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08 | LINEAR MOTION

SHIMLESS INDUSTRIAL LINEAR BEARINGS - PATENT PENDING

Shimless Industrial Linear Bearings are designed to be used in both low and high acceleration/deceleration applications. The Shimless Industrial Linear Bearing contains special threaded inserts in the pads that allow for a more heavy duty bearing. The Shimless Industrial Linear Bearings can be used in applications such as actuators, parts transfers, or pick and place operations.

ADVANTAGES OF THE SHIMLESS INDUSTRIAL LINEAR BEARING ARE:

1. Added radii increases structural strength of extrusion housing, and smooth clean finish.
2. Shimless Industrial Bearings provide convenience and single tool adjustability without disassembly.
3. Full length bearing pads on all bearings.
4. Due to type of fasteners provided, all bearings are designed for Industrial (hi-cycle, long life) use.
5. Can install L-handle brake for positioning.
6. Eliminate adjustability of bearing by using shim pack.

Linear Motion

10 SERIES SINGLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

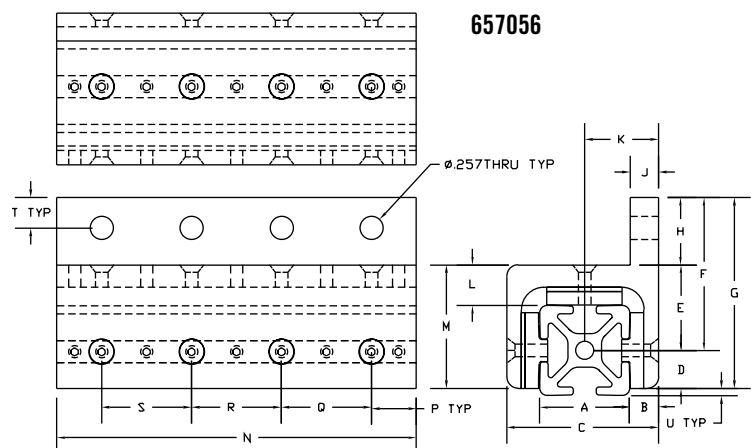
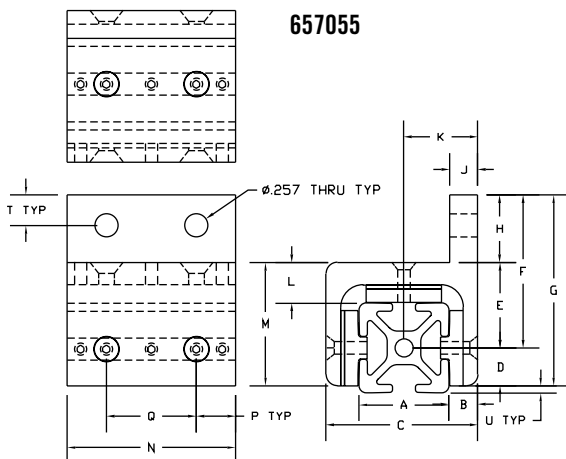


ITEM #	DESCRIPTION
657055	10 Series Single Flange Linear Bearings ^(25S)
657056	10 Series Single Flange Linear Bearings Long ^(25S)

» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657055	657056
A	1.000	1.000
B	.306	.306
C	1.701	1.701
D	.403	.403
E	1.007	1.007
F	1.757	1.757
G	2.160	2.160
H	.750	.750
J	.312	.312
K	.831	.831
L	.507	.507
M	1.410	1.410
N	1.88	4.00
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.375	.375
U*	.097	.097

* Add 1.00" when using 1020 extrusion.



10 SERIES DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

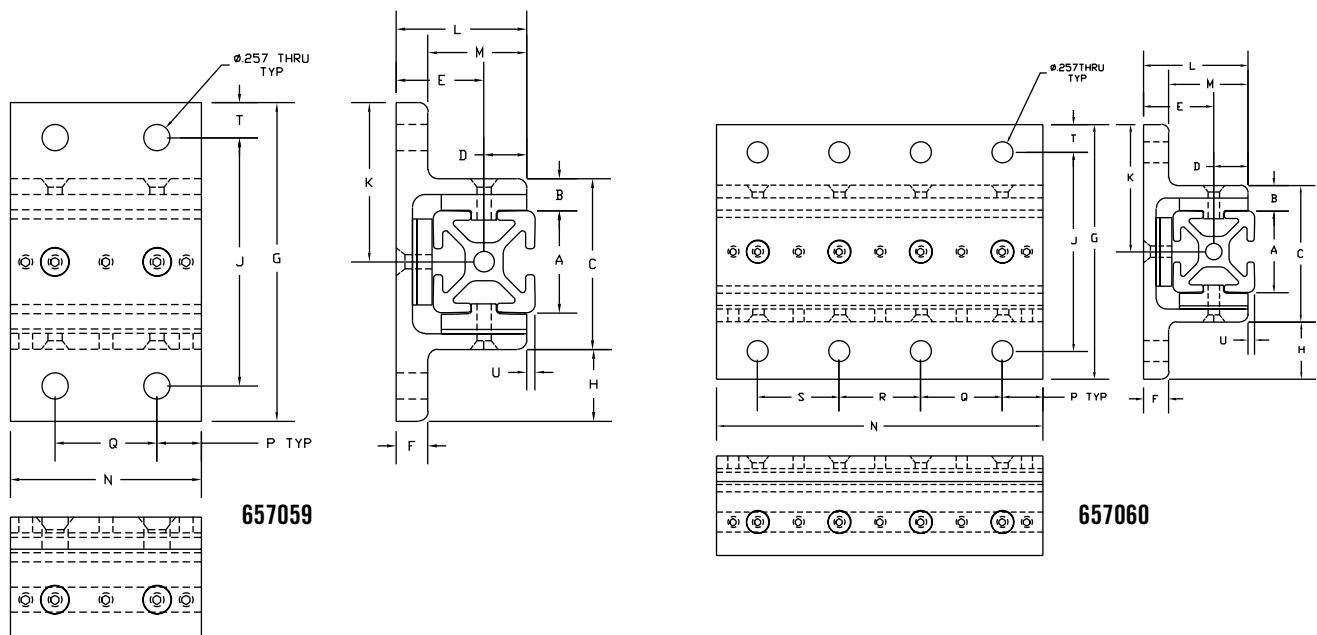


ITEM #	DESCRIPTION
657059	10 Series Double Flange Linear Bearings ^(25S)
657060	10 Series Double Flange Linear Bearings Long ^(25S)

» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657059	657060
A	1.000	1.000
B	.306	.306
C	1.701	1.701
D	.403	.403
E	.913	.913
F	.312	.312
G	3.260	3.260
H	.780	.780
J	2.500	2.500
K	1.610	1.610
L	1.316	1.316
M	1.004	1.004
N	1.88	4.00
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.360	.360
U*	.097	.097

*Add 1.00" when using 1020 extrusion.



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10 SERIES DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

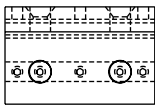


ITEM #	DESCRIPTION
657057	10 Series Double Flange Linear Bearings ^(25S)
657058	10 Series Double Flange Linear Bearings Long ^(25S)

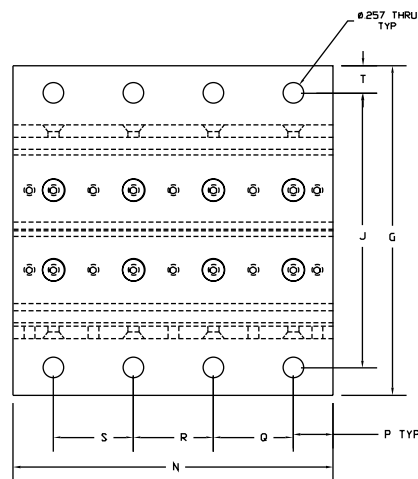
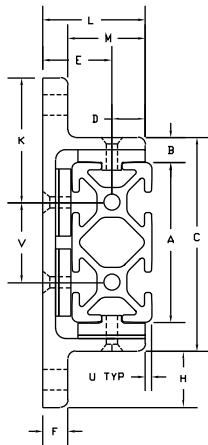
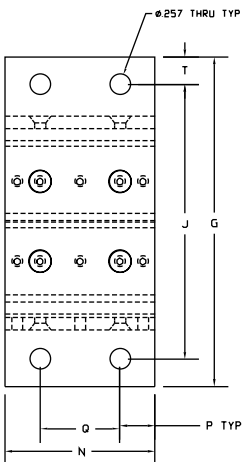
» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657057	657058
A	2.000	2.000
B	.306	.306
C	2.707	2.707
D	.403	.403
E	.913	.913
F	.312	.312
G	4.250	4.250
H	.772	.772
J	3.490	3.490
K	1.610	1.610
L	1.316	1.316
M	1.004	1.004
N	1.88	4.00
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.360	.360
U*	.097	.097
V	1.000	1.000

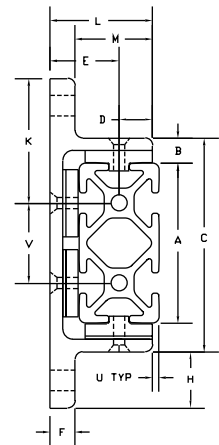
* Add 1.00" when using the 2020 extrusion.



657057



657058



15 SERIES SINGLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

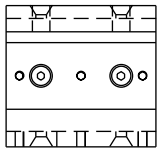


ITEM #	DESCRIPTION
657092	15 Series Single Flange Linear Bearings
657093	15 Series Single Flange Linear Bearings Long

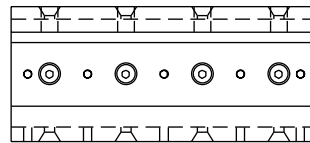
» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657092	657093
A	1.500	1.500
B	.490	.490
C	2.600	2.600
D	.620	.620
E	1.440	1.440
F	2.190	2.190
G	2.818	2.818
H	.750	.750
J	.500	.500
K	1.275	1.275
L	.690	.690
M	2.068	2.068
N	2.81	6.00
P	.656	.750
Q	1.500	1.500
R	N/A	1.500
S	N/A	1.500
T	.375	.375
U*	.130	.130

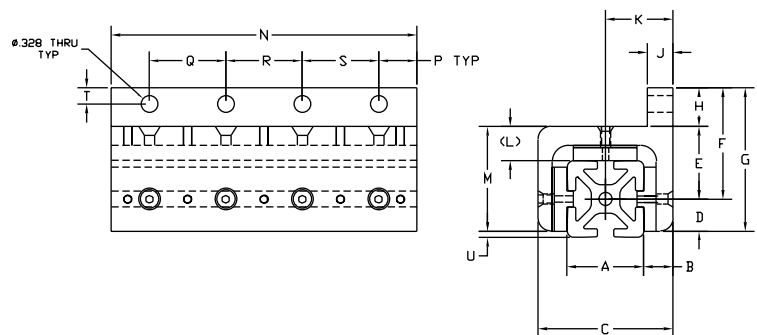
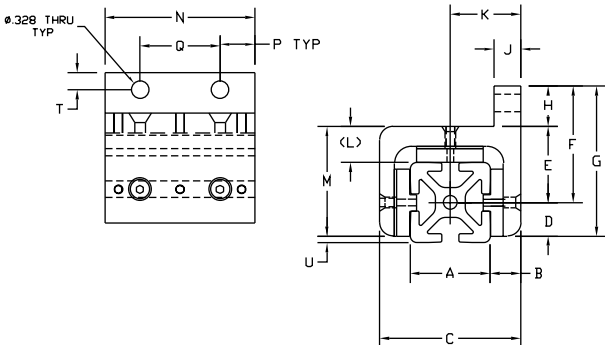
* Add 1.50" when using the 1530 /1530L extrusions or 3.00" when using the 1545 extrusion.



657092



657093



Linear Motion

15 SERIES DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

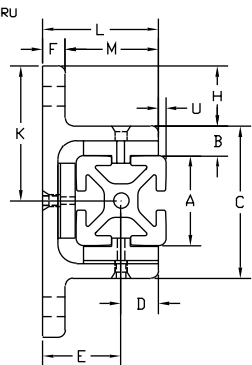
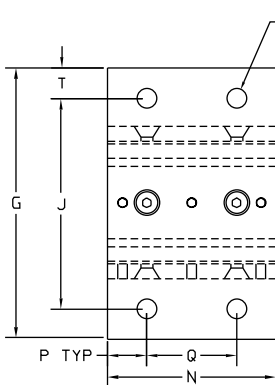


ITEM #	DESCRIPTION
657097	15 Series Double Flange Linear Bearings
657098	15 Series Double Flange Linear Bearings Long

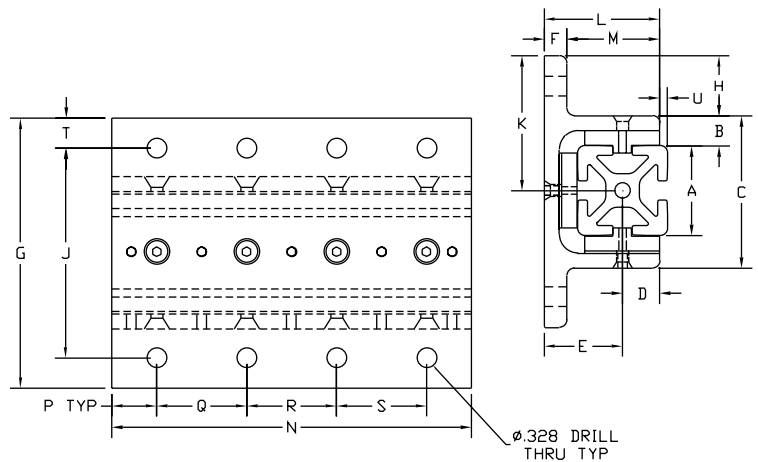
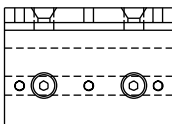
» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657097	657098
A	1.500	1.500
B	.490	.490
C	2.600	2.600
D	.620	.620
E	1.323	1.323
F	.375	.375
G	4.500	4.500
H	.950	.950
J	3.500	3.500
K	2.225	2.225
L	1.943	1.943
M	1.568	1.568
N	2.81	6.00
P	.656	.750
Q	1.500	1.500
R	N/A	1.500
S	N/A	1.500
T	.475	.475
U*	.130	.130

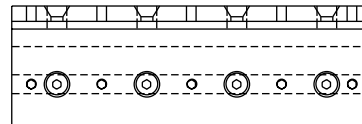
* Add 1.50" when using the 1530 /1530L extrusions or 3.00" when using the 1545 extrusion.



657097



657098



15 SERIES DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438

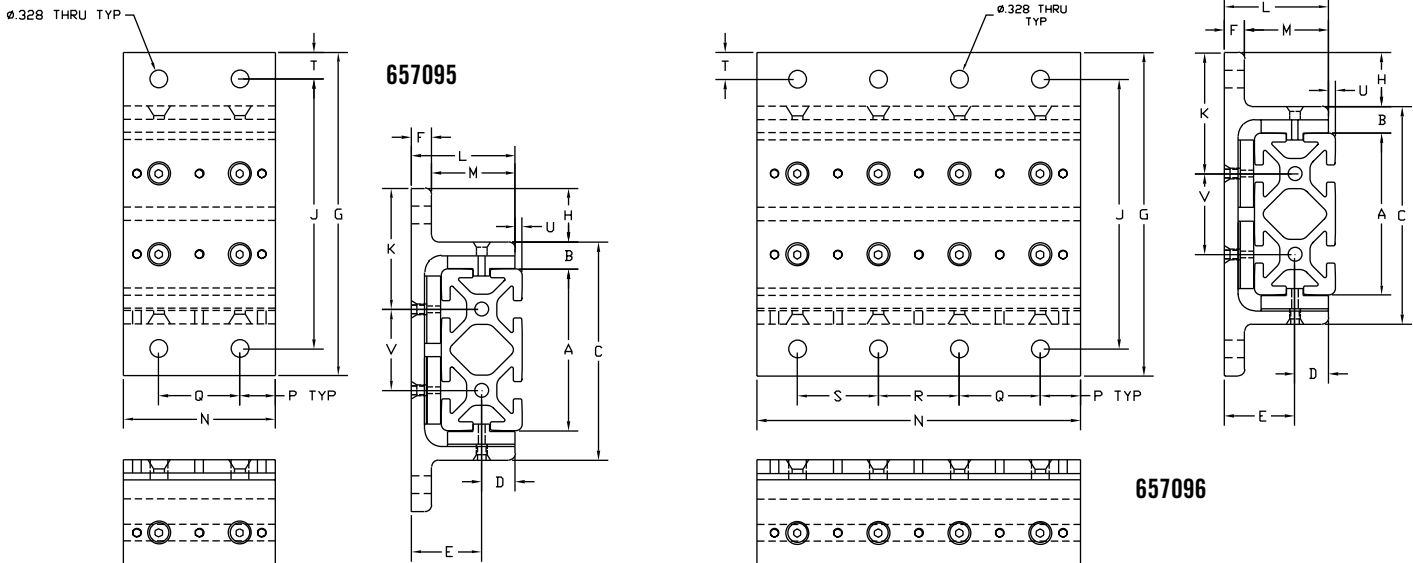


ITEM #	DESCRIPTION
657095	15 Series Double Flange Linear Bearings
657096	15 Series Double Flange Linear Bearings Long

» See page 08:12 for Linear Bearing Assembly and Adjustment Instructions.

ITEM #	657095	657096
A	3.000	3.000
B	.490	.490
C	4.100	4.100
D	.620	.620
E	1.323	1.323
F	.375	.375
G	6.000	6.000
H	.950	.950
J	5.000	5.000
K	2.225	2.225
L	1.943	1.943
M	1.568	1.568
N	2.81	6.00
P	.656	.750
Q	1.500	1.500
R	N/A	1.500
S	N/A	1.500
T	.475	.475
U*	.130	.130
V	1.500	1.500

* Add 1.50" when using the 3030 extrusions or 4.50" when using the 3060 extrusion.



Linear Motion

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10 SERIES ECONOMY SINGLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657150

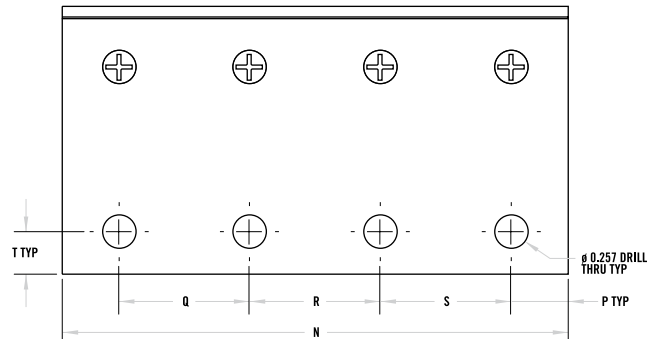
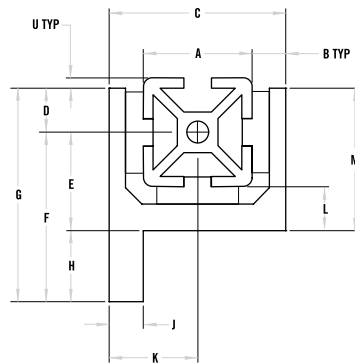


657151

ITEM # DESCRIPTION
 657150 10 Series Economy Short Flange Linear Bearing
 657151 10 Series Economy Long Flange Linear Bearing

ITEM #	657150	657151
A	1.00	1.00
B	.312	.312
C	1.625	1.625
D	.406	.406
E	.903	.903
F	1.562	1.562
G	1.968	1.968
H	.656	.656
J	.312	.312
K	.813	.813
L	.406	.406
M	1.312	1.312
N	1.875	4.000
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.343	.343
U*	.094	.094

*Add 1" when using a 1" x 2" extrusion or 2" when using a 1" x 3" extrusion.



10 SERIES ECONOMY DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657152

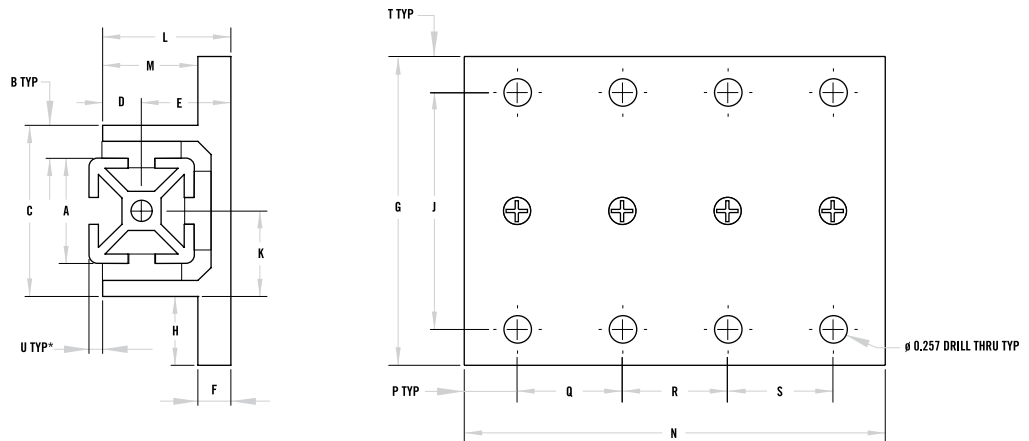


657153

ITEM #	DESCRIPTION
657152	10 Series Economy Short Double Flange Linear Bearing 
657153	10 Series Economy Long Double Flange Linear Bearing 

ITEM #	657152	657153
A	1.00	1.00
B	.312	.312
C	1.625	1.625
D	.406	.406
E	.812	.812
F	.312	.312
G	2.937	2.937
H	.656	.656
J	2.250	2.250
K	.812	.812
L	1.218	1.218
M	.906	.906
N	1.875	4.000
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.343	.343
U*	.094	.094

*Add 1" when using a 1" x 2" extrusion or 2" when using a 1" x 3" extrusion.



Linear Motion

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10 SERIES ECONOMY DOUBLEWIDE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657154

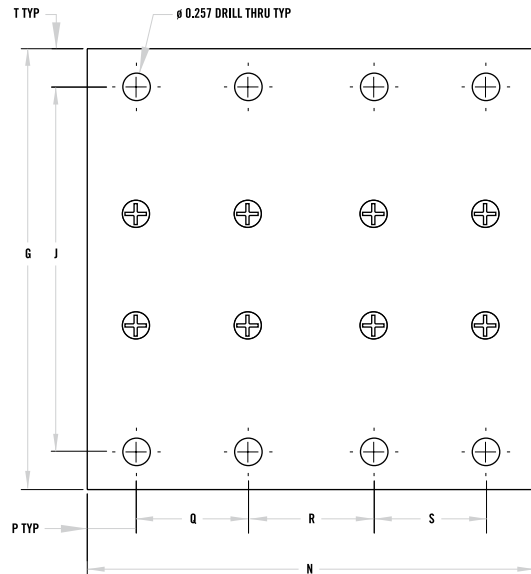
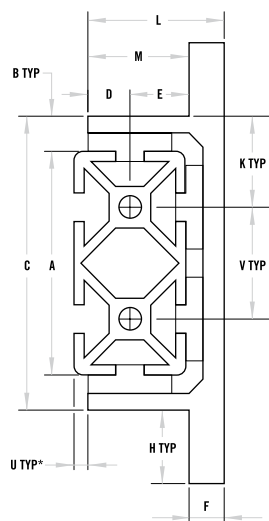


657155

ITEM #	DESCRIPTION
657154	10 Series Economy Short Doublewide Flange Linear Bearing
657155	10 Series Economy Long Doublewide Flange Linear Bearing

ITEM #	657154	657155
A	2.00	2.00
B	.312	.312
C	2.63	2.63
D	.406	.406
E	.812	.812
F	.312	.312
G	3.937	3.937
H	.656	.656
J	3.250	3.250
K	.812	.812
L	1.218	1.218
M	.906	.906
N	1.875	4.00
P	.437	.500
Q	1.00	1.00
R	N/A	1.00
S	N/A	1.00
T	.343	.343
U*	.094	.094
V	1.00	1.00

*Add 1" when using a 2" x 2" extrusion or 3" when using a 2" x 4" extrusion.



15 SERIES ECONOMY FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657156

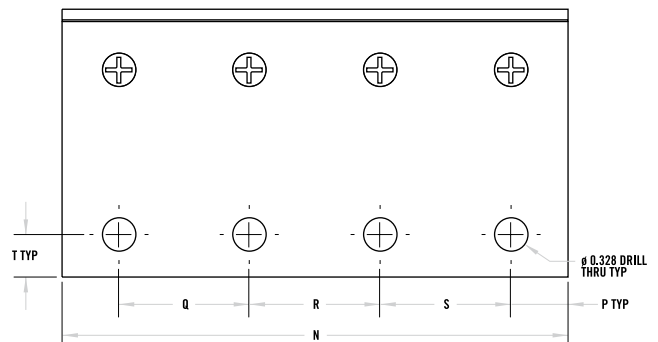
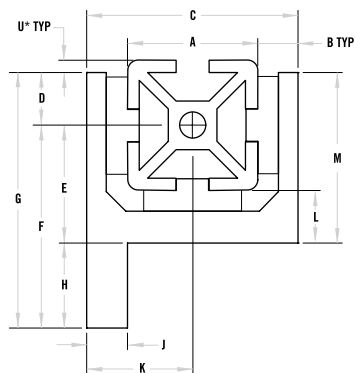


657157

ITEM #	DESCRIPTION
657156	15 Series Economy Short Flange Linear Bearing
657157	15 Series Economy Long Flange Linear Bearing

ITEM #	657156	657157
A	1.50	1.50
B	.500	.500
C	2.50	2.50
D	.625	.625
E	1.375	1.375
F	2.125	2.125
G	2.75	2.75
H	.750	.750
J	.500	.500
K	1.25	1.25
L	.625	.625
M	2.00	2.00
N	2.182	6.00
P	.656	.750
Q	1.50	1.50
R	N/A	1.50
S	N/A	1.50
T	.375	.375
U*	.125	.125

*Add 1.5" when using a 1.5" x 3" extrusion or 3" when using a 1.5" x 4" extrusion.



Linear Motion

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15 SERIES ECONOMY DOUBLE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657148

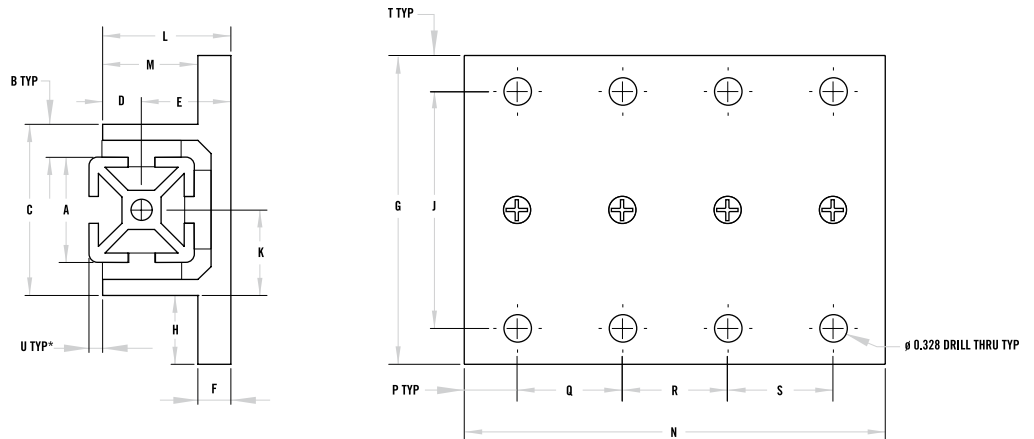


657158

ITEM #	DESCRIPTION
657148	15 Series Economy Short Double Flange Linear Bearing ⁽²⁵⁾
657158	15 Series Economy Long Double Flange Linear Bearing

ITEM #	657148	657158
A	1.00	1.00
B	.312	.312
C	1.625	1.625
D	.406	.406
E	.812	.812
F	.312	.312
G	2.937	2.937
H	.656	.656
J	2.250	2.250
K	.812	.812
L	1.218	1.218
M	.906	.906
N	1.875	4.000
P	.438	.500
Q	1.000	1.000
R	N/A	1.000
S	N/A	1.000
T	.375	.375
U*	.125	.125

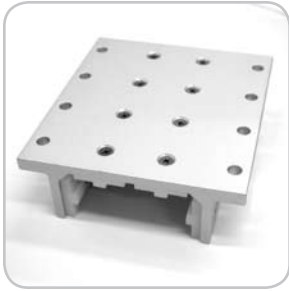
*Add 1.50" when using a 1.5" x 3" extrusion or 3" when using a 1.5" x 4.5" extrusion.



15 SERIES ECONOMY DOUBLEWIDE FLANGE LINEAR BEARINGS - U.S. Patent No. 5,429,438



657147

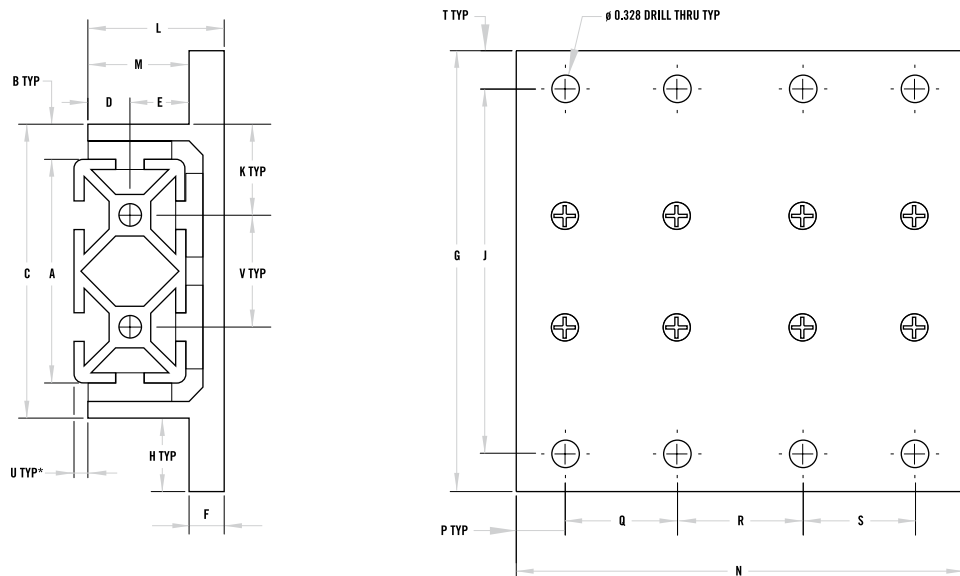


657149

ITEM #	DESCRIPTION
657147	15 Series Economy Short Doublewide Flange Linear Bearing
657149	15 Series Economy Long Doublewide Flange Linear Bearing

ITEM #	657147	657149
A	3.00	3.00
B	.500	.500
C	4.00	4.00
D	.640	.640
E	1.235	1.235
F	.375	.375
G	5.50	5.50
H	.750	.750
J	4.75	4.75
K	1.25	1.25
L	1.875	1.875
M	1.50	1.50
N	2.812	6.00
P	.656	.750
Q	1.50	1.50
R	N/A	1.50
S	N/A	1.50
T	.375	.375
U*	.125	.125
V	1.50	1.50

*Add 1.5" when using a 3" x 3" extrusion or 4.5" when using a 3" x 6" extrusion.



Linear Motion

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LINEAR BEARING BRAKE HANDLE KITS



ITEM #	DESCRIPTION
657106	10 Series L-Handle
657107	10 Series Hex Nut
657108	10 Series Wing Nut
657079	15 Series L-Handle
657080	15 Series T-Handle
657081	15 Series Star Handle
657082	15 Series Hex Nut
657083	15 Series Wing Nut

**Includes Handle, Stud and Washers*

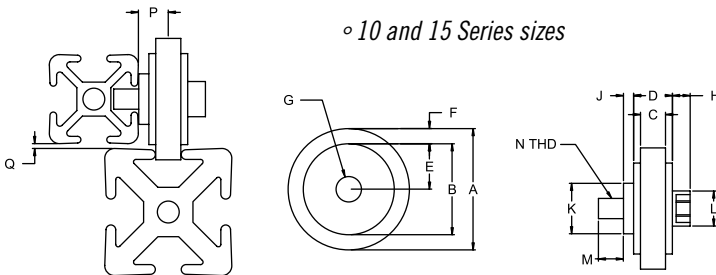
BLACK NYLON ROLLER WHEELS



ITEM #	DESCRIPTION
655222	10 S Roller Wheel
655223	10 S To 15 S Roller Wheel
655224	15 S Economy Roller Wheel
655221	15 S Deluxe Roller Wheel

- Use for guided linear motion
- Mounts to extrusion end or in T-Slot
- Made of high strength black nylatron
- Fasteners included
- 10 and 15 Series sizes

ITEM #	655221	655224	655223	655222
A	2	2	1.5	1.5
B	1.625	1.625	1.125	1.125
C	0.31	0.31	0.31	0.24
D	0.72	0.72	0.48	0.48
E	0.812	0.812	0.563	0.563
F	0.188	0.188	0.188	0.188
G	0.375	0.375	0.314	0.314
H	0.25	0.25	0.219	0.219
J	0.125	0.125	0.125	0.125
K	0.75	0.75	0.625	0.625
L	0.562	0.562	0.435	0.435
M	0.375	0.375	0.31	0.31
N	5/16-18	5/16-18	1/4-20	1/4-20
Q	0.06	0.06	0.06	0.06
P	0.485	0.485	0.37	0.37



		MOUNTS TO											
		1 x 1	1 x 2	2 x 2	1.5 x 1.5	1.5 x 1.5L	1.5 x 3.0	1.5 x 3.0L	1.5 x 4.5	3 x 3			
ROLLS IN	1 x 1	655222			655223								
	1 x 2												
	2 x 2												
	1.5 x 1.5	655221 & 655224											
	1.5 x 1.5L												
	1.5 x 3.0												
	1.5 x 3.0L												
	1.5 x 4.5												
3 x 3													

ROLLER WHEEL BRACKETS AND ASSEMBLIES

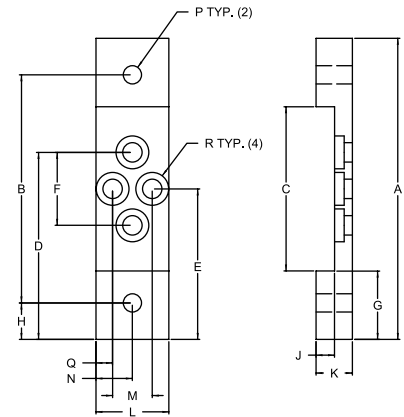


ITEM #	DESCRIPTION
655472	1010 Roller Wheel Bracket
655473	1010 Roller Wheel Bracket w/ 655222
655474	1020 Roller Wheel Bracket
655475	1020 Roller Wheel Bracket w/ 655222
655476	15 S Roller Wheel Bracket
655477	15 S Roller Wheel Bracket w/ 655221
655478	15 S Roller Wheel Bracket w/ 655224
655479	15 S Roller Wheel Bracket
655480	1530 Roller Wheel Bracket w/ 655221
655481	1530 Roller Wheel Bracket w/ 655224

- Ideal for framed doors
- Assembly part numbers include roller wheels
- Fasteners included for both assembly and bracket part numbers

INCLUDED HARDWARE

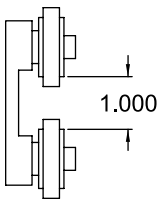
QTY	SERIES	DESCRIPTION
2	10 S	1/4-20 x 3/8" LHSCS
2	10 S	1/4-20 Std T-Nut
2	15 S	5/16-18 x 5/8" LHSCS
2	15 S	5/16-18 Std T-Nut



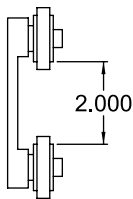
ITEM #	A	B	C	D	E	F	G	H	J	K	L	M	N	Q	P
655472	3.125	2.125	1.25	1.897	1.563	0.669	0.938	0.5	0.255	0.5	1	0.544	0.5	0.228	1/4-20
655474	4.125	3.125	2.25	2.562	2.063	1	0.938	0.5	0.255	0.5	1	0.544	0.5	0.228	1/4-20
655476	4.625	3.125	1.75	2.743	2.313	0.86	1.438	0.75	0.39	0.75	1.5	0.735	0.75	0.383	5/16-18
655479	6.125	4.625	3.25	3.813	3.063	1.5	1.438	0.75	0.39	0.75	1.5	0.735	0.75	0.383	5/16-18

ROLLER WHEEL BRACKETS AND ASSEMBLIES

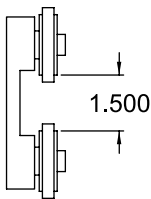
655473



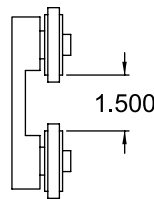
655475



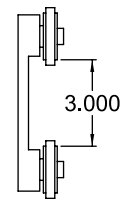
655477



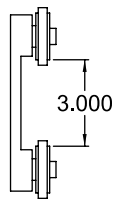
655478



655480



655481



		INDIVIDUAL PART NUMBER							
		655472	655474	655476	655479	655222	655223	655221	655224
ASSEMBLY PART #	655473	1				2			
	655475		1			2			
	655477			1				2	
	655480				1			2	
	655478			1					2
	655481				1				2

Linear Motion

LINEAR BEARING MACHINING SERVICES



ITEM #	DESCRIPTION
660093	10 S Brake Machining Service (.281 Hole)
660092	15 S Brake Machining Service (.328 Hole)

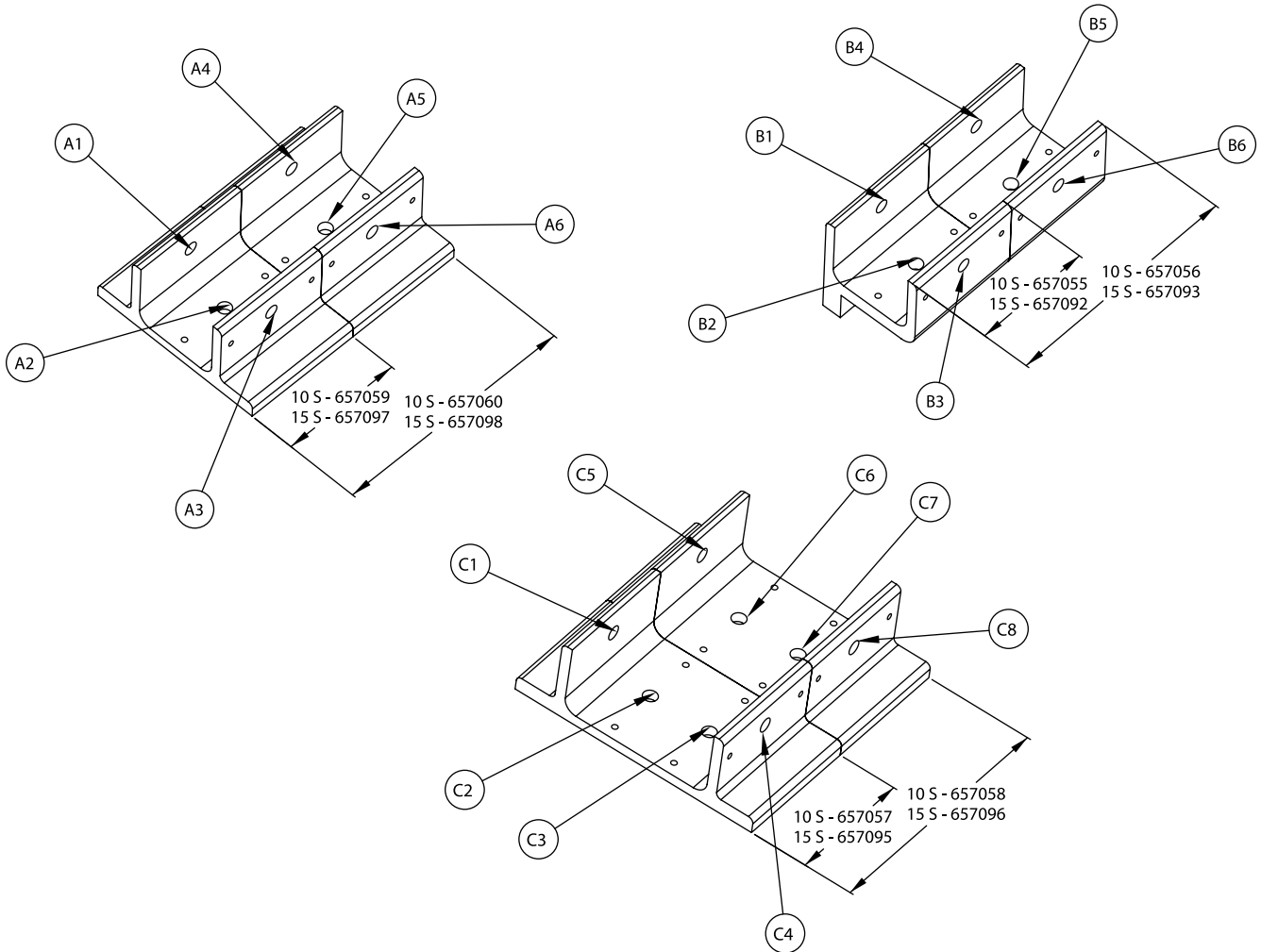
To order linear bearing machining services, specify the linear bearing, the machining service and the brake hole location.

Example - 657095 - 660092 @ C4

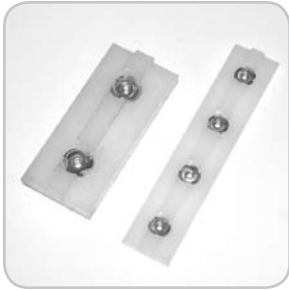
**We recommend using Linear Brakes on the side without the set screw if possible.*

» Refer to linear bearing drawings on pages 8:02 - 8:08 for dimensions.

When ordering linear bearing machining services, make sure the linear bearing and the machining service are both the same series.



LINEAR BEARING REPLACEMENT PADS



ITEM #	DESCRIPTION
657135	10 S Short Keyed Bearing Pad
657133	10 S Short Flat Bearing Pad
657136	10 S Long Keyed Bearing Pad
657134	10 S Long Flat Bearing Pad
657139	15 S Short Keyed Bearing Pad
657137	15 S Short Flat Bearing Pad
657140	15 S Long Keyed Bearing Pad
657138	15 S Long Flat Bearing Pad

TSLOTS LINEAR BEARINGS (Patent Pending)

The shimless linear bearing from Futura Industries provides accurate linear movement on TSLOTS extrusions. The bearing can be adjusted for the first time on an assembly or adjusted for wear while assembled to the application, providing that the adjustment screws are available to the adjustment tools. No shims, no disassembly, only accurate sliding.

1. Linear Bearing adjustable bearing pads are delivered in the open position. Slide the bearing on the extrusion to be used. (Fit will be loose, because of the open position.)
2. Using a 1/16 allen wrench for a 10 Series linear bearing, and a 3/32 allen wrench for 15 Series linear bearing, loosen the Flathead socket cap screws on each side of the linear bearing incrementally as follows. (Fig. #1)

- 10 Series Bearing, 4-40 THREAD
- 15 Series Bearing, 8-32 THREAD

**Each flathead screw should be loosened the same amount, to provide even shimming on the extrusion.*

3. Tighten each set screw, using a .050 allen wrench for a 10 Series linear Bearing, and a 5/64 allen wrench for a 15 Series linear bearing, until each flat head screw is properly seated in each countersink. Hint: The amount of turns per set screw will be the same amount as for the flat head socket cap screw. (Fig. #2)

4. For fine tuning: Repeat steps 2 & 3.

**Replacement bearing pads are available through futura industries or your distributor. Due to patent requirements, futura industries requires all users of the aforementioned product to only replace bearing pads as per the drawing below. Only the opposing sides have keyed bearing pads. (Fig. #3)*

