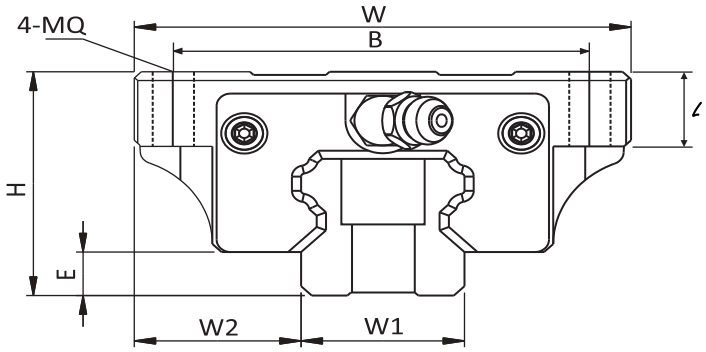
(اسکو صنعت تاوریژ)

OBC
Oskoyi Ballbearing Company

BRC-A0/LA , BRD-A0/LA

BR-A0

BR-LA

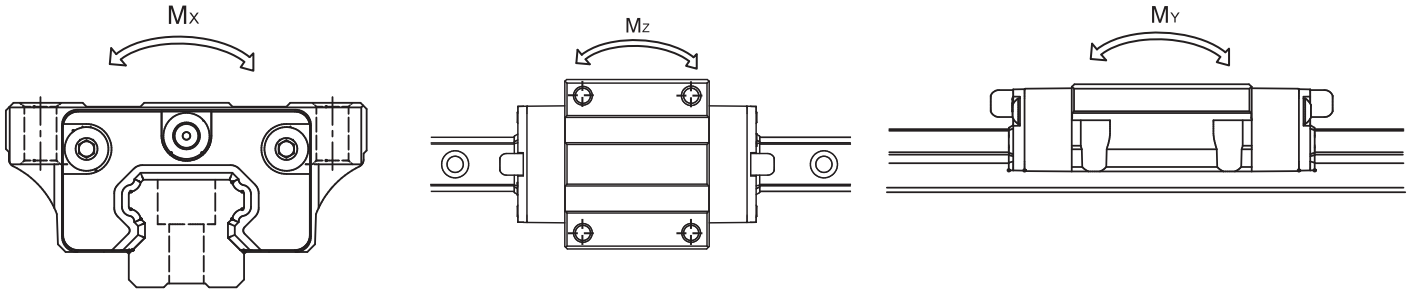


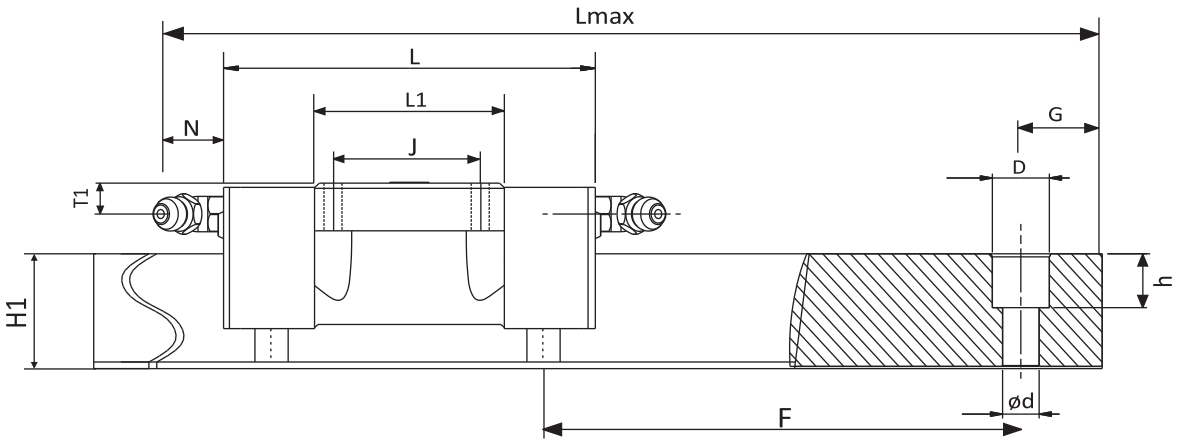
کد کالا	Assembly (mm)				BR block (mm)							BR rail (mm)				قیمت	
	H	W	W2	E	L	BxJ	MQx𝓁	L1	Oil hole	T1	(N)	W1	H1	F	dxDxh	تومان	دلار
BRC 15A0	24	47	16	4.6	66	38x30	M5x8	40	ø 3	4.3	5	15	14	60	4.5x7.5x5.8		
BRD 15A0	24	47	16	4.6	56	38x30	M5x8	40	M6x1	4.3	5	15	14	60	4.5x7.5x5.8		
BRC 20A0	30	63	21.5	5	77.8	53x40	M6x9	48.8	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRD 20A0	30	63	21.5	5	67.8	53x40	M6x9	48.8	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRC 20LA	30	63	21.5	5	92.4	53x40	M6x9	63.4	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRD 20LA	30	63	21.5	5	82.4	53x40	M6x9	63.4	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRC 25A0	36	70	23.5	7	88	57x45	M8x12	57	M6x1	7.8	15.6	23	22	60	7x11x9.5		
BRD 25A0	36	70	23.5	7	78	57x45	M8x12	57	M6x1	7.8	15.6	23	22	60	7x11x9.5		
BRC 25LA	36	70	23.5	7	110.1	57x45	M8x12	79.1	M6x1	7.8	15.6	23	22	60	7x11x9.5		
BRD 25LA	36	70	23.5	7	100.1	57x45	M8x12	79.1	M6x1	7.8	15.6	23	22	60	7x11x9.5		
BRC 30A0	42	90	31	9	109	72x52	M10x12	72	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 30A0	42	90	31	9	99	72x52	M10x12	72	M6x1	7	15.6	28	26	80	9x14x12.5		
BRC 30LA	42	90	31	9	131.3	72x52	M10x12	94.3	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 30LA	42	90	31	9	121.3	72x52	M10x12	94.3	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 35A0	48	100	33	9.5	109	82x62	M10x13	80	M6x1	8	15.6	34	29	80	9x14x12.5		
BRD 35LA	48	100	33	9.5	134.8	82x62	M10x13	105.8	M6x1	8	15.6	34	29	80	9x14x12.5		
BRD 45A0	60	120	37.5	14	138.2	100x80	M12x15	105	M8x1	8.5	16	45	38	105	14x20x17.5		
BRD 45LA	60	120	37.5	14	163	100x80	M12x15	129.8	M8x1	8.5	16	45	38	105	14x20x17.5		

تلفن : (021) 33913364 - 33951660

فکس : (021) 33985603

BRC-A0/LA , BRD-A0/LA





کد کالا	Ref.Data (mm)		Basic Load Rating (kgf)		Static Moment (kgf*m)			Weight	
	Lmax	G	C	CO	Mx	My	Mz	Block (kg)	Rail (kg/m)
BRC 15A0	4000	20	850	1350	10.1	6.8	6.8	0.21	1.4
BRD 15A0	4000	20	850	1350	10.1	6.8	6.8	0.21	1.4
BRC 20A0	4000	20	1400	2400	24	14.6	14.6	0.4	2.6
BRD 20A0	4000	20	1400	2400	24	14.6	14.6	0.4	2.6
BRC 20LA	4000	20	1650	3000	30	23.8	23.8	0.52	2.6
BRD 20LA	4000	20	1650	3000	30	23.8	23.8	0.52	2.6
BRC 25A0	4000	20	1950	3200	36.8	22.8	22.8	0.57	3.6
BRD 25A0	4000	20	1950	3200	36.8	22.8	22.8	0.57	3.6
BRC 25LA	4000	20	2600	4600	52.9	45.5	45.5	0.72	3.6
BRD 25LA	4000	20	2600	4600	52.9	45.5	45.5	0.72	3.6
BRC 30A0	4000	20	2850	4800	67.2	43.2	43.2	1.1	5.2
BRD 30A0	4000	20	2850	4800	67.2	43.2	43.2	1.1	5.2
BRC 30LA	4000	20	3600	6400	89.6	75.4	75.4	1.4	5.2
BRD 30LA	4000	20	3600	6400	89.6	75.4	75.4	1.4	5.2
BRD 35A0	4000	20	3850	6200	105.4	62	62	1.6	7.2
BRD 35LA	4000	20	4800	8300	141.1	109.8	109.8	2	7.2
BRD 45A0	4000	22.5	6500	10500	236.3	137.8	137.8	2.7	12.3
BRD 45LA	4000	22.5	7700	13000	292.5	210.9	210.9	3.6	12.3

بلبرینگ اسکوئی

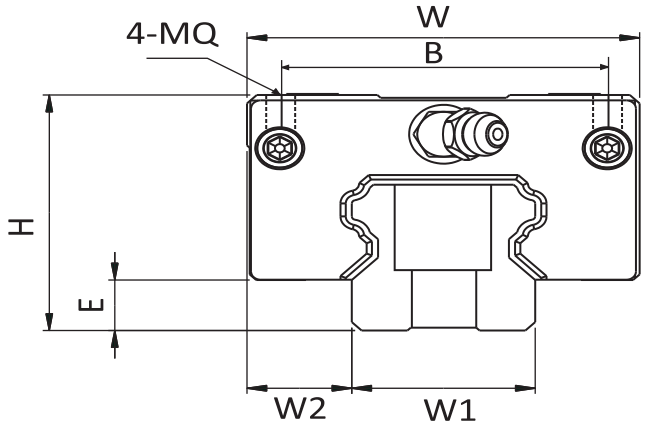
(اسکو صنعت تاوریژ)

OBC
Oskoyi Ballbearing Company

BRC-R0/LR , BRD-R0/LR

BR-R0

BR-LR



کد کالا	Assembly (mm)				BR block (mm)							BR rail (mm)				قیمت	
	H	W	W2	E	L	BxJ	MQx↙	L1	Oil hole	T1	(N)	W1	H1	F	dxDxh	دلار	تومان
BRC 15R0	28	34	9.5	4.6	66	26x26	M4x6	40	ø 3	8.3	5	15	14	60	4.5x7.5x5.8		
BRD 15R0	28	34	9.5	4.6	56	26x26	M4x6	40	M6x1	8.3	5	15	14	60	4.5x7.5x5.8		
BRC 20R0	30	44	12	5	77.8	32x36	M5x8	48.8	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRD 20R0	30	44	12	5	67.8	32x36	M5x8	48.8	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRC 20LR	30	44	12	5	92.4	32x50	M5x8	63.4	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRD 20LR	30	44	12	5	82.4	32x50	M5x8	63.4	M6x1	7	15.6	20	18	60	6x9.5x9.0		
BRC 25R0	40	48	12.5	7	88	35x35	M6x10	57	M6x1	11.8	15.6	23	22	60	7x11x9.5		
BRD 25R0	40	48	12.5	7	78	35x35	M6x10	57	M6x1	11.8	15.6	23	22	60	7x11x9.5		
BRC 25LR	40	48	12.5	7	110.1	35x50	M6x10	79.1	M6x1	11.8	15.6	23	22	60	7x11x9.5		
BRD 25LR	40	48	12.5	7	100.1	35x50	M6x10	79.1	M6x1	11.8	15.6	23	22	60	7x11x9.5		
BRC 30R0	45	60	16	9	109	40x40	M8x13	72	M6x1	10	15.6	28	26	80	9x14x12.5		
BRD 30R0	45	60	16	9	99	40x40	M8x13	72	M6x1	10	15.6	28	26	80	9x14x12.5		
BRC 30LR	45	60	16	9	131.3	40x60	M8x13	94.3	M6x1	10	15.6	28	26	80	9x14x12.5		
BRD 30LR	45	60	16	9	121.3	40x60	M8x13	94.3	M6x1	10	15.6	28	26	80	9x14x12.5		
BRD 35R0	55	70	18	9.5	109	50x50	M8x13	80	M6x1	15	15.6	34	29	80	9x14x12.5		
BRD 35LR	55	70	18	9.5	134.8	50x72	M8x13	105.8	M6x1	15	15.6	34	29	80	9x14x12.5		
BRD 45R0	70	86	20.5	14	138.2	60x60	M10x16.5	105	M8x1	18.5	16	45	38	105	14x20x17.5		
BRD 45LR	70	86	20.5	14	163	60x80	M10x16.5	129.8	M8x1	18.5	16	45	38	105	14x20x17.5		

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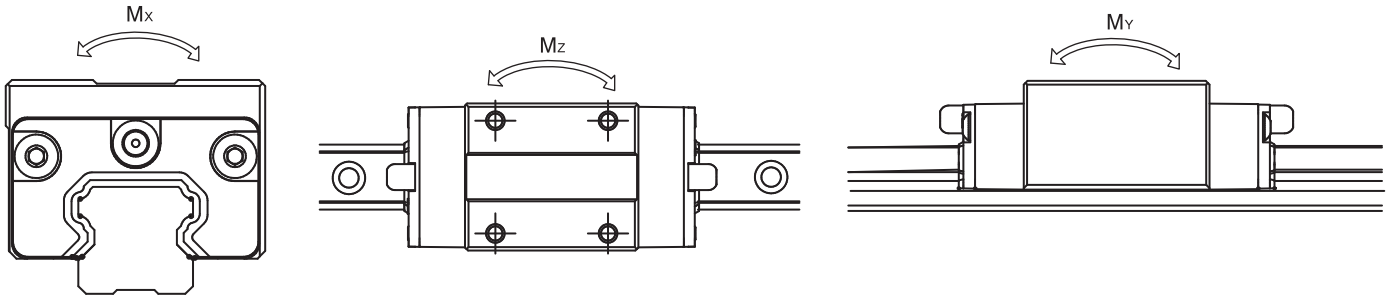
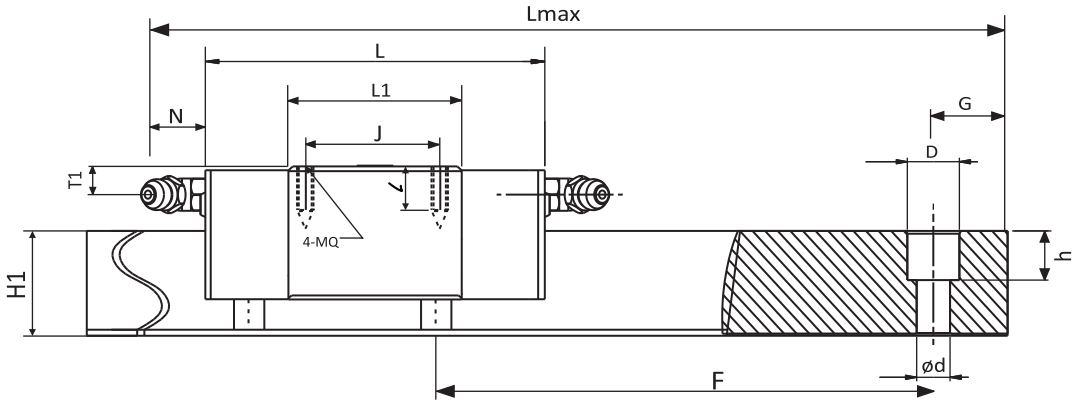
BRC-R0/LR , BRD-R0/LR





کد کالا	Ref.Data (mm)		Basic Load Rating (kgf)		Static Moment (kgf*m)			Weight	
	Lmax	G	C	CO	Mx	My	Mz	Block (kg)	Rail (kg/m)
BRC 15R0	4000	20	850	1350	10.1	6.8	6.8	0.19	1.4
BRD 15R0	4000	20	850	1350	10.1	6.8	6.8	0.19	1.4
BRC 20R0	4000	20	1400	2400	24	14.6	14.6	0.31	2.6
BRD 20R0	4000	20	1400	2400	24	14.6	14.6	0.31	2.6
BRC 20LR	4000	20	1650	3000	30	23.8	23.8	0.47	2.6
BRD 20LR	4000	20	1650	3000	30	23.8	23.8	0.47	2.6
BRC 25R0	4000	20	1950	3200	36.8	22.8	22.8	0.45	3.6
BRD 25R0	4000	20	1950	3200	36.8	22.8	22.8	0.45	3.6
BRC 25LR	4000	20	2600	4600	52.9	45.5	45.5	0.56	3.6
BRD 25LR	4000	20	2600	4600	52.9	45.5	45.5	0.56	3.6
BRC 30R0	4000	20	2850	4800	67.2	43.2	43.2	0.91	5.2
BRD 30R0	4000	20	2850	4800	67.2	43.2	43.2	0.91	5.2
BRC 30LR	4000	20	3600	6400	89.6	75.4	75.4	1.2	5.2
BRD 30LR	4000	20	3600	6400	89.6	75.4	75.4	1.2	5.2
BRD 35R0	4000	20	3850	6200	105.4	62	62	1.5	7.2
BRD 35LR	4000	20	4800	8300	141.1	109.8	109.8	1.9	7.2
BRD 45R0	4000	22.5	6500	10500	236.3	137.8	137.8	2.3	12.3
BRD 45LR	4000	22.5	7700	13000	292.5	210.9	210.9	2.8	12.3

site : www.1OBC.com
Email : Borhan772000@yahoo.com

بلبرینگ اسکوئی

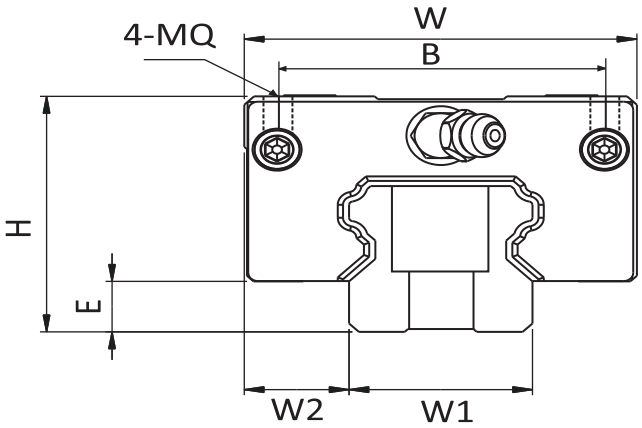
(اسکو صنعت تاوریژ)

OBC
Oskoyi Ballbearing Company

BRC-SU/U0 , BRD-SU/U0

BR-U0

BR-SU



کد کالا	Assembly (mm)				BR block (mm)							BR rail (mm)				قیمت	
	H	W	W2	E	L	BxJ	MQx↙	L1	Oil hole	T1	(N)	W1	H1	F	dxDxh	دلار	تومان
BRC 15U0	24	34	9.5	4.6	66	26x26	M4x5.6	40	ø 3	4.3	5	15	14	60	4.5x7.5x5.8		
BRD 15U0	24	34	9.5	4.6	56	26x26	M4x5.6	40	ø 3	4.3	5	15	14	60	4.5x7.5x5.8		
BRC 15SU	24	34	9.5	4.6	47.6	26x-	M4x5.6	21.6	ø 3	4.3	5	15	14	60	4.5x7.5x5.8		
BRD 15SU	24	34	9.5	4.6	37.6	26x-	M4x5.6	21.6	ø 3	4.3	5	15	14	60	4.5x7.5x5.8		
BRC 20U0	28	42	11	5	77.8	32x32	M5x6.4	48.8	M6x1	5	15.6	20	18	60	6x9.5x9.0		
BRD 20U0	28	42	11	5	67.8	32x32	M5x6.4	48.8	M6x1	5	15.6	20	18	60	6x9.5x9.0		
BRC 20SU	28	42	11	5	57	32x-	M5x6.4	28	M6x1	5	15.6	20	18	60	6x9.5x9.0		
BRD 20SU	28	42	11	5	47	32x-	M5x6.4	28	M6x1	5	15.6	20	18	60	6x9.5x9.0		
BRC 25U0	33	48	12.5	7	88	35x35	M6x8	57	M6x1	4.8	15.6	23	22	60	7x11x9.5		
BRD 25U0	33	48	12.5	7	78	35x35	M6x8	57	M6x1	4.8	15.6	23	22	60	7x11x9.5		
BRC 25SU	33	48	12.5	7	62.5	35x-	M6x8	31.5	M6x1	4.8	15.6	23	22	60	7x11x9.5		
BRD 25SU	33	48	12.5	7	52.5	35x-	M6x8	31.5	M6x1	4.8	15.6	23	22	60	7x11x9.5		
BRC 30U0	42	60	16	9	109	40x40	M8x11.5	72	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 30U0	42	60	16	9	99	40x40	M8x11.5	72	M6x1	7	15.6	28	26	80	9x14x12.5		
BRC 30SU	42	60	16	9	75.6	40x-	M8x11.5	38.6	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 30SU	42	60	16	9	65.6	40x-	M8x11.5	38.6	M6x1	7	15.6	28	26	80	9x14x12.5		
BRD 35U0	48	70	18	9.5	109	50x50	M8x12	80	M6x1	8	15.6	34	29	80	9x14x12.5		
BRD 35SU	48	70	18	9.5	74.7	50x-	M8x12	45.7	M6x1	8	15.6	34	29	80	9x14x12.5		
BRD 45U0	60	86	20.5	14	138.2	60x60	M8x1	105	M8x1	8.5	16	45	38	105	14x20x17.5		

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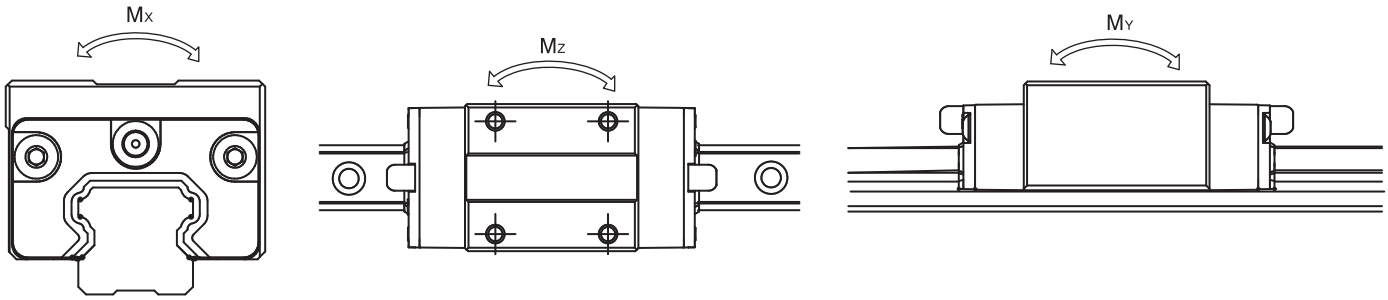
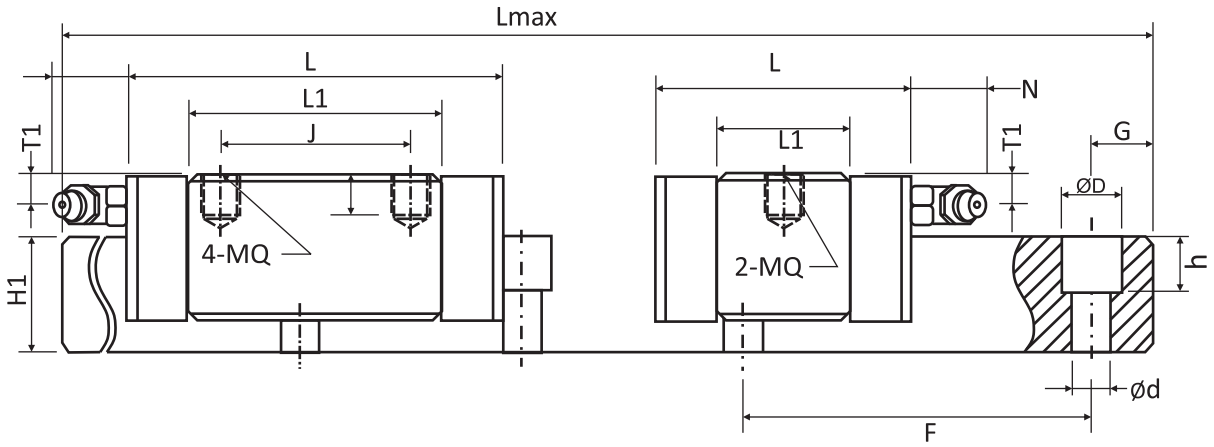
فکس : (021) 33985603

BRC-SU/U0 , BRD-SU/U0





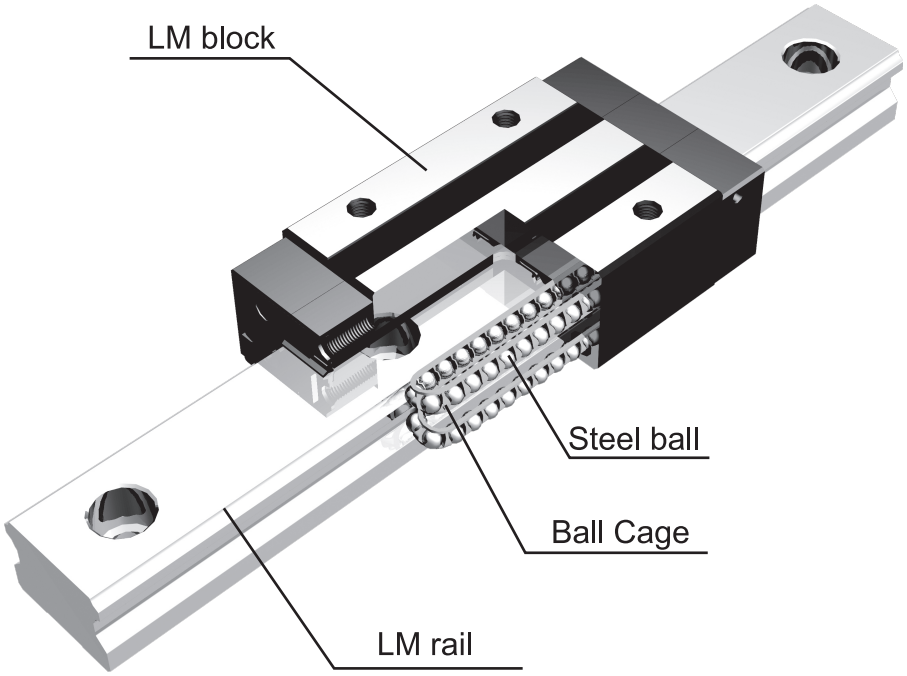
کد کالا	Ref.Data (mm)		Basic Load Rating (kgf)		Static Moment (kgf*m)			Weight	
	Lmax	G	C	CO	Mx	My	Mz	Block (kg)	Rail (kg/m)
BRC 15U0	4000	20	850	1350	10.1	6.8	6.8	0.17	1.4
BRD 15U0	4000	20	850	1350	10.1	6.8	6.8	0.17	1.4
BRC 15SU	4000	20	520	680	5.1	1.8	1.8	0.1	1.4
BRD 15SU	4000	20	520	680	5.1	1.8	1.8	0.1	1.4
BRC 20U0	4000	20	1400	2400	24	14.6	14.6	0.26	2.6
BRD 20U0	4000	20	1400	2400	24	14.6	14.6	0.26	2.6
BRC 20SU	4000	20	950	1400	7	4.9	4.9	0.17	2.6
BRD 20SU	4000	20	950	1400	7	4.9	4.9	0.17	2.6
BRC 25U0	4000	20	1950	3200	36.8	22.8	22.8	0.38	3.6
BRD 25U0	4000	20	1950	3200	36.8	22.8	22.8	0.38	3.6
BRC 25SU	4000	20	1250	1750	17.5	6.9	6.9	0.21	3.6
BRD 25SU	4000	20	1250	1750	17.5	6.9	6.9	0.21	3.6
BRC 30U0	4000	20	2850	4800	67.2	43.2	43.2	0.81	5.2
BRD 30U0	4000	20	2850	4800	67.2	43.2	43.2	0.81	5.2
BRC 30SU	4000	20	1750	2400	33.6	11.6	11.6	0.48	5.2
BRD 30SU	4000	20	1750	2400	33.6	11.6	11.6	0.48	5.2
BRD 35U0	4000	20	3850	6200	105.4	62	62	1.2	7.2
BRD 35SU	4000	20	2500	3650	62.1	20.9	20.9	0.8	7.2
BRD 45U0	4000	22.5	6500	10500	236.3	137.8	137.8	2.1	12.3

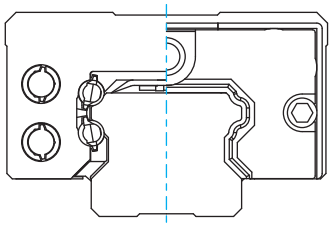
2.1 Ball Cage Linear Guideway

Features

- Perfect smoothness, free of maintenance and greasing work.
- Equivalent loading, long service life.
- Equipped with ball cage, lower noise and smoother running.

BC Series Component Display



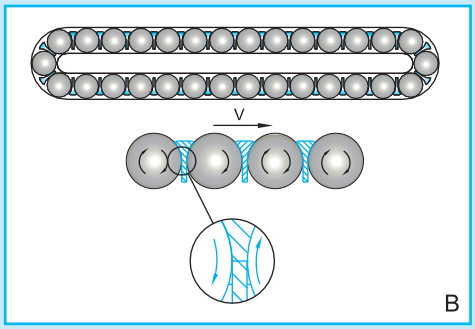


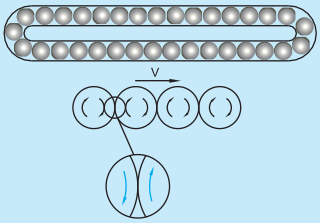
profile

BC series is equipped with ***ABBA*** 's latest developed Ball Cage, which lowers the noise, and enables high-speed running, longer life time, and outstanding accuracy.

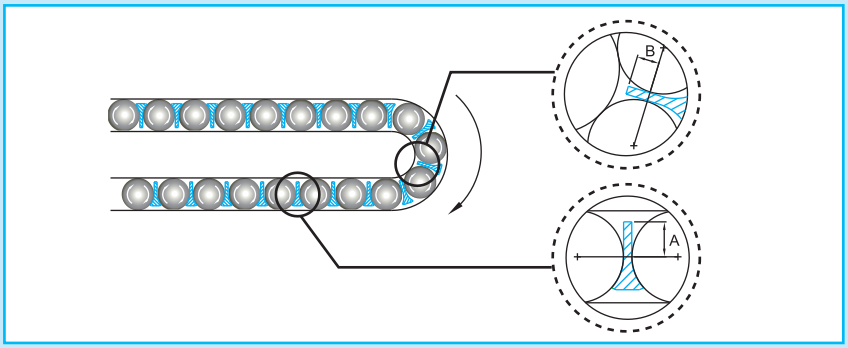
The Characteristic of BC Series

New (with ball cage)



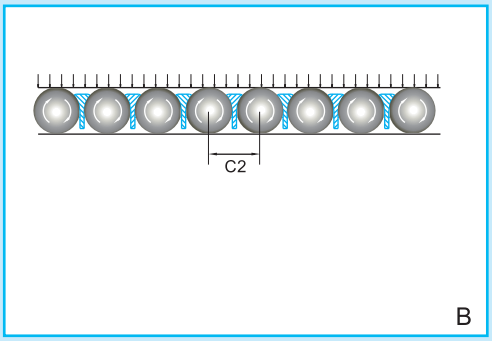


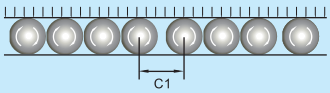
1.Steel balls chafes against each other in drawing A, in which the friction is two times larger than in drawing B, so that the life time in B is longer than in A.



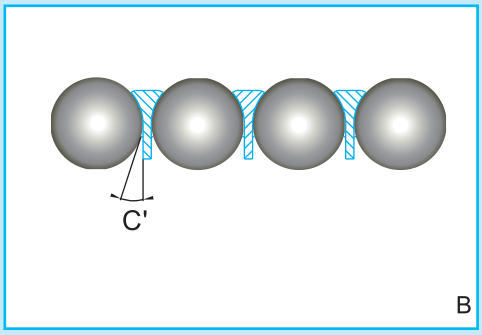
2.The difference between ABBA's ball cage and others' is that there will be no press and intervention from the inner part of the ball cage when it is turning that friction is lowered and life time extends.

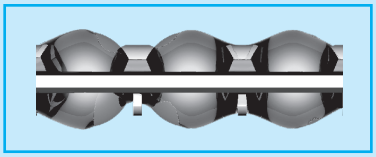
New (with ball cage)



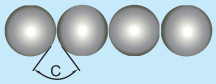


3.It shows in drawing B that due to the ball cage, steel balls are loaded equivalently that their service life could be longer.





Oil membrance adheres easily between the ball cage and steel balls.



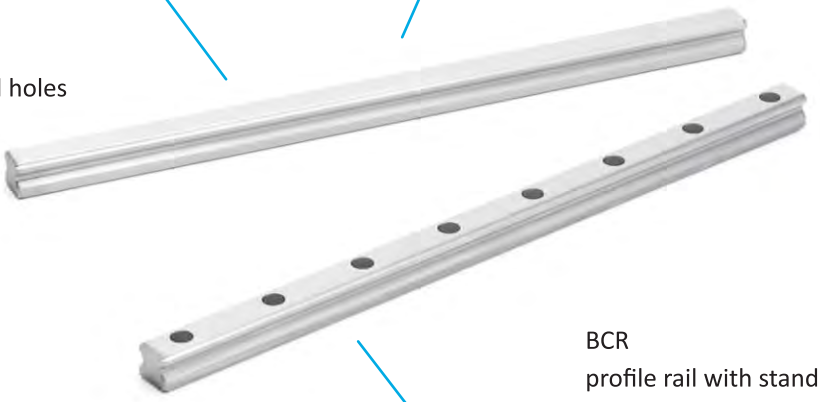
4.As demonstated above, the included angle in drawing A(C) is larger than the one in drawing B(C') with ball cage. Therefore, oil membrance adheres easily in the structure of BC series.

2.3 Product Overview

BCC-A0
Flanged block, standard length,
standard height

BCC-R0
Slim-line block, standard length,
extended height

BCR
profile rail with blind holes



BCR
profile rail with standard holes

BCC-LA
Flanged block, standard length,
standard height

BCC-LR
Slim-line block, standard length,
extended height

2.4 Ordering Key of System

B C S 2 0 - A 0 C 2 Z 1 - 1 0 8 0 0 N D 0 A 0 S W 2

Size
20, 25, 30, 35, 45, 55

Block Type

A0	Flanged block, standard length, standard height
LA	Flanged block, extended length, standard height
R0	Smil-line block, standard length, extended height
LR	Smil-line block, extended length, extended height

End Cap Type

C	Standard End Cap

Number of carriages per rail

1~9	1~9 blockes per rail
A~W	> 9 blockes rail (10=A, 11=B, 12=C...)

Preload Class[1)]

ZF	Clearance
Z0	No preload
Z1	Light preload, 0~0.02C

Rail Length
00080~99999 mm (1 mm steps)

Accuracy Class [1)]

N	Normal
H	High
P	Precision

Rail Hole

D0	Standard hole (Standard hole distance. The distance of the first and attachment holes is produced equidistantly.)
F0	Standard hole (Standard hole distance. The distance of the first and attachment holes is not produced equidistantly.)
D4	Blind hole (Standard hole distance. The distance of the first and attachment is produced equidistantly.)
F4	Blind hole (Standard hole distance. The distance of the first and attachment is not produced equidistantly.)
DX	Special machining, customized according to drawing number

Joint Rail Track

A	Yes (Refer to drawing for detail)
0	No

Rail Treatment [2)]

0	Standard (anti-rust oil)

Sealing

S	Standard seal (only end seal)
1	Standard seal + Scraper plate

No. of Parallel Rails

00	Single Rail
W2~W9	Parallel Rails (W2: 2 rails, W3: 3 rails...)

1) Refer to following table for limitation

System			
Accuracy	P	H	N
	-	-	ZF
	Z0	Z0	Z0
Preload	Z1	Z1	Z1
	Z2	Z2	Z2
	Z3	Z3	Z3

2) Carriage Surface Treatment
A. Standard: Anti-rust oil
B. Non-Standard: See Drawing

3) Nipple/set screw quantity per block
A. Size 20/25/30/45: 45° nipple(1 pcs) + screw(1 pcs)

2.5 Ordering Key of Block

B C C 2 0 - A 0 Z 1 - N 0 S

Size
20, 25, 30, 35, 45, 55

Block Type

A0	Flanged block, standard length, standard height
LA	Flanged block, extended length, standard height
R0	Slim-line block, standard length, extended height
LR	Slim-line block, extended length, extended height

Preload Class

ZF	Clearance
Z0	No preload
Z1	Light preload, 0~0.02C

Accuracy Class

N	Normal

Block Treatment

0	Standard (anti-rust oil)

Sealing

S	Standard seal (only end seal)
1	Standard seal + Scraper plate

2.6 Ordering Key of Rail

B C R 2 0 - 1 0 8 0 0 N D 0 - A 0

Size
20, 25, 30, 35, 45, 55

Rail Length
00080~99999 mm (1 mm steps)

Accuracy Class

N	Normal

Rail Hole

D0	Standard hole (Standard hole distance. The distance of first and last attachment holes is produced equidistantly.)
F0	Standard hole (Standard hole distance. The distance of the first and last attachment holes is not produced equidistantly.)
D4	Blind hole (Standard hole distance. The distance of the first and last attachment holes is produced equidistantly.)
F4	Blind hole (Standard hole distance. The distance of the first and last attachment holes is not produced equidistantly.)
DX	Special machining, customized according to drawing number

Joint Rail Track

A	Yes (Refer to drawing for detail)
0	No

Rail Treatment

0	Standard (anti-rust oil)

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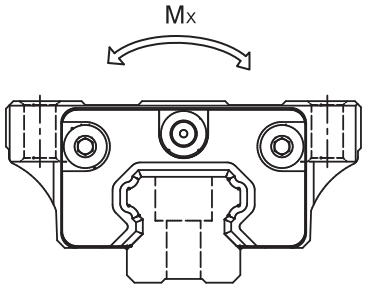
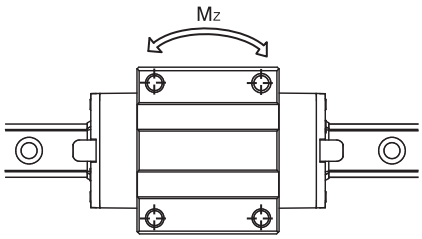
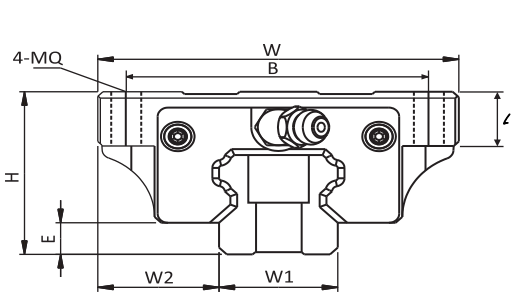
فکس : (021) 33985603

BCC-A0/LA

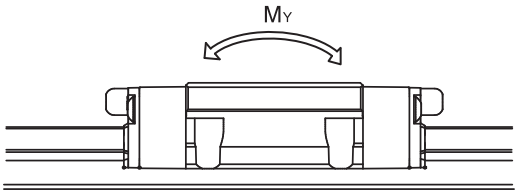
BC-A0

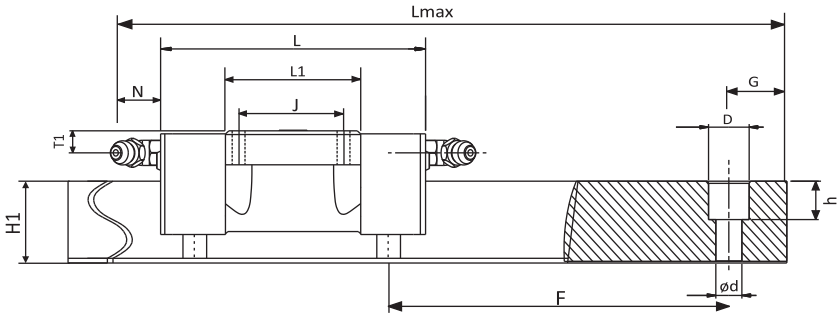






BC-LA





کد کالا	Assembly (mm)				BR block (mm)							BR rail (mm)				قیمت	
	H	W	W2	E	L	BxJ	MQx	L1	Oil hole	T1	(N)	W1	H1	F	dxDxh	تومان	دلار
BCC 55A0	70	140	43.5	12.7	181	116x95	M14x21	131	M8x1	20	16	53	38	120	16x23x20.1		
BCC 55LA	70	140	43.5	12.7	223	116x95	M14x21	173	M8x1	20	16	53	38	120	16x23x20.1		

کد کالا	Ref.Data (mm)		Basic Load Rating (kgf)		Static Moment (kgf*m)			Weight	
	Lmax	G	C	CO	Mx	My	Mz	Block (kg)	Rail (kg/m)
BCC 55A0	4000	30	7600	12800	446	355	355	5.4	14.5
BCC 55LA	4000	30	9300	17100	580	600	600	7.1	14.5

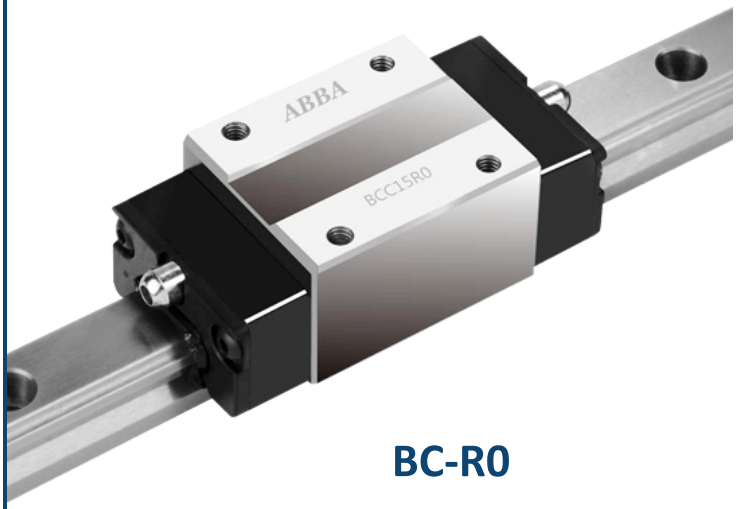
site : www.1OBC.com
Email : Borhan772000@yahoo.com

بلبرینگ اسکوئی

(اسکو صنعت تاوریژ)

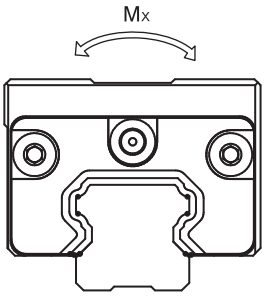
OBC
Oskoyi Ballbearing Company

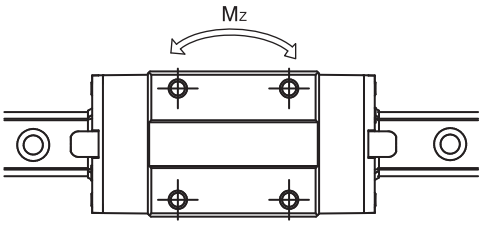
BCC-R0/LR

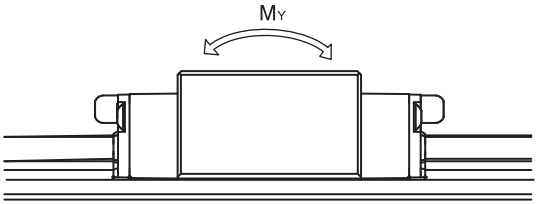


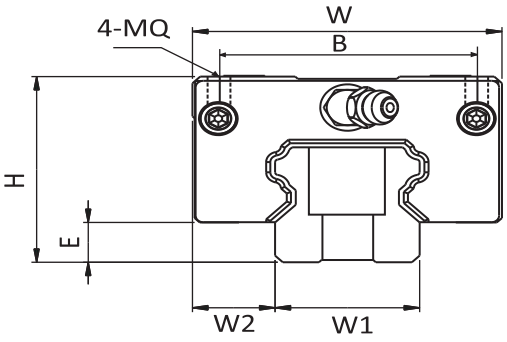
BC-R0

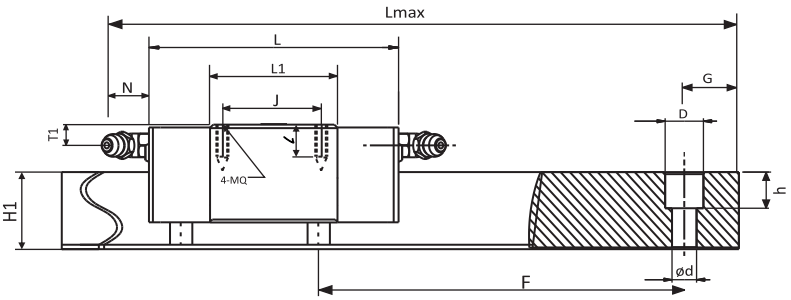
BC-LR











کد کالا	Assembly (mm)				BR block (mm)							BR rail (mm)				قیمت	
	H	W	W2	E	L	BxJ	MQx↙	L1	Oil hole	T1	(N)	W1	H1	F	dxDxh	تومان	دلار
BCC 55R0	80	100	23.5	12.7	181	75x75	M12x19	131	M8x1	30	16	53	38	120	16x23x20.1		
BCC 55LR	80	100	23.5	12.7	223	75x95	M12x19	173	M8x1	30	16	53	38	120	16x23x20.1		

کد کالا	Ref.Data (mm)		Basic Load Rating (kgf)		Static Moment (kgf*m)			Weight	
	Lmax	G	C	CO	Mx	My	Mz	Block (kg)	Rail (kg/m)
BCC 55R0	4000	30	7600	12800	446	355	355	5.2	14.5
BCC 55LR	4000	30	9300	17100	580	600	600	6.7	14.5

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