

EURO-BEARINGS LTD

COMBINED ROLLER BEARINGS
&
MATING STEEL PROFILES
CATALOGUE



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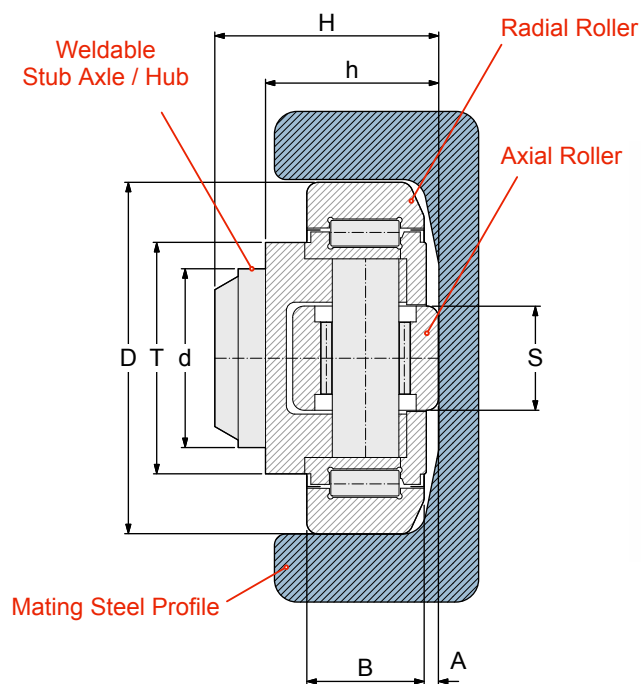
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**STANDARD
CR BEARINGS**

Our standard Combined Roller bearing consists of a hub, a radial bearing and an axial roller

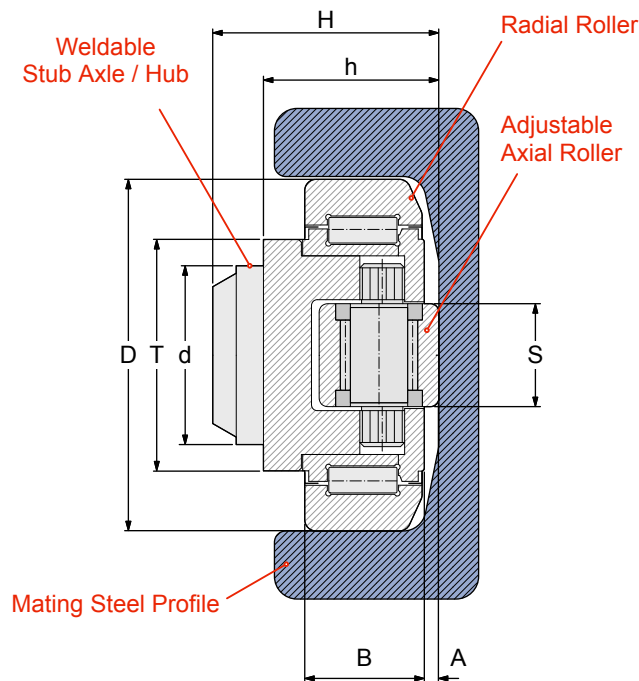
BEARING REFERENCE	Dimensions (mm)									C	C ₀	C _a	C _{oa}	I.D. of radial bearing	PROFILE REF	PLATE REF
	D	T	d	H	h	B	A	S	r	kN	kN	kN	kN			
4.053	52.5	40	30	33	27	17	2	15	2	24	32	7	7	28	EC053	PL 00
4.054	62	42	30	37.5	30.5	20	2.5	20	3	31	35.5	11.1	11.5	38	2890	PL 0
4.055	70.1	48	35	44	36	23	2.5	22	4	45.5	51	14	13	42	2867 or 3018	PL 1
4.056	77.7	54	40	48	36.5	23	3	24	4	48	56.8	18	18	46	2810	PL 2
4.057	77.7	53	40	40	29	23	3	24	4	48	56.8	18	18	46	3019	
4.058	88.4	59	45	57	44	30	3.5	26	3	68	72	23	23	50	2811 or 3020	PL 3
4.059	101.2	67	50	46	33	28	3	30	3	73	82	25	27	58	2912	
4.060	107.7	71	55	54	40	31	3	34	5	81	95	31	36	63	3100	
4.061	107.7	71	60	69	55	31	3	34	5	81	95	31	36	63	2862	PL 4
4.062	123	80	60	72.3	56	37	5	40	5	110	132	43	50	71	2891 or 3353	PL 4
4.063	149	103	60	78.5	58.5	45	5.5	50	3	151	192	68	71	90	2757	PL 6

C = Dynamic Load Capacity for radial roller
 C₀ = Static Load Capacity for radial roller
 C_a = Dynamic Load Capacity for axial (side) roller
 C_{oa} = Static Load Capacity for axial roller

Notes

4.053 and 4.054 bearings do not have grease holes.
 All of our bearings are pre-greased.

**See page 35 for information on how
to select the correct size of bearing
and mating steel channel.**

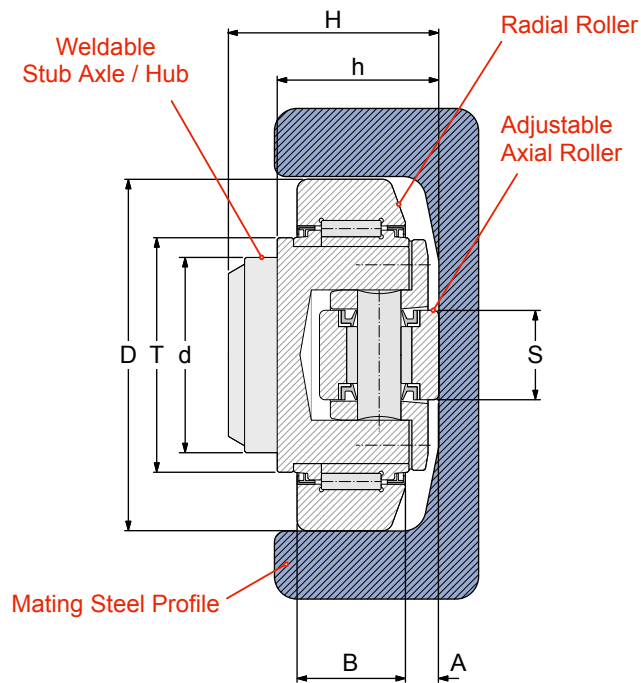
**ECCENTRIC ADJUSTABLE
CR BEARINGS**

Our adjustable Combined Roller bearings have the side (axial) roller mounted on an eccentric shaft which allows for adjustment of their height (dimension 'h' on the chart below).

BEARING REFERENCE	Dimensions (mm)									C	C ₀	C _a	C _{oa}	Maximum RPM	PROFILE REF	PLATE REF
	D	T	d	H	h	B	A	S	r	kN	kN	kN	kN			
4.454	62	42	30	37.5	30.5 - 32	20	4	20	3	31	35.5	11	11	900	2890	PL 0
4.455	70.1	48	35	44	36 - 37.5	23	4	20	4	45	51	18	18	900	2867	PL 1
4.456	77.7	54	40	48	37 - 38.5	23	3.5	26	4	48	56.8	18	18	800	2810	PL 2
4.457	77.7	54	40	40	29 - 30.5	23	3.5	26	4	48	56.8	18	18	800	3019	
4.458	88.4	59	45	57	44 - 45.5	30	4	26	4	68	72	23	23	750	2811	PL 3
4.459	101.2	69	50	46	33 - 35	26	4.5	30	3	73	82	25	27	700	2912	
4.460	107.7	69	55	54	40 - 42	31	4	30	5	81	95	25	27	650	3100	
4.461	107.7	69	60	69	55 - 57	31	4	30	5	81	95	25	27	650	2862	PL 4
4.462	123	80	60	72.3	56 - 60	37	4.5	34	5	110	132	31	36	550	2891	PL 4
4.463	149	103	60	78.5	58.5 - 62.5	45	6	34	3	151	192	31	36	450	2757	PL 6

C = Dynamic Load Capacity for radial roller
C₀ = Static Load Capacity for radial roller
C_a = Dynamic Load Capacity for axial (side) roller
C_{oa} = Static Load Capacity for axial roller

For guidance on how to adjust the height of the face roller of our eccentric CR bearings please see page 34.

**SHIM ADJUSTABLE
CR BEARINGS**

These combined bearings are adjustable by introducing shims between the hub and the axial roller carrier. This enables the overall height of the bearing to be altered.

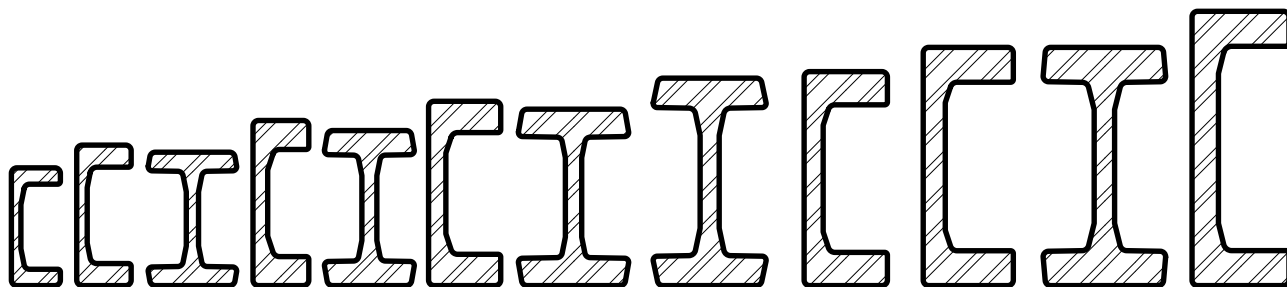
BEARING	Dimensions (mm)									C	C ₀	C _a	C _{oa}	PROFILE	PLATE
REFERENCE	D	T	d	H	h	B	A	S	r	kN	kN	kN	kN	REF	REF
4.072	62	42	30	43	33	20	5.5	16	3	31	35.5	8	8	2890	PL 0
4.073	70.1	48	35	48	40	23	6.5	16	4	45.5	51	14	14	2867	PL 1
4.074	77.7	54	40	51	39.5	23	7	21	4	48	56.8	14	14	2810	PL 2
4.075	77.7	54	40	45	34	23	7	21	4	48	56.8	14	14	3019	
4.076	88.4	59	45	61	48	30	7	21	4	68	72	15	15	2811	PL 3
4.077	101.2	67	50	50.5	37.5	28	7	21	5	73	83	18	19	2912	
4.078	107.7	71	55	58.5	44.5	31	8	33	5	81	95	31	36	3100	
4.079	123	80	60	75.8	59.5	37	8	33	5	110	132	31	36	2891	PL 4
4.080	149	103	60	89	69	45	15	50	3	151	192	68	71	2757	PL 6

C = Dynamic Load Capacity for radial roller

C₀ = Static Load Capacity for radial roller

C_a = Dynamic Load Capacity for axial (side) roller

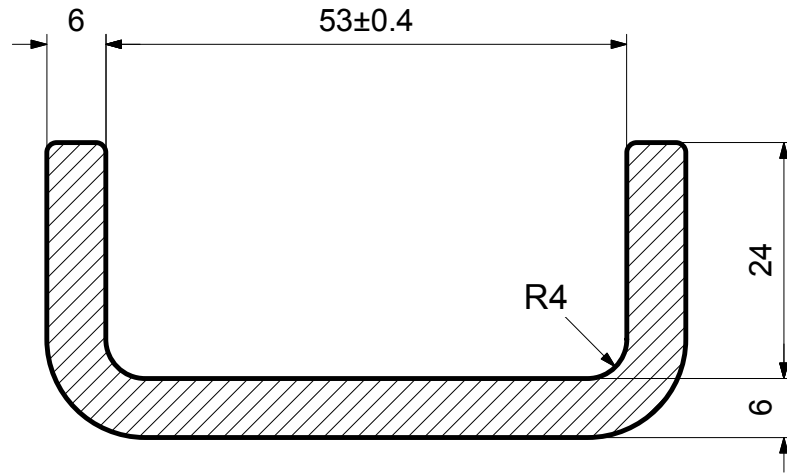
C_{oa} = Static Load Capacity for axial roller

STANDARD CHANNEL
Overview

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
EC053	65	30	53	5.2	4.053	PLATE 00	C Section
2890	86.5	36	62.5	10.5	4.054	PLATE 0	C Section
2867	103.2	40	70.8	14.8	4.055	PLATE 1	C Section
3018	98	65	70	19.4	4.055	-	I Section
2810	121.3	41	78.7	20.9	4.056	PLATE 2	C Section
3019	113.9	66.1	77.9	25.3	4.057	-	I Section
2811	135.4	53	89.4	28.6	4.058	PLATE 3	C Section
3020	129.6	81	88.6	34	4.058	-	I Section
2912	140.1	69.9	102	31.2	4.059	-	I Section
3100	152.4	83	108.4	40.8	4.060	-	I Section
2862	157.2	61.2	108.4	36	4.061	PLATE 4	C Section
2891	175	66.2	123.8	42.8	4.062	PLATE 4	C Section
3353	175	90	123.8	51.4	4.062	-	I Section
2757	201.5	71.2	150.1	52.4	4.063	PLATE 6	C Section

**SEE THE FOLLOWING PAGES FOR DETAILED
DRAWINGS OF ALL OUR PROFILES**

***CAD files (dwg format) available for
download from our website.***

STANDARD CHANNEL**EC053**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
EC053	65	30	53	5.2	4.053	PLATE 00	C Section

PROFILE REFERENCE: **EC053**

Weight: 5.2kg per metre

Moment of Area (Wx): 11.6cm³

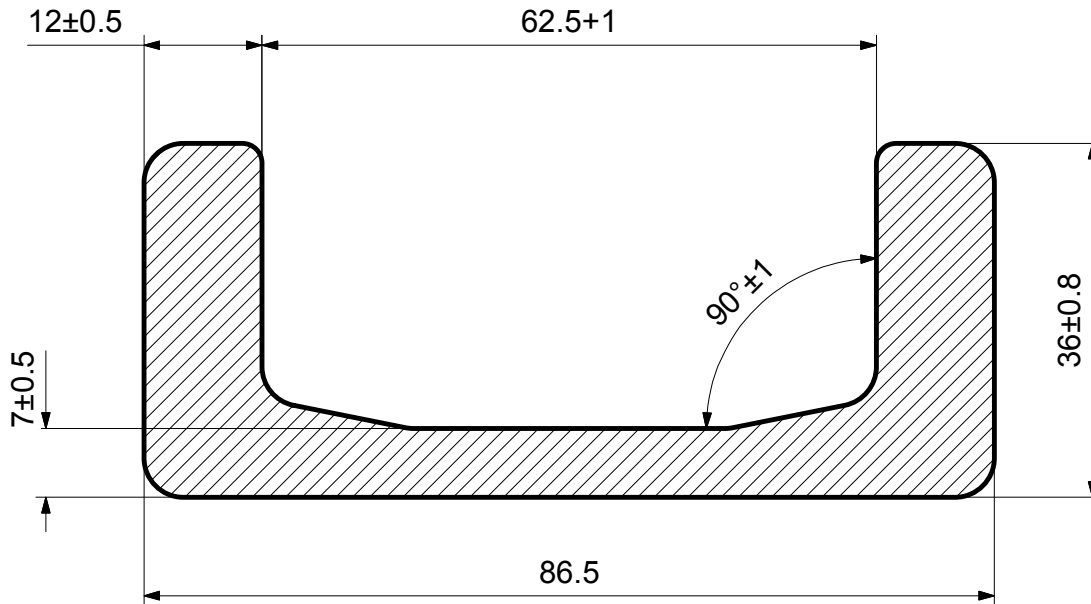
Material: S355J0 (cold rolled)

Use with our:

4.053 Standard Combined Roller Bearing

Other suitable bearings:

MRS 900 Channel Ball Bearing

STANDARD CHANNEL**2890**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2890	86.5	36	62.5	10.5	4.054	PLATE 0	C Section

PROFILE REFERENCE: **2890**

Weight: 10.5kg per metre

Moment of Area (Wx): 31.7cm³

Material: S450J2

Use with our:

4.054 Standard Combined Roller Bearing

4.454 Eccentric Adjustable CR Bearing

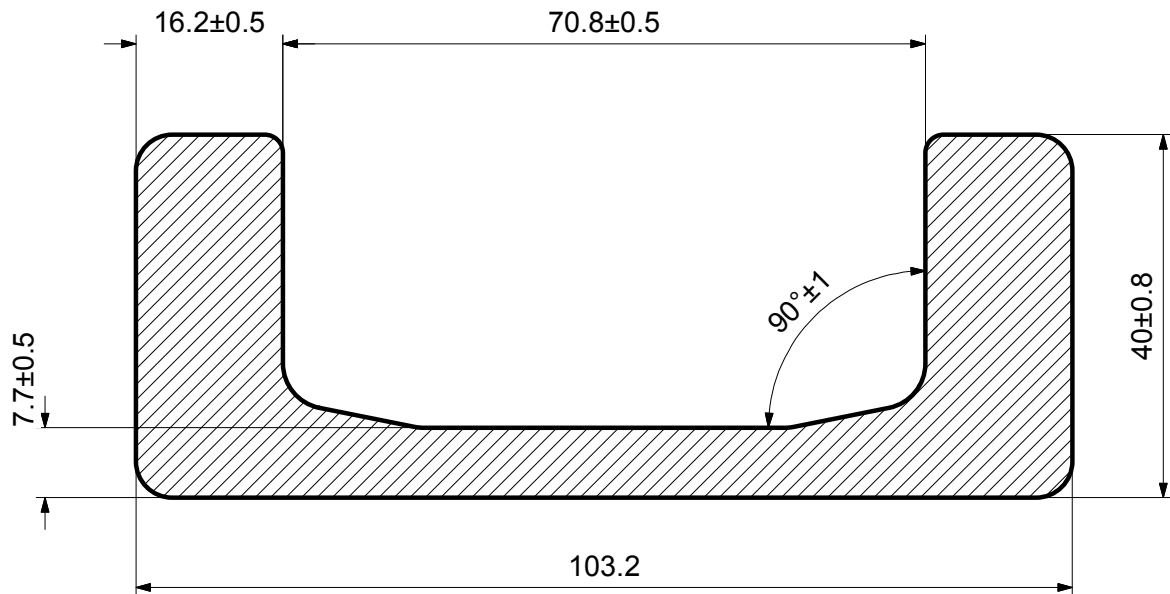
Other suitable bearings:

4.072 Shim Adjustable CR Bearing

2.2062 Radial Roller Bearing

MRS 948 Channel Ball Bearing

STANDARD CHANNEL

2867

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2867	103.2	40	70.8	14.8	4.055	PLATE 1	C Section

PROFILE REFERENCE: **2867**

Weight: 14.8kg per metre

Moment of Area (Wx): 53.0cm³

Material: S450J2

Use with our:

4.055 Standard Combined Roller Bearing

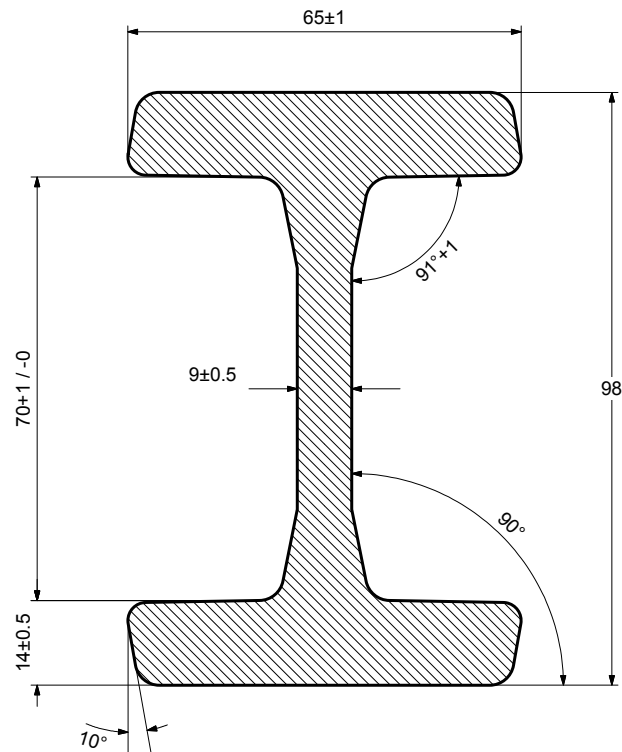
4.455 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.073 Shim Adjustable CR Bearing

2.2070 Radial Roller Bearing

MRS 901 Channel Ball Bearing

STANDARD CHANNEL**3018**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
3018	98	65	70	19.4	4.055	PLATE 1	I Section

PROFILE REFERENCE: **3018**

Weight: 19.4kg per metre

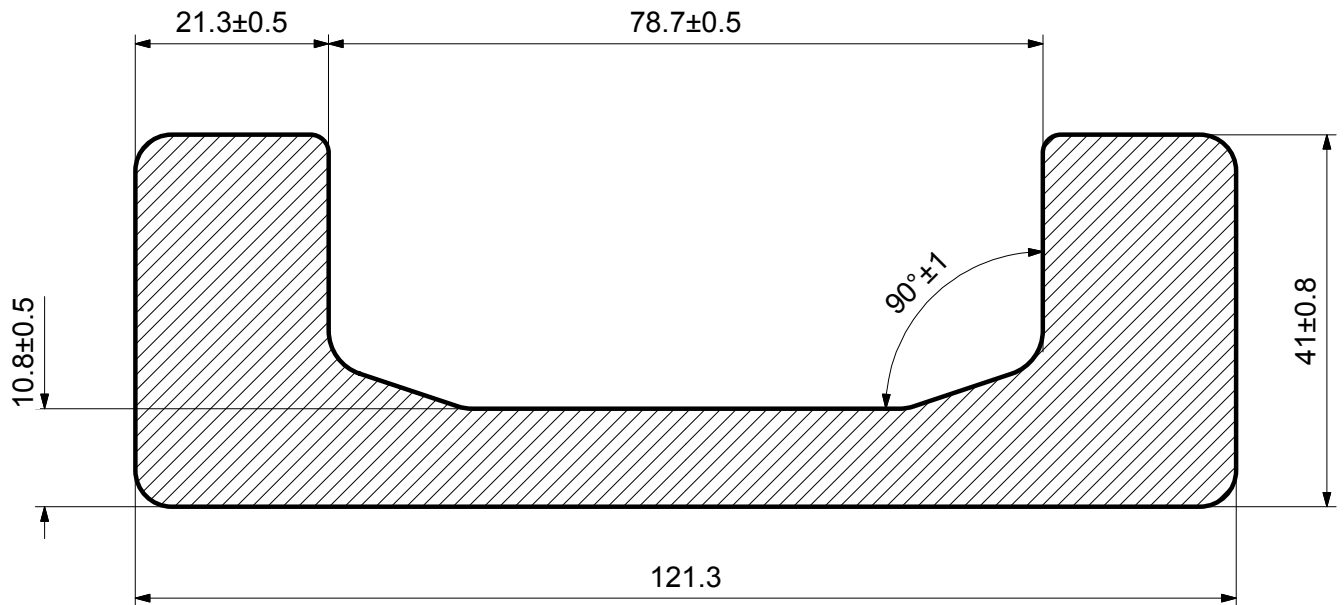
Moment of Area (Wx): 70.2cm³

Material: S450J2

Use with our:

4.055 Standard Combined Roller Bearing

4.455 Eccentric Adjustable CR Bearing

STANDARD CHANNEL**2810**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2810	121.3	41	78.7	20.9	4.056	PLATE 2	C Section

PROFILE REFERENCE: **2810**

Weight: 20.9kg per metre

Moment of Area (Wx): 81.3 cm^3

Material: S450J2

Use with our:

4.056 Standard Combined Roller Bearing

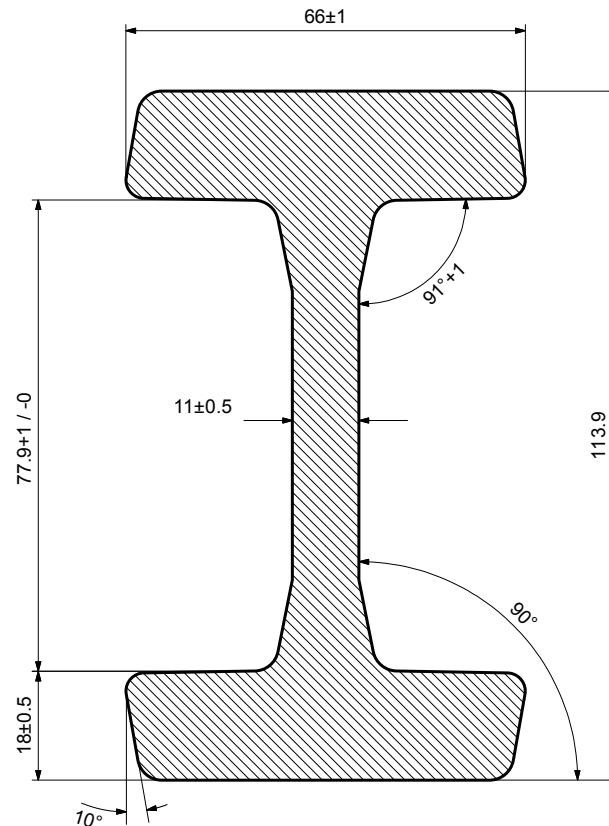
4.456 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.074 Shim Adjustable CR Bearing

2.2077 Radial Roller Bearing

MRS 907 Channel Ball Bearing

STANDARD CHANNEL**3019**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
3019	113.9	66.1	77.9	25.3	4.057	-	I Section

PROFILE REFERENCE: **3019**

Weight: 25.3kg per metre

Moment of Area (Wx): 101.7cm³

Material: S450J2

Use with our:

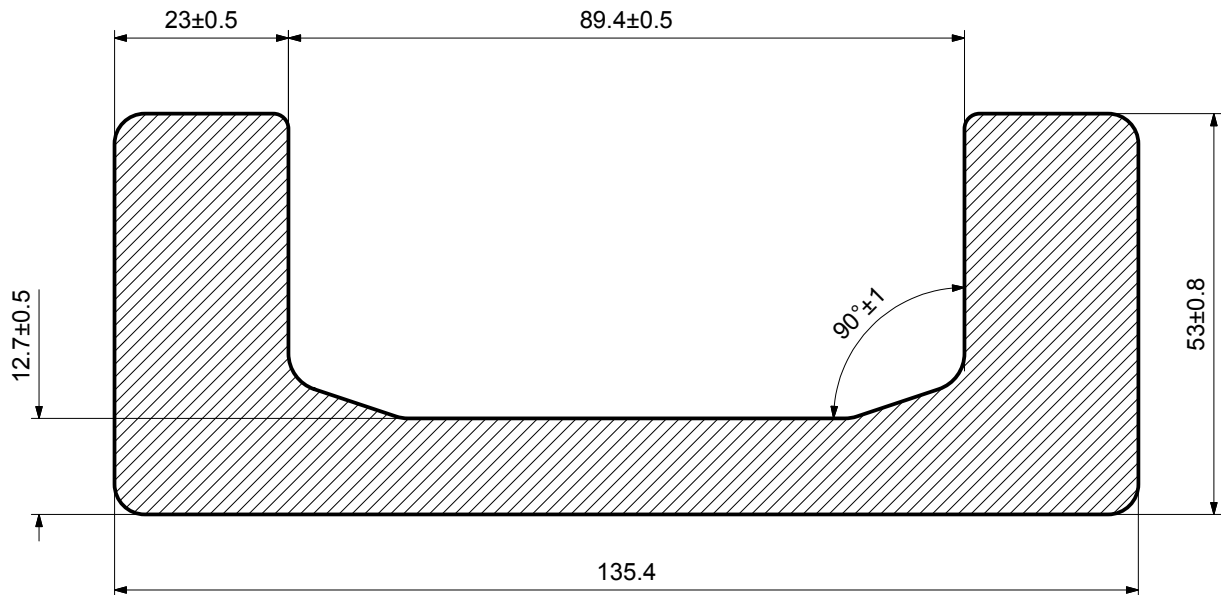
4.057 Standard Combined Roller Bearing

4.457 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.075 Shim Adjustable CR Bearing

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STANDARD CHANNEL**2811**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2811	135.4	53	89.4	28.6	4.058	PLATE 3	C Section

PROFILE REFERENCE: **2811**

Weight: 28.6kg per metre

Moment of Area (Wx): 127.8cm³

Material: S450J2

Use with our:

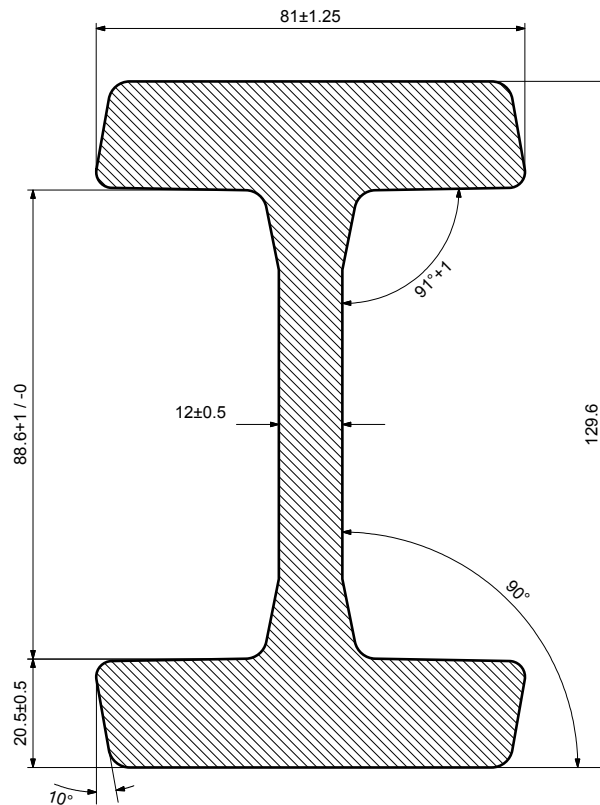
4.058 Standard Combined Roller Bearing

4.458 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.076 Shim Adjustable CR Bearing

2.2088 Radial Roller Bearing

STANDARD CHANNEL**3020**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
3020	129.6	81	88.6	34	4.058	PLATE 3	I Section

PROFILE REFERENCE: **3020**

Weight: 34.1kg per metre

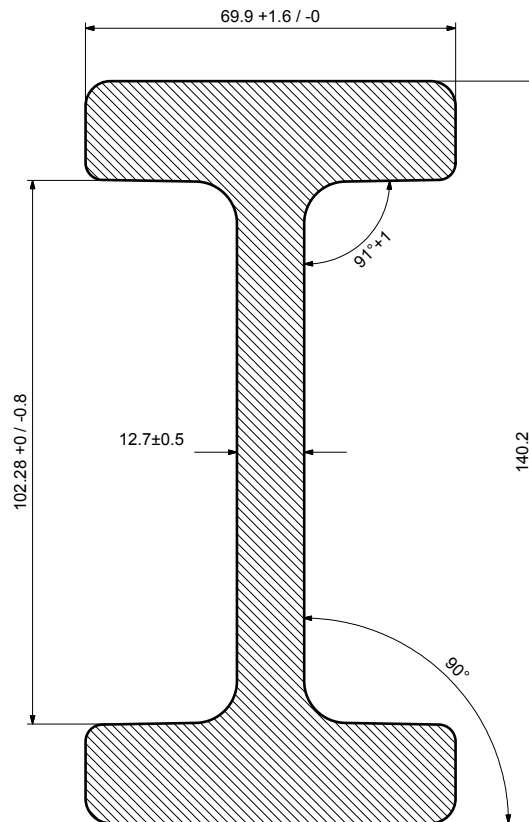
Moment of Area (Wx): 160cm³

Material: S450J2

Use with our:

4.058 Standard Combined Roller Bearing

4.458 Eccentric Adjustable CR Bearing

STANDARD CHANNEL**2912**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2912	140.2	69.9	102.28	31.2	4.059	-	I Section

PROFILE REFERENCE: **2912**

Weight: 31.2kg per metre

Moment of Area (Wx): 156cm³

Material: S450J2

Use with our:

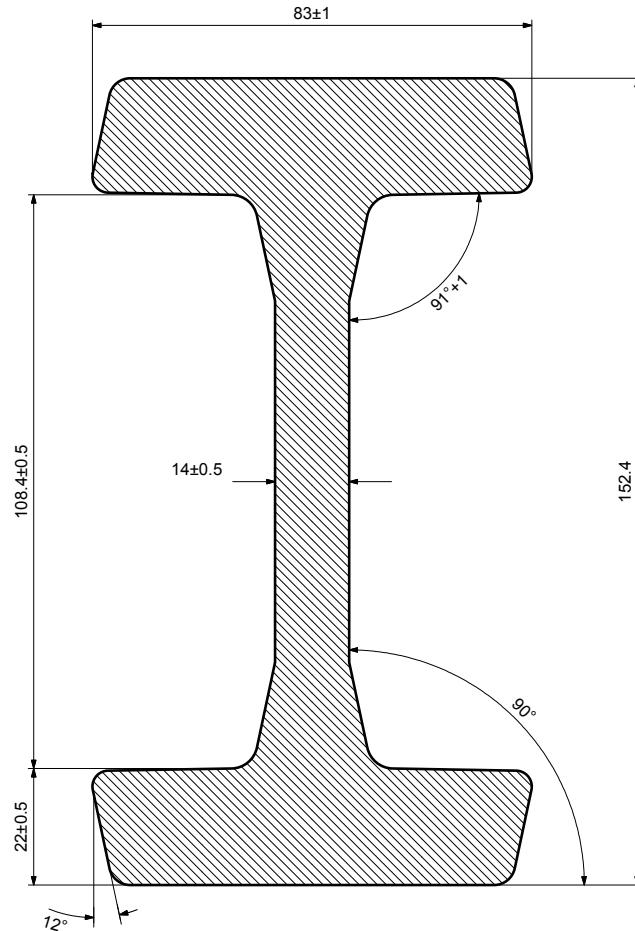
4.059 Standard Combined Roller Bearing

4.459 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.077 Shim Adjustable CR Bearing

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STANDARD CHANNEL**3100**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
3100	152.4	83	108.4	40.6	4.060	-	I Section

PROFILE REFERENCE: **3100**

Weight: 40.6kg per metre

Moment of Area (Wx): 219.1cm³

Material: S450J2

Use with our:

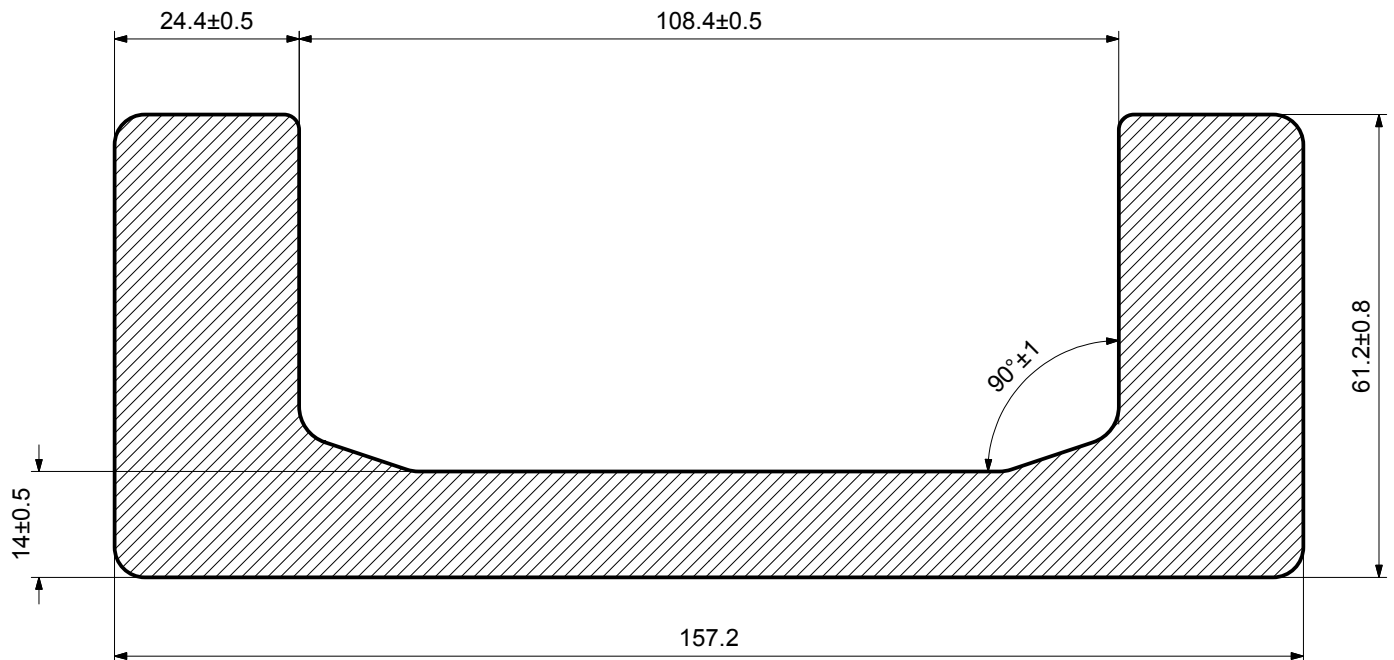
4.060 Standard Combined Roller Bearing

4.460 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.078 Shim Adjustable CR Bearing

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STANDARD CHANNEL**2862**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2862	157.2	61.2	108.4	36	4.061	PLATE 4	C Section

PROFILE REFERENCE: **2862**

Weight: 36.0kg per metre

Moment of Area (Wx): 190.1cm³

Material: S450J2

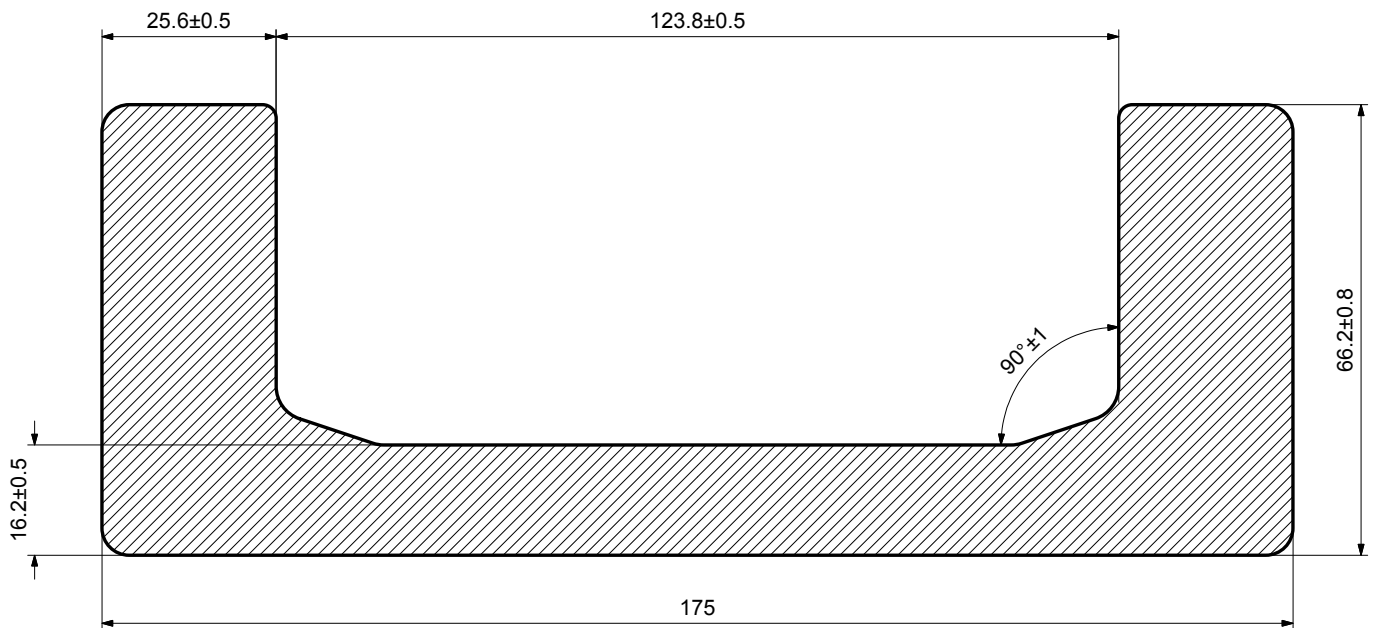
Use with our:

4.061 Standard Combined Roller Bearing

4.461 Eccentric Adjustable CR Bearing

Other suitable bearings:

2.2107 Radial Roller Bearing

STANDARD CHANNEL**2891**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2891	175	66.2	123.8	42.8	4.062	PLATE 4	C Section

PROFILE REFERENCE: **2891**

Weight: 42.8kg per metre

Moment of Area (Wx): 249.7cm³

Material: S450J2

Use with our:

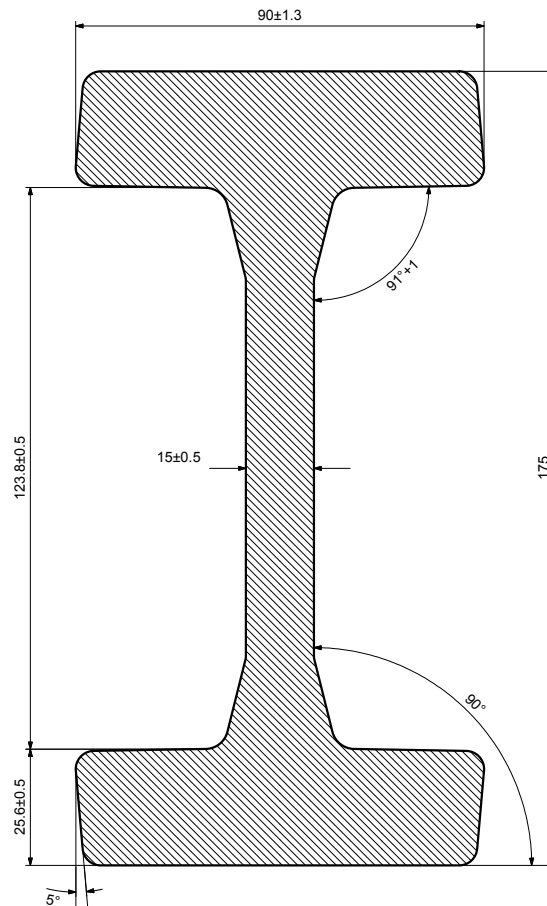
4.062 Standard Combined Roller Bearing

4.462 Eccentric Adjustable CR Bearing

Other suitable bearings:

2.2123 Radial Roller Bearing

4.079 Shim Adjustable CR Bearing

STANDARD CHANNEL**3353**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
3353	175	90	123.8	51.4	4.062	PLATE 4	I Section

PROFILE REFERENCE: **3353**

Weight: 51.4kg per metre

Moment of Area (Wx): 322cm³

Material: S450J2

Use with our:

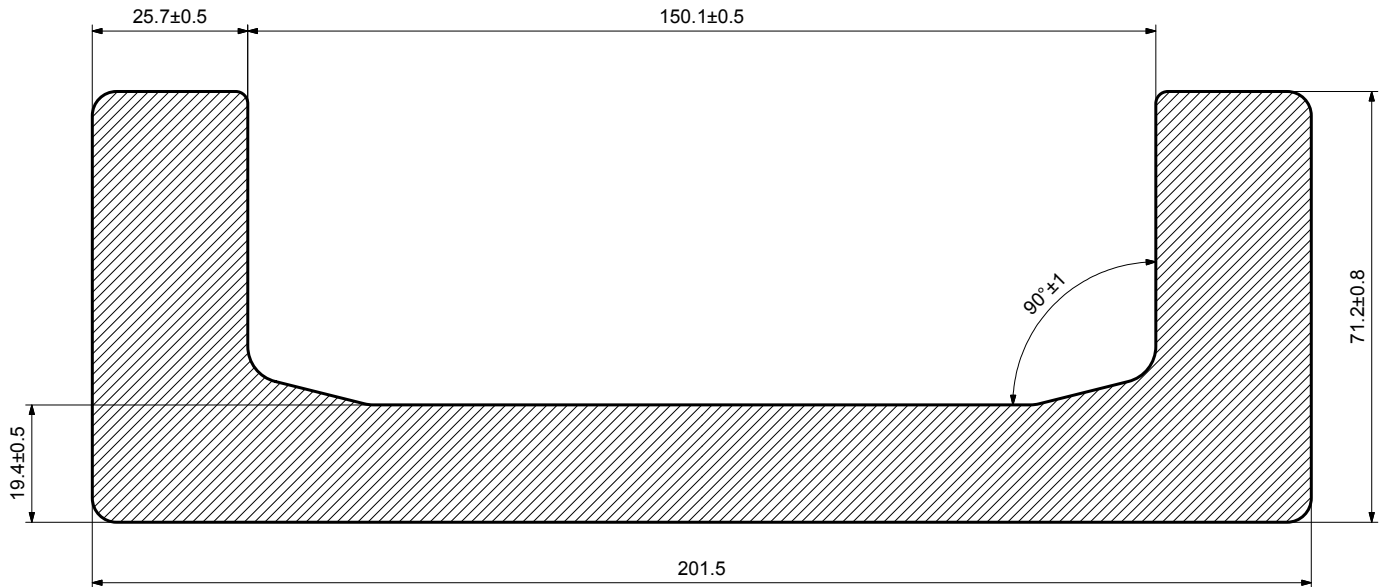
4.062 Standard Combined Roller Bearing

4.462 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.079 Shim Adjustable CR Bearing

2.2123 Radial Roller Bearing

STANDARD CHANNEL**2757**

Profile Reference	Web Height mm	Flange Width mm	Channel Height mm	Weight kg / metre	Bearing Reference	Plate Reference	Section Shape
2757	201.5	71.2	150.1	52.3	4.063	PLATE 6	C Section

PROFILE REFERENCE: **2757**

Weight: 52.3kg per metre

Moment of Area (Wx): 340cm³

Material: S450J2

Use with our:

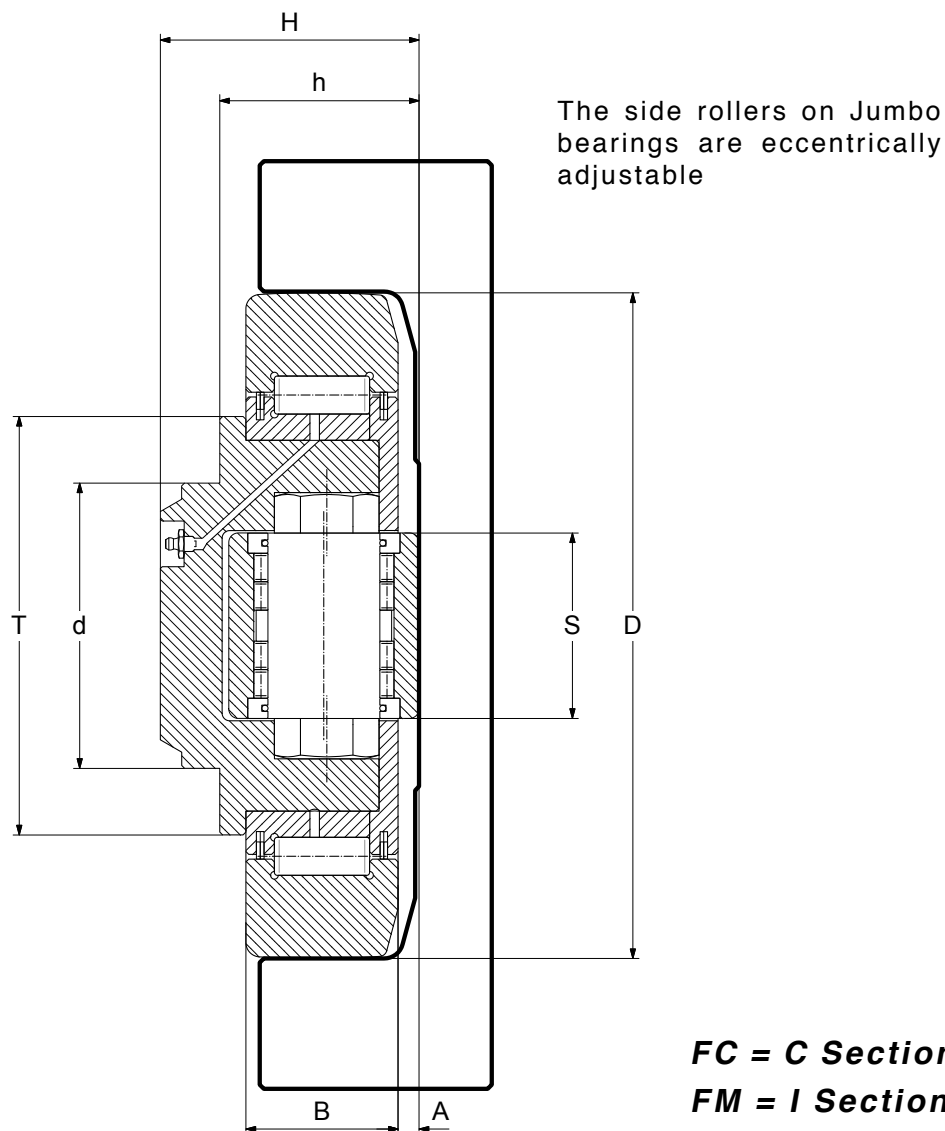
4.063 Standard Combined Roller Bearing

4.463 Eccentric Adjustable CR Bearing

Other suitable bearings:

4.080 Shim Adjustable CR Bearing

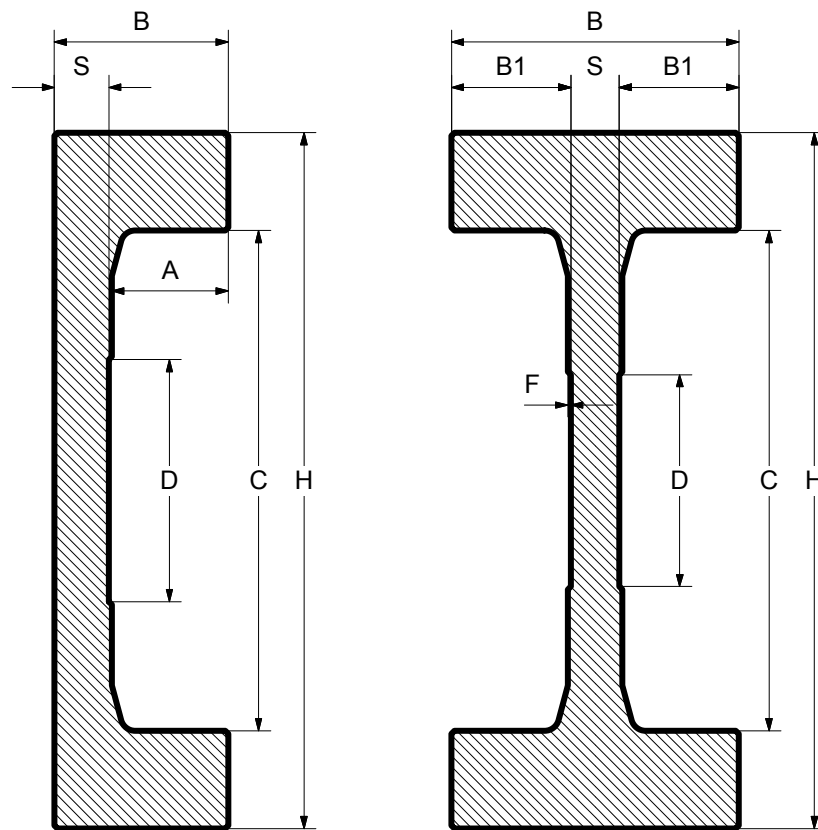
2.2149 Radial Roller Bearing

JUMBO CR BEARINGS

BEARING REFERENCE	Dimensions (mm)										Radial	Radial	Axial	Axial	PROFILE REF
	D	T	d	H	h	B	A	S	r	C (kN)	C ₀ (kN)	C (kN)	C ₀ (kN)	C / I SECTION	
4.089	165	113	80	69	53 - 56	40	5	50 40	3	213	388	85 46	133 79	FC165 / FM165	
4.090	190	124	100	84.5	64.5 - 67.5	48	6.5	60 40	4	266	500	100 46	180 79	FC190 / FM190	
4.091	220	146	110	94.5	74.5 - 77.5	58	6.5	75 60	5	326	681	138 101	257 173	FC220 / FM220	
4.092	250	168	120	102	77 - 80	60	7	75 60	5	369	748	138 101	257 173	FC250 / FM250	
4.093	280	188	150	119.5	89.5 - 93.5	72	7.5	90 60	5	489	1066	182 101	488 173	FC280 / FM280	
4.094	320	218	140	135	110 - 114	85	10	90	8	642	1370	210	422	Profile made to order	
4.095	340	240	140	150	120 - 124	89	10	100	8	735	1600	232	463	Profile made to order	
4.096	390	242	170	200	150 - 154	118	10	100	8	1050	2243	232	463	Profile made to order	

C = Dynamic Load Capacity

C₀ = Static Load Capacity

JUMBO CHANNEL
Overview

Material: S355

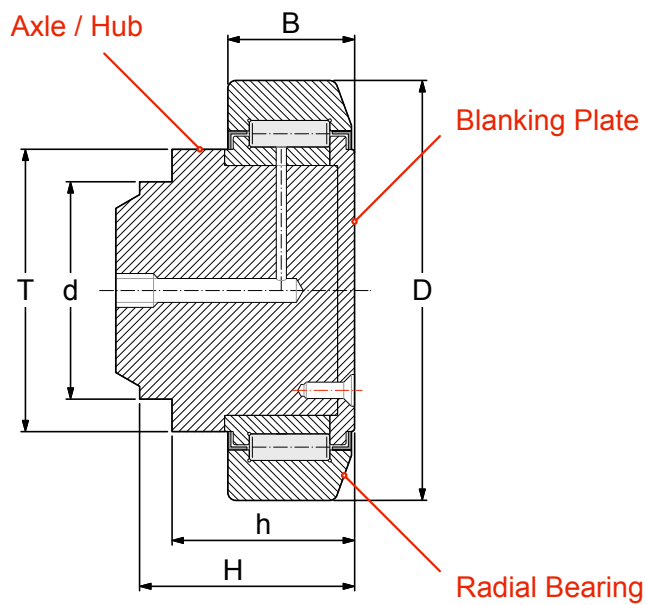
C SECTION

Profile	Dimensions (mm)						Weight	Ex	Ey	Lx	Ly	Wx	Wy
Reference	C	H	B	S	D	A	(kg / m)	(mm)	(mm)	(cm4)	(cm4)	(cm3)	(cm3)
FC165	165.4	230	57.5	18	80	38.5	53.3	19.9	115	4410.5	174.6	383.5	87.5
FC190	190.4	255	77	22	80	53	73.7	25.9	127.5	7631.6	434.2	598.6	167.7
FC220	220.4	295	85	20	125	62.5	86.1	29	147.5	12633	672.0	856.4	231.7
FC250	250.4	344	94	26.5	125	65.5	122.8	32.4	172	23372	1117.4	1358.8	344.9
FC280	280.4	394	114	26.5	125	85.5	161.85	40.8	157	42474	2354.8	2156	577

For profiles FC320, FC340 and FC390 please refer to our website.

I SECTION

Profile	Dimensions (mm)							Weight	Ex	Ey	Lx	Ly	Wx	Wy
Reference	C	H	B	S	D	B1	F	(kg / m)	(mm)	(mm)	(cm4)	(cm4)	(cm3)	(cm3)
FM165	165.4	230	95	16	70	39.5	1	72.7	47.5	115	6894	472	600	99
FM190	190.4	255	130	20	70	55	2	100.4	65	127.5	12003	1203	941	185
FM220	220.4	295	150	20	90	65	2	126.3	75	147.5	20991	2119	1423	283
FM250	250.4	345	160	25	90	67.5	2	172.7	80	171.5	37838	3274	2206	409
FM280	280.4	375	190	30	120	80	2	212.8	95	187.5	55163	5492	2942	578

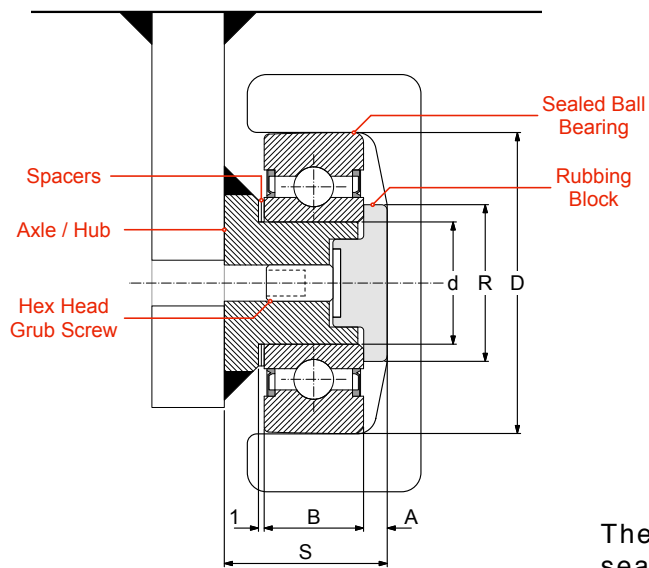
RADIAL BEARINGS

BEARING REFERENCE	Dimensions (mm)							C kN	C ₀ kN	PROFILE REF
	D	T	d	H	h	B	r			
2.2062	62	42	30	36.5	29.5	20	3	39	65	2890
2.2070	70.1	48	35	42	34	23	4	56	93	2867
2.2077	77.7	53	40	45.5	34	23	4	57	101	2810
2.2088	88.4	59	45	54	41	30	4	82	134	2811
2.2107	107.7	71	60	65.5	51.5	31	5	96	174	2862
2.2123	123	80	60	67.8	51.5	37	5	131	243	2891
2.2149	149	103	60	74	54	45	3	183	353	2757

C = Dynamic Load Capacity

C₀ = Static Load Capacity

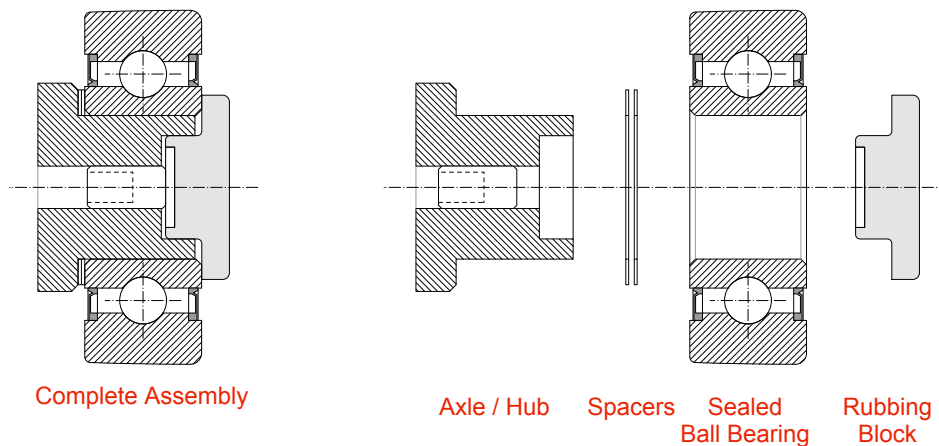
See page 35 for information on how to select the correct size of bearing and mating steel channel.

CHANNEL BALL BEARINGS

The complete assembly includes the sealed ball bearing, a metal hub (ST52) and a polyamide rubbing block.

Assembly	Bearing	Dimensions (mm)					Load		Load	PROFILE
Part No.	Part No.	d	D	B	S (Max - Min)	R	A	(kN)	Centre	REF
10000	MRS 900	25	52.4	17	28-27	32	6	2 to 4	500mm	EC053
10001	MRS 948	25	62.4	20	33 - 31	32	5	5 to 8	500mm	2890
10002	MRS 901	30	70	22	38 - 36	40	5	10 to 15	500mm	2867 / 3018
10003	MRS 907	30	78	22	38 - 36	40	5	15 to 20	500mm	2810 / 3019

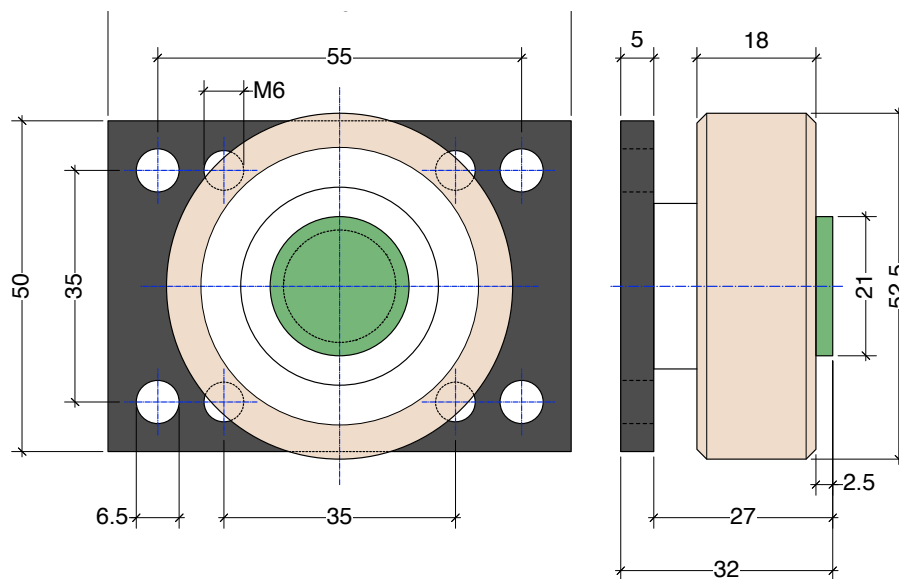
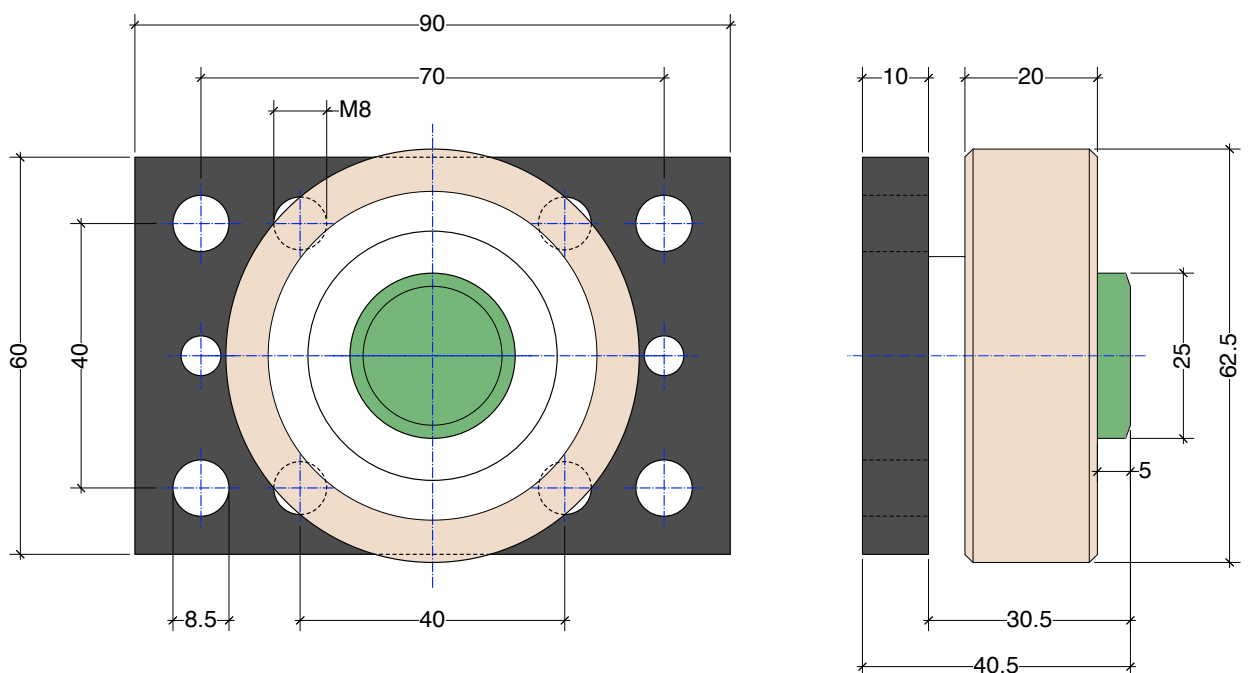
↑ The bearings can be purchased separately- please use this part number.

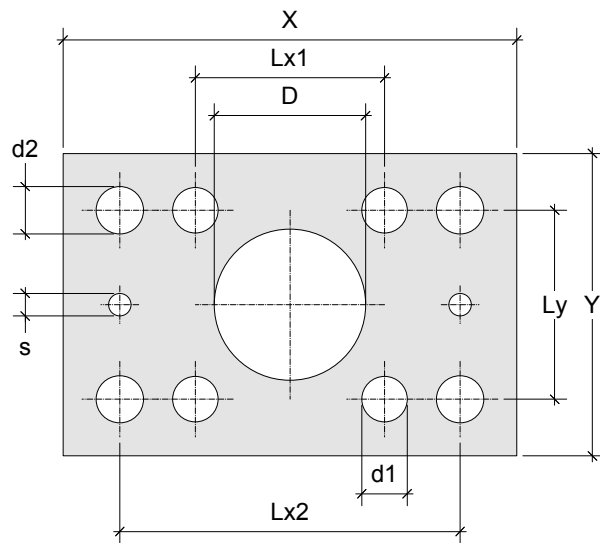


VULKOLLAN BEARINGS

The Vulkollan coated bearings are available in two sizes - 52.5mm $\varnothing$ and 62.5mm $\varnothing$. They are designed to be used with the standard channels.

The complete assembly includes the bearing, the hub, an Oilamid rubbing block & the mounting plate. The Oilamid block helps the system run true and can be adjusted via a screw.

V.053+PLV53 - for use with EC053 rail**V.054+PLV54 - for use with 2890 rail**

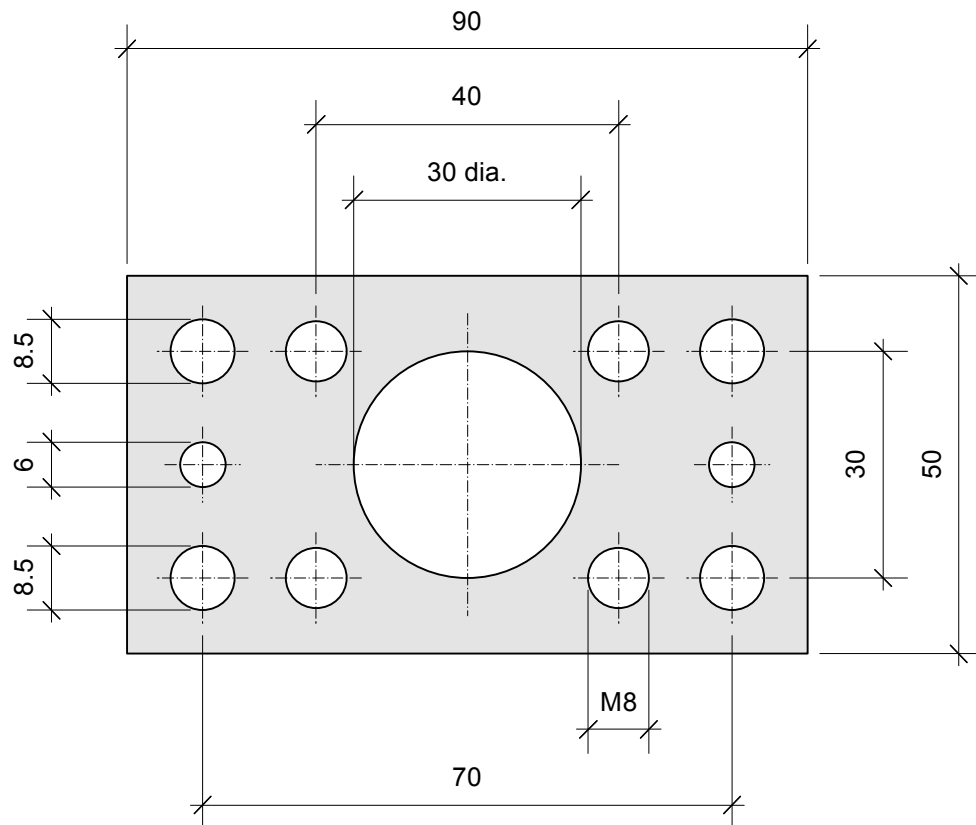
MOUNTING PLATES
Overview

Z = Thickness

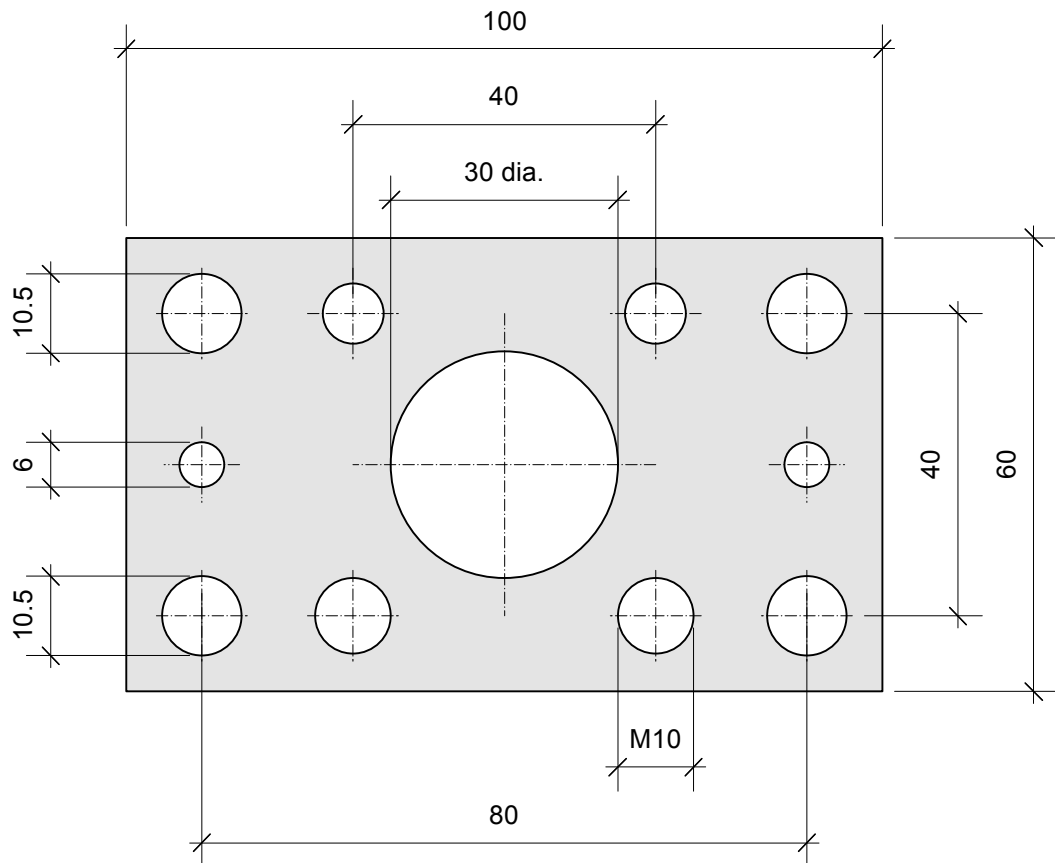
Plate Reference	For Bearing	Dimensions (mm)									
		X	Y	Z	Lx1	Lx2	Ly	d1	d2	D	s
PL00	4.053	90	50	10	40	70	30	M8	8.5	30	6
PL0	4.054	100	60	10	40	80	40	M10	10.5	30	6
PL1	4.055	120	80	15	50	90	50	M12	12.5	35	6
PL2	4.056	120	80	15	50	90	50	M12	12.5	40	6
PL3	4.058	120	120	20	90	-	90	M16	-	45	-
PL4	4.061 & 4.062	180	120	20	80	140	80	M16	17	60	6
PL6	4.063	200	150	20	80	160	100	M16	17	60	6

**PLATES CAN BE SUPPLIED
INDIVIDUALLY
OR
WELDED TO A BEARING**

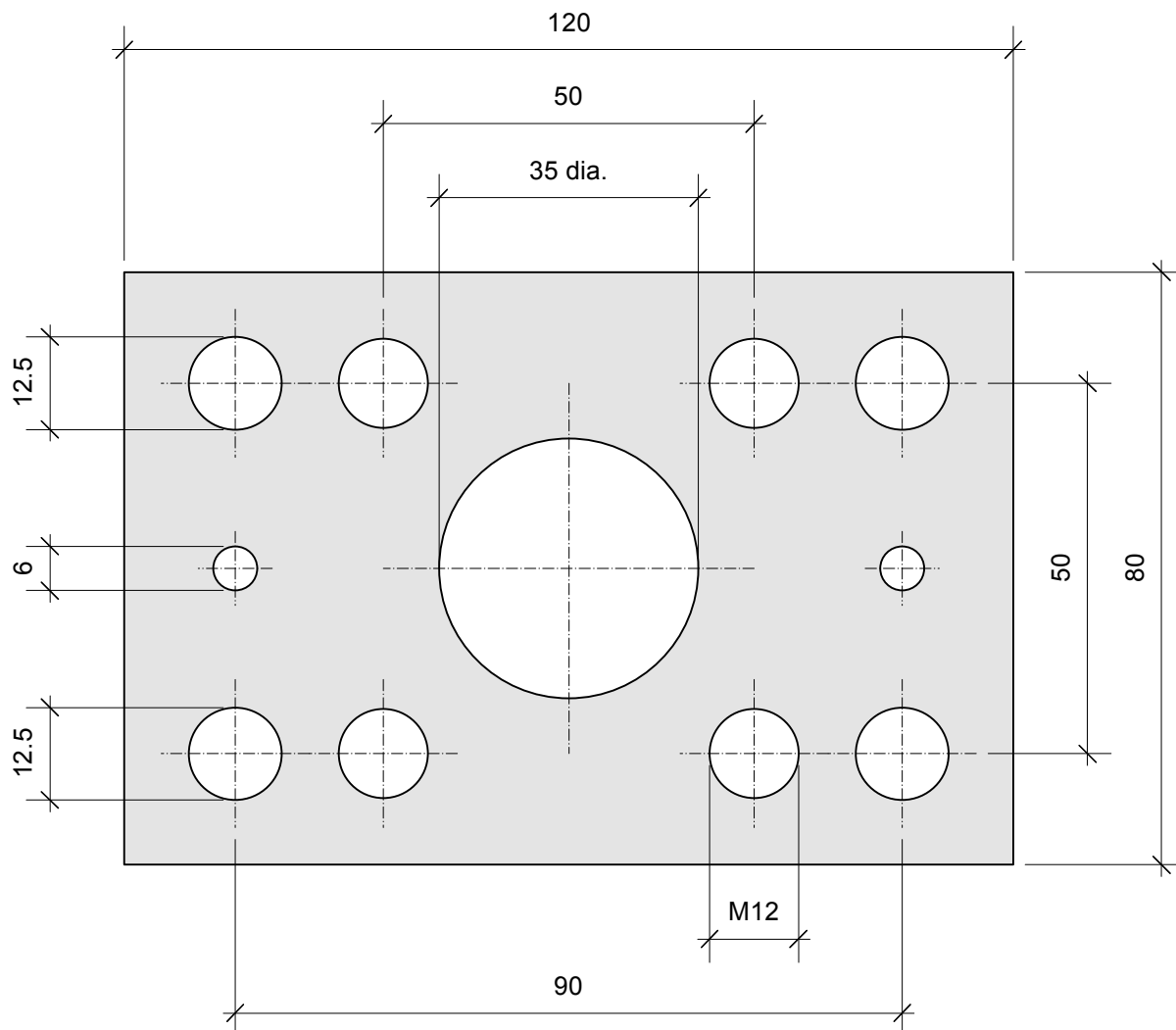
NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE**PL00****THICKNESS: 10mm****PLATE REFERENCE: PL00****WELD TO BEARING: 4.053****USE WITH****STEEL CHANNEL: EC053**

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE**PL0****THICKNESS: 10mm****PLATE REFERENCE: PL0****WELD TO BEARING: 4.054 or 4.454 or 4.072 or 2.2062****USE WITH****STEEL CHANNEL: 2890**

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE**PL1****THICKNESS: 15mm****PLATE REFERENCE: PL1****WELD TO BEARING: 4.055 or 4.455 or 4.073 or 2.2070****USE WITH****STEEL CHANNEL: 2867**

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE

PL2

THICKNESS: 15mm

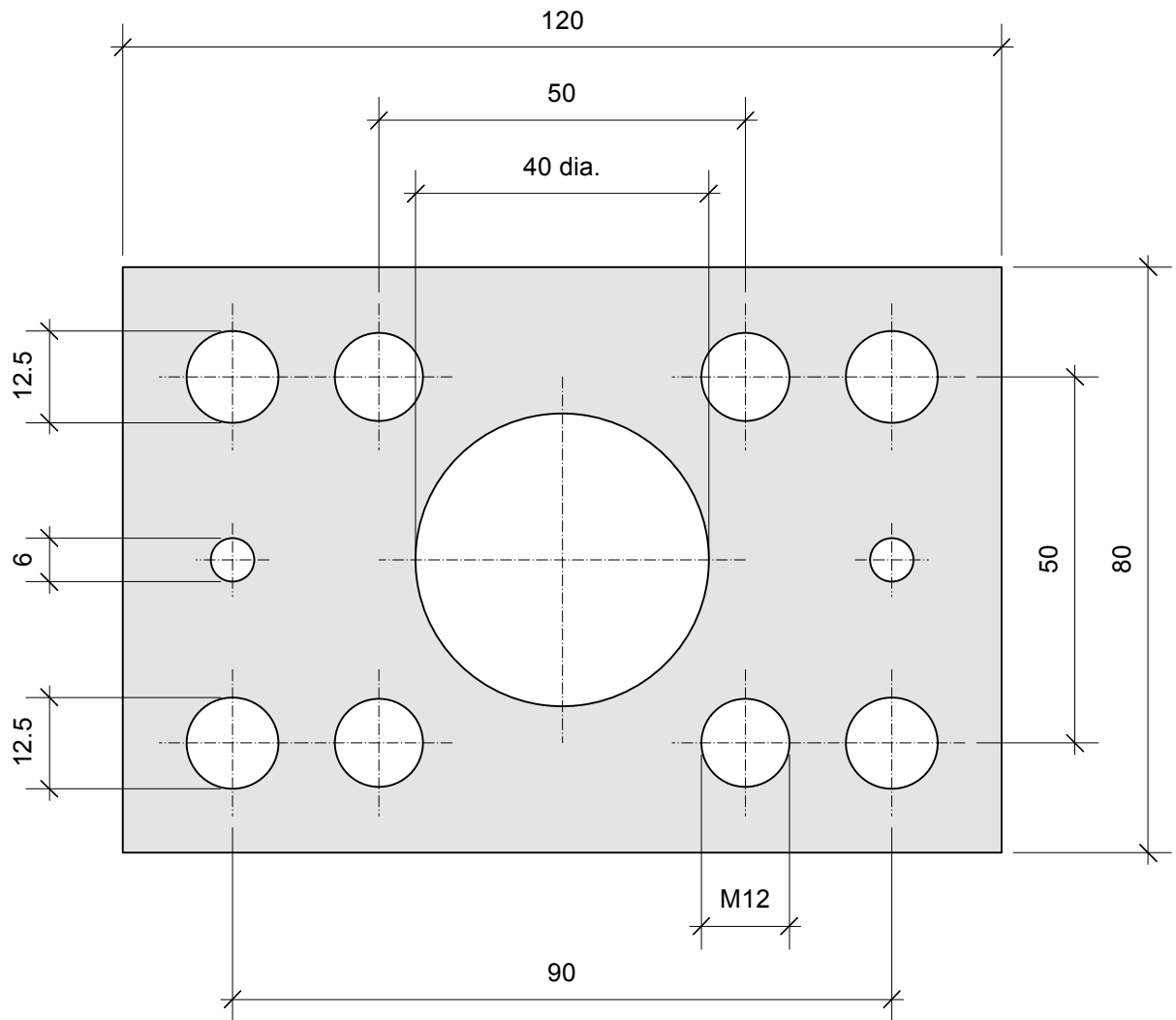


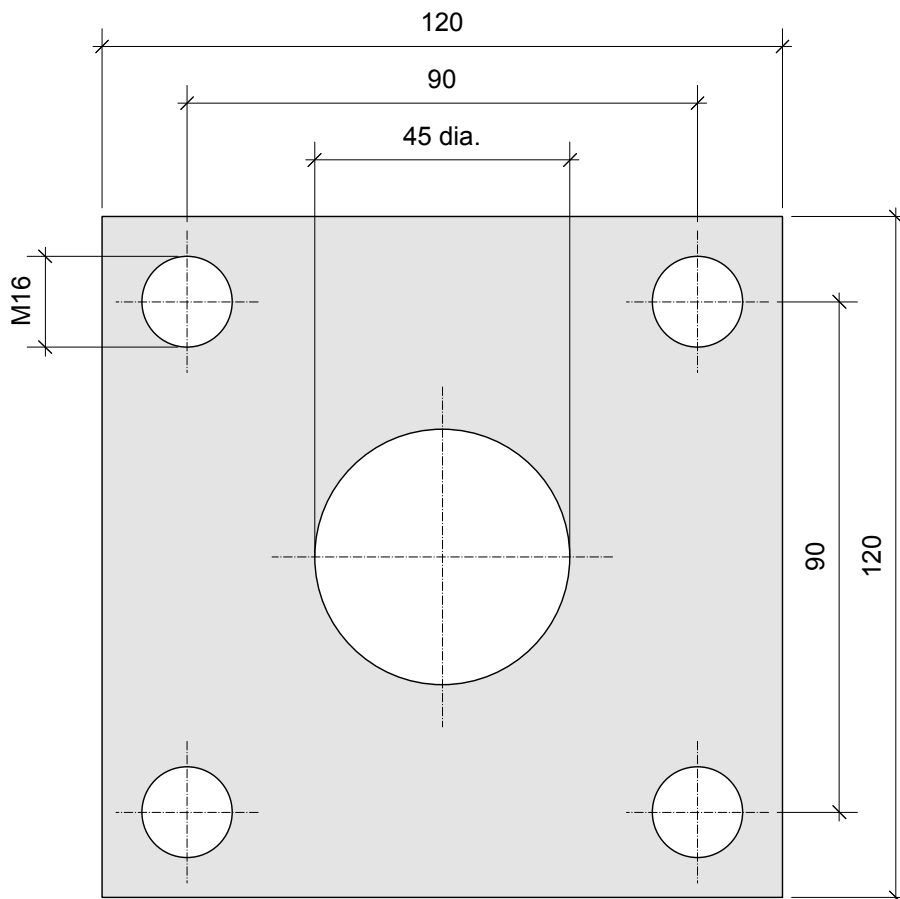
PLATE REFERENCE: **PL2**

WELD TO BEARING: 4.056 or 4.456 or 4.074 or 2.2077

USE WITH

STEEL CHANNEL: 2810

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE**PL3****THICKNESS: 20mm****PLATE REFERENCE: PL3****WELD TO BEARING: 4.058 or 4.458 or 4.076 or 2.2088****USE WITH****STEEL CHANNEL: 2811**

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE

PL4

THICKNESS: 20mm

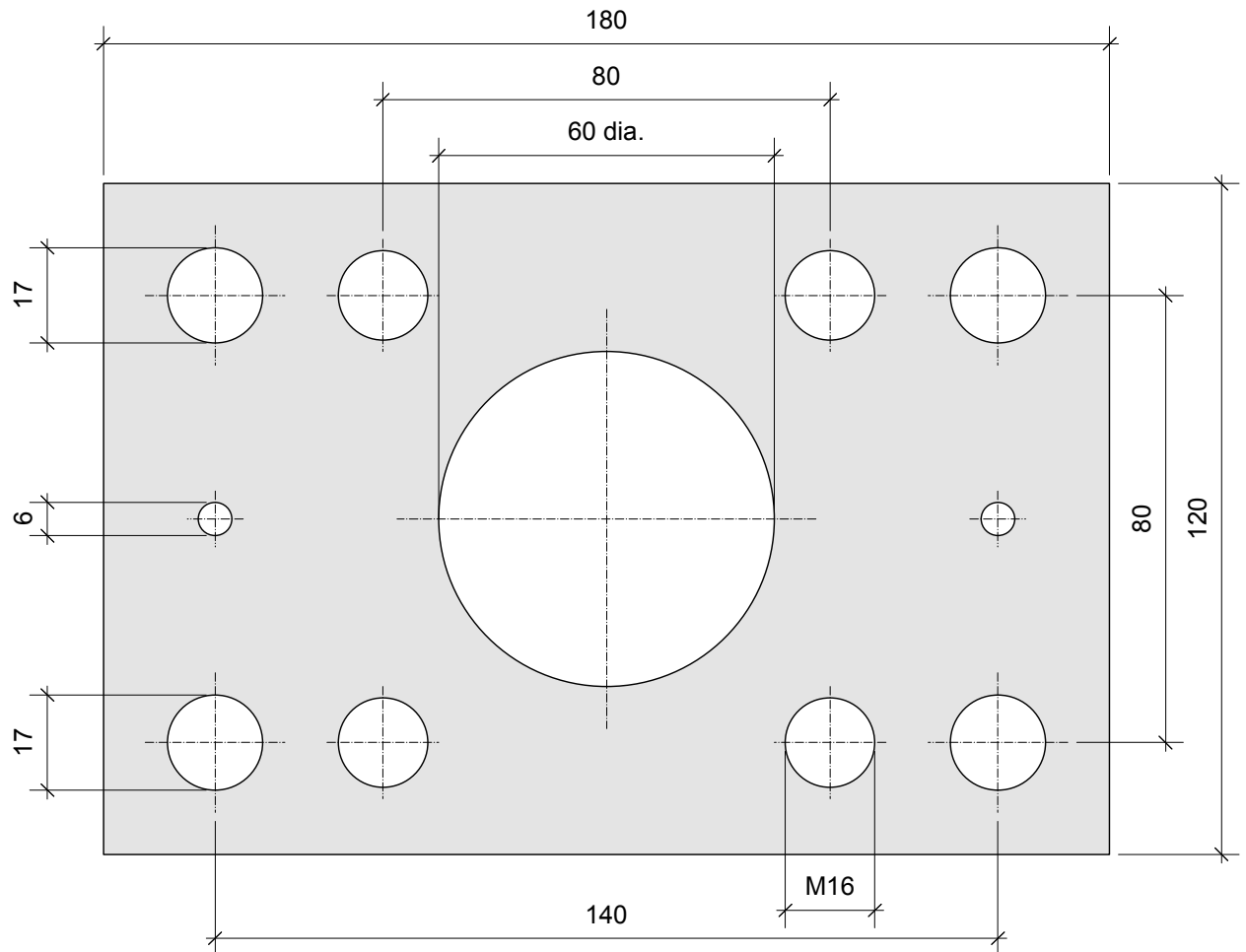


PLATE REFERENCE: **PL4**

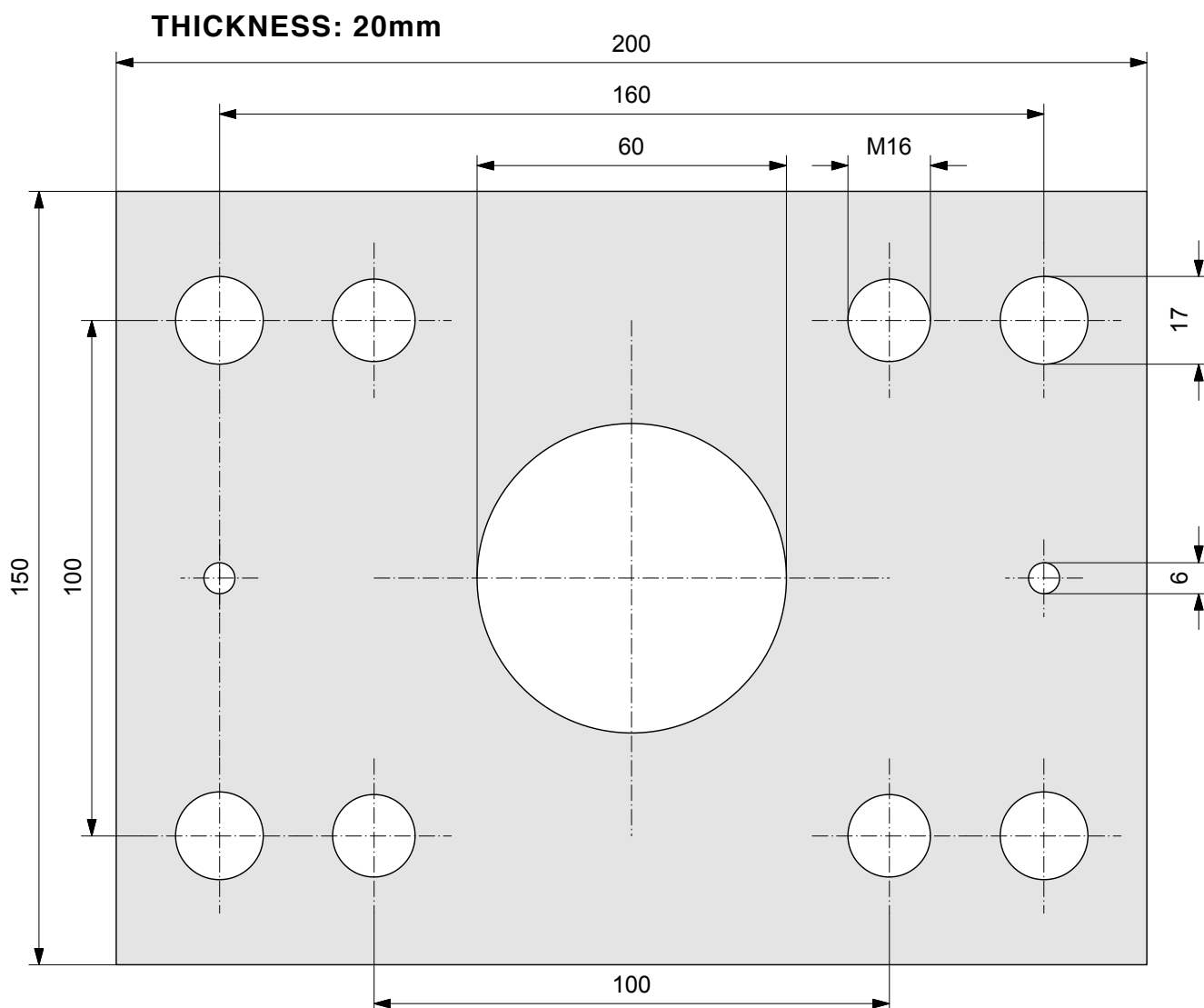
WELD TO BEARING:

4.061 or 4.461 or 2.2107
4.062 or 4.462 or 2.2123

USE WITH

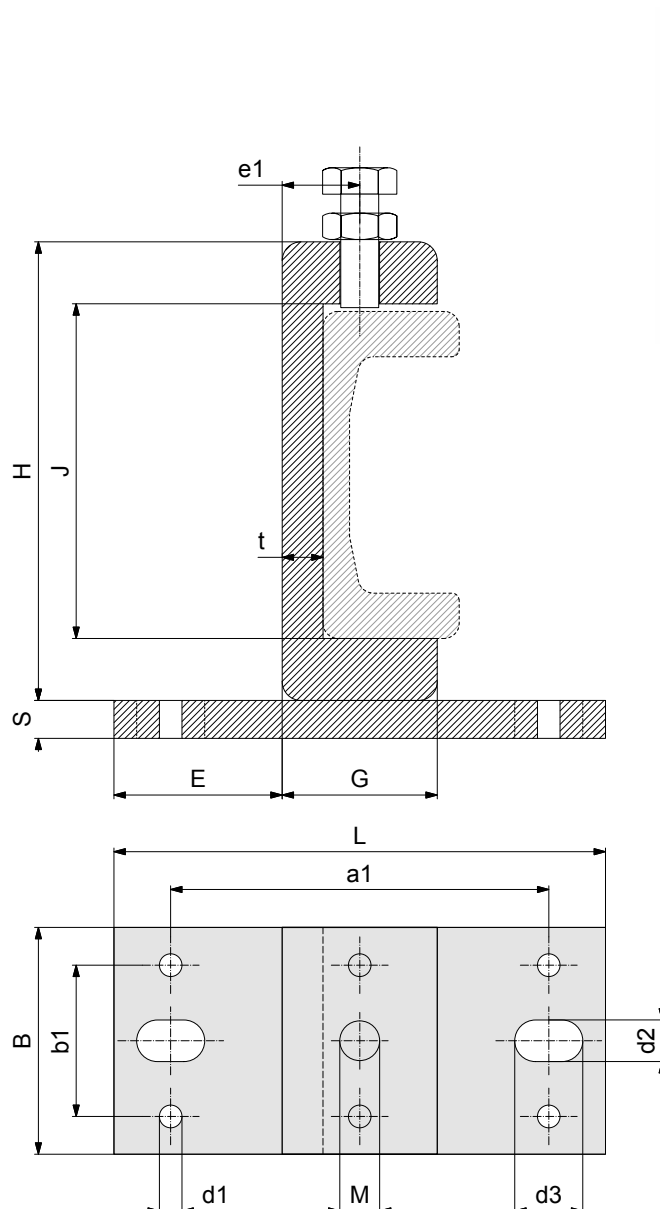
STEEL CHANNEL: **2862** or **2891**

NOTE: THIS DRAWING IS NOT TO SCALE

MOUNTING PLATE**PL6**PLATE REFERENCE: **PL6**WELD TO BEARING: **4.063** or **4.463** or **4.080** or **2.2149**

USE WITH

STEEL CHANNEL: **2757**

**FLANGED CLAMPS FOR
STANDARD CHANNEL**

CLAMP REFERENCE	FOR PROFILE REFERENCE	Dimensions (mm)														M	Weight (kg)
		H	B	L	S	J	E	G	t	a1	b1	d1	d2	d3	e1		
CF0	2890	121.3	60	130	10	88.5	44.5	41.0	10.8	100	40	6	11	18	20.5	M10x30	1.62
CF1	2867	135.4	60	130	10	105.0	38.5	53.0	12.7	100	40	6	11	18	26.5	M10x30	1.95
CF2	2810	157.2	80	160	15	123.0	49.5	61.2	14.0	130	60	6	13	18	30.6	M12x35	3.70
CF3	2811	175	80	160	15	137.5	46.9	66.2	16.2	130	60	6	13	18	33.1	M12x35	4.20
CF4	2862	201.5	80	160	15	159.0	44.4	71.2	19.4	130	60	6	13	18	35.6	M12x35	5.05

1. HOW DO WE MOUNT THE BEARINGS?

The stub axle of the bearing is made from C22E which is a weldable steel. The best method is to drill a hole to locate the stub diameter marked 'd' in the drawings and to then weld from behind. The 45° chamfer (weld gusset) allows the weld to be kept flat, in case you need to use that area for rolling another bearing over. You do NOT have to disassemble the bearing to weld it into position- just keep the torch or arc away from the hardened steel radial roller and axial roller.

2. HOW DO YOU LUBRICATE THE BEARING?

All but the smallest sizes (4.053 and 4.054) of our standard range of Combined Roller Bearings have a threaded lube hole and hex-headed plug to allow the insertion of a grease nipple. Remove the plug to allow for the insertion of the grease nipple. If the nipple cannot be left in place for operational reasons, re-insert the plug. Use a good quality bearing grease (EP3 Lithium grease). Nipples are not supplied but the holes are standard metric threads.

The standard bearings are pre-lubricated and can be run without any further lubrication.

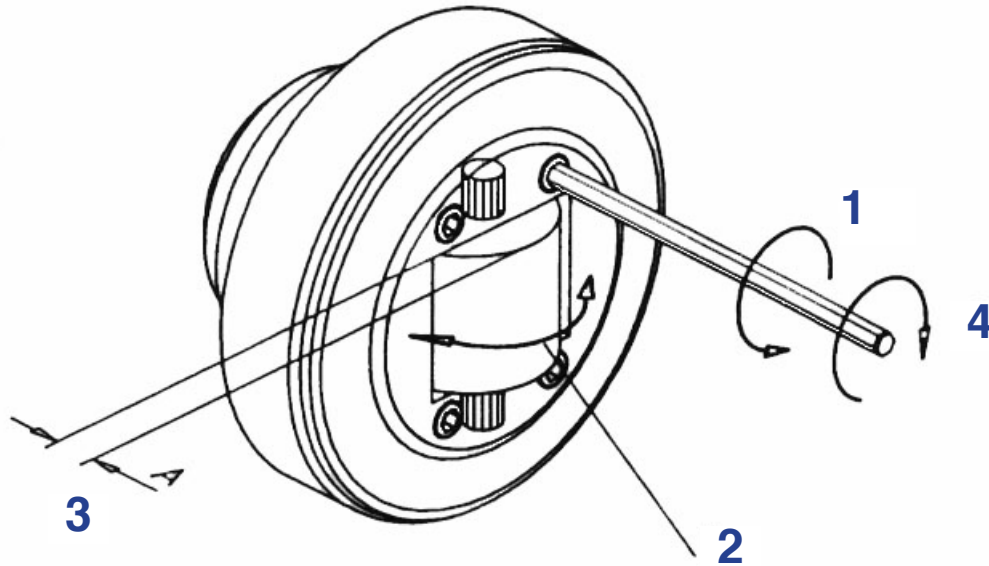
The adjustable types are also pre-lubricated but they are not re-lubricable.

3. ARE THE BEARINGS SEALED?

All ranges of the bearings are sealed with either metal or rubber shields. All our standard range of Combined Roller Bearings have composite rubber / metal shields. The adjustable (eccentric) types all have rubber seals. Both types of seals are very effective and these bearings are used in a variety of industrial environments.

***Further information can be found on our
website: www.euro-bearings.com***

HOW TO ADJUST AN ECCENTRIC CR BEARING



Adjusting the axial roller position:

STEP 1: Unscrew the four screws holding the front plate in position.

STEP 2: Rotate the axial bearing to the desired position.

STEP 3: Measure dimension 'A' (dimension 'A' on page 3)

STEP 4: Insert and tighten the four screws holding the front plate in position. Use a drop of adhesive (eg. Loctite threadlocker) on the screw thread to secure them permanently.

NB.

The series 4.454 through to 4.461 have splined eccentric shaft ends. 4.462 and 4.463 have hexagonal eccentric shaft ends. Both function in the same way.

SELECTING THE CORRECT SIZE OF BEARING & STEEL PROFILE

There are two important considerations when deciding which bearings to use:

a) Moments **AND** b) Hertzian Pressure

a) MOMENTS- the force on the bearing depends upon the distance between the load and the point of suspension and also the distance between the bearings and the point of suspension.

The location of the bearing with respect to the suspension point is critical in determining the force acting upon the bearing. The Hertzian static load capacity of the chosen bearing must not be exceeded and this therefore limits the maximum allowable load.

Using the moment-balance formula, the bearing distance can be calculated from:

$$I = (P \cdot L) / (2 \cdot C)$$

where:

P = Weight of the load being moved in Newtons (N)

L = Distance between the load and P, the suspension point (mm)

I = Distance of bearings from the suspension point (mm)

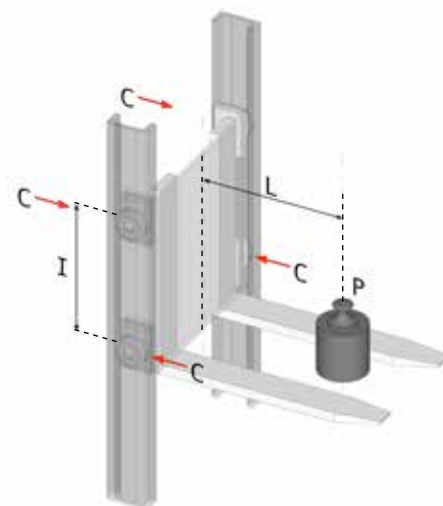
C = Maximum allowable static force per bearing, determined by Hertzian Pressure
(see page 38)

This formula can be rearranged to calculate the static force generated:

$$C = (P \cdot L) / (2 \cdot I)$$

And this value of **C** can then be compared with those given in the Hertzian Pressure data (provided by the table on page 38) to determine which bearing is best suited to the loading conditions. Please see the worked example on page 37.

This diagram shows the various dimensions required for calculating the moments and hertzian pressure.



b) HERTZIAN PRESSURE- the pressure on the profile should not exceed the tensile strength of the profile in order to prevent depressions in the steel channel. By ensuring that the maximum pressure is less than 750N/mm² (for S355 steel) and 900N/mm² (for S450J2 steel) such depressions should be prevented.

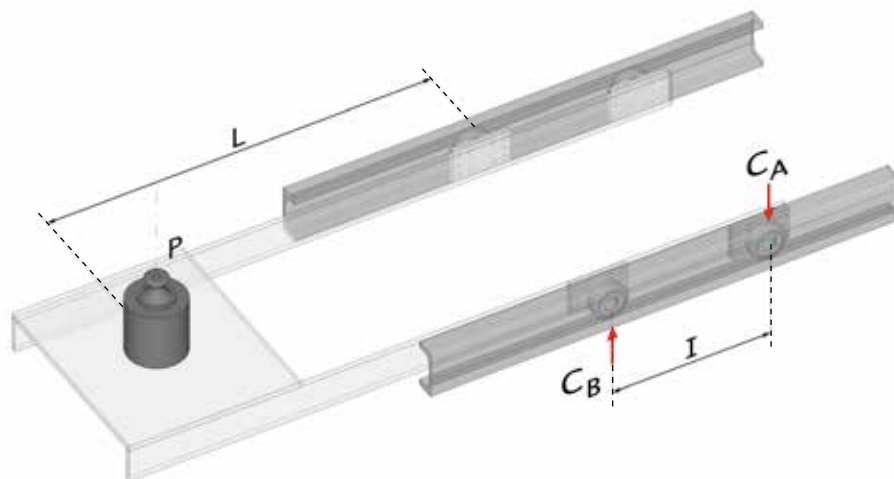
The table on the last page shows the approximate maximum static force on each bearing based on 0.31% of the bearing's surface area being in contact with the channel at any moment in time.

HORIZONTAL TELESCOPIC ARRANGEMENTS

If your application involves a horizontal telescopic slide then you will need to use the following equations:

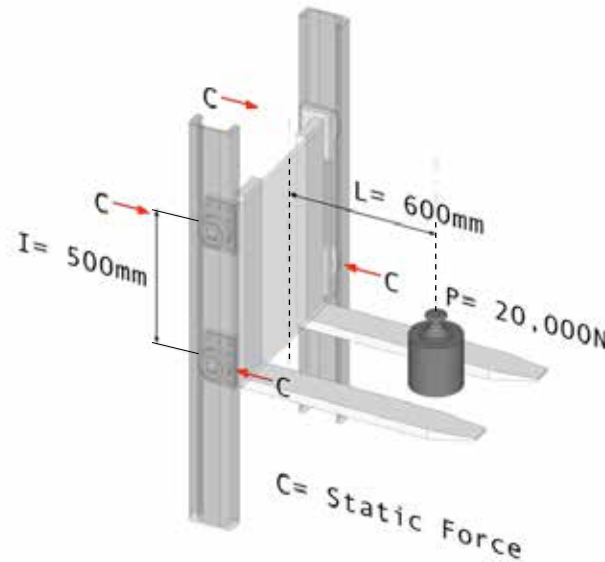
$$C_A = \frac{P \times L}{2 \times l} \qquad C_B = C_A + \frac{P}{2}$$

Usually C_B will be the largest force.



WORKED EXAMPLE

A 2 tonne load is placed 600mm from the point of suspension (dimension L). The bearings are spaced 500mm apart (dimension I). Which size of bearing should be used?



Using the Moment-Balance formula (from the previous page):

$$C = (P \cdot L) / (2 \cdot I)$$

Assuming the bottom pair of bearings are level with the point of suspension then the value $I = 500\text{mm}$. The load is cantilevered out at 600mm and hence this is the value of L . In this example $P = 20,000\text{N}$ (the 2 tonne load on the forks).

Substituting these values into the equation gives $C = 12,000\text{N}$

Looking up this value of **C** (for the Radial Roller) on the Hertzian Pressure table (see page 38) shows that **4.058** is the required bearing size.

Please call if you need help with any of these calculations.

Telephone: 01908 511733

or email:

sales@euro-bearings.com

Hertzian Pressure Table

Bearing Reference	Diameter (mm)	Circumference (mm)	Contact Width (mm)	Approx. Contact Area (mm ²)	Steel Grade	Maximum Static Force / Hertzian Pressure C For Radial Roller (Newtons)	Maximum Static Force / Hertzian Pressure Ca For Axial Roller (Newtons)
4.053	52.5	164.96	14	7.33	S355J0	5,500	1,680
4.054	62.5	196.38	15	9.35	S450J2	8,200	3,100
4.055	70.1	220.25	16	11.19	S450J2	9,800	3,730
4.056	77.7	244.13	16	12.40	S450J2	10,900	3,870
4.057	77.7	244.13	16	12.40	S450J2	10,900	2,970
4.058	88.4	277.75	21	18.52	S450J2	16,300	6,760
4.059	101.2	317.97	18	18.17	S450J2	16,000	5,150
4.060	107.7	338.39	21	22.56	S450J2	19,800	5,490
4.061	107.7	338.39	21	22.56	S450J2	19,800	7,160
4.062	123	386.47	26	31.90	S450J2	28,000	10,200
4.063	149	468.16	36	53.51	S450J2	47,000	17,800
4.089	165	518.36	35	56.24	S355	42,180	13,910
4.090	190	596.90	43	79.57	S355	59,677	19,400
4.091	220	691.15	53	113.56	S355	85,170	28,000
4.092	250	785.40	55	133.91	S355	100,432	33,900
4.093	280	879.65	67	182.70	S355	137,027	46,500
4.094	320	1005.00	77	239.97	S355	179,975	
4.095	340	1068.00	81	268.21	S355	201,150	
4.096	390	1125.00	111.5	423.50	S355	317,600	