Production & warehouse facilities

Iruna USA Inc.
Warehouse facilities
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Stevens Point 54481
Wisconsin, USA

Frenos Iruña S.A.L.
Production
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31191 Barbatain,
Navarra, Spain

Iruna Indian Brakes
Production
Plot nº10 Segundram Ind. Est.
Melrosapuram SP Koil
(Chengalpattu) Taluk
Kanchipuram Dist.
Chennai – Tamil Nadu 603 204
India

ISO/TS 16949
BUREAU VERITAS
Certification

ISO 9001
BUREAU VERITAS
Certification

Product Technical Catalogue

frenos iruña brakes

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PROVIDING
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SINCE 1958

frenos iruña brakes

Our company

Frenos Iruña is a modern, innovative and efficient company that designs, develops, manufactures and validates high performance brake systems.

Specializing in small and medium batch sizes, our main markets are: **Off-Highway, Automotive and Wind Power.**

With more than the 15% of our staff dedicated to R+D, we design & develop all our products from initial concept, through product approval and finally to serial production. Our multi-task teams control all of the processes involved, looking for new solutions as needed to meet the customer specifications.

Founded in 1958 in Pamplona, in the north of Spain, the Frenos Iruña headquarters covers 8,000 m2 with a total land area of 22,000 m2 available. It is a modern facility within which we carry out prototyping, machining, stamping, welding and assembly. The company also has a manufacturing plant in Chennai, India, which allows Frenos Iruña to be an international supplier.

Being ISO TS 16949 and ISO 9001 certified, the quality policy is well understood, being implemented and supported during the day to day running of the organization.

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In-house design

Our customers find in Frenos Iruña a multi-disciplined team of brake specialists who design a full range of brake components to meet the customers specifications.

We are able to work through the complete project process, from the initial system concept to final production. (APQP)

Identifying & resolving design problems as early on in the design cycle as possible is the key to keeping our projects on time and within budget.

Validation capacity

Focused on excellence and quality, our complete range of test facilities help us to achieve the validation requirements of our OEM customers, verifying all product specifications.

Within Frenos Iruña there are several areas of testing with which we can carry out performance, climatic, static and dynamic, burst pressure, endurance tests etc.

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Master Cylinders

Frenos Iruña has been successfully producing hydraulic master cylinders to actuate off-highway machinery and vehicle braking circuits. The brake master cylinders are available in different versions: single, tandem, compensated and step bore.

The listed products are part of our standard range. We are always prepared to consider special customer request, being able to adapt production to low volumes if necessary.

Single Master Cylinders

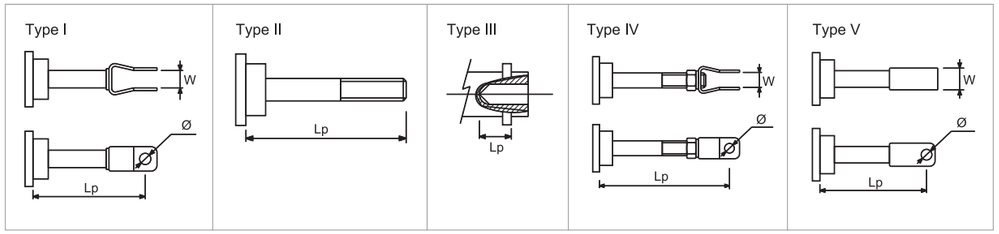
Compensated Master Cylinders

Tandem Master Cylinders

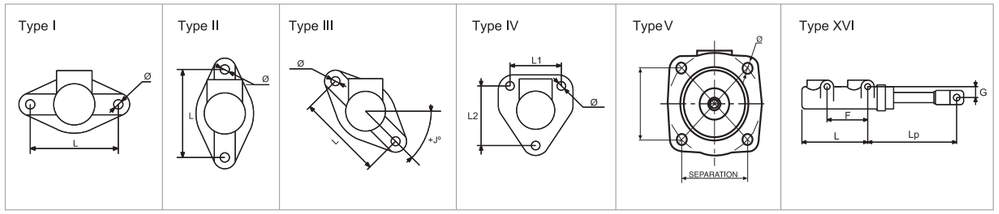
Step - Bore Master Cylinders

External dimensions & Intsllation detail

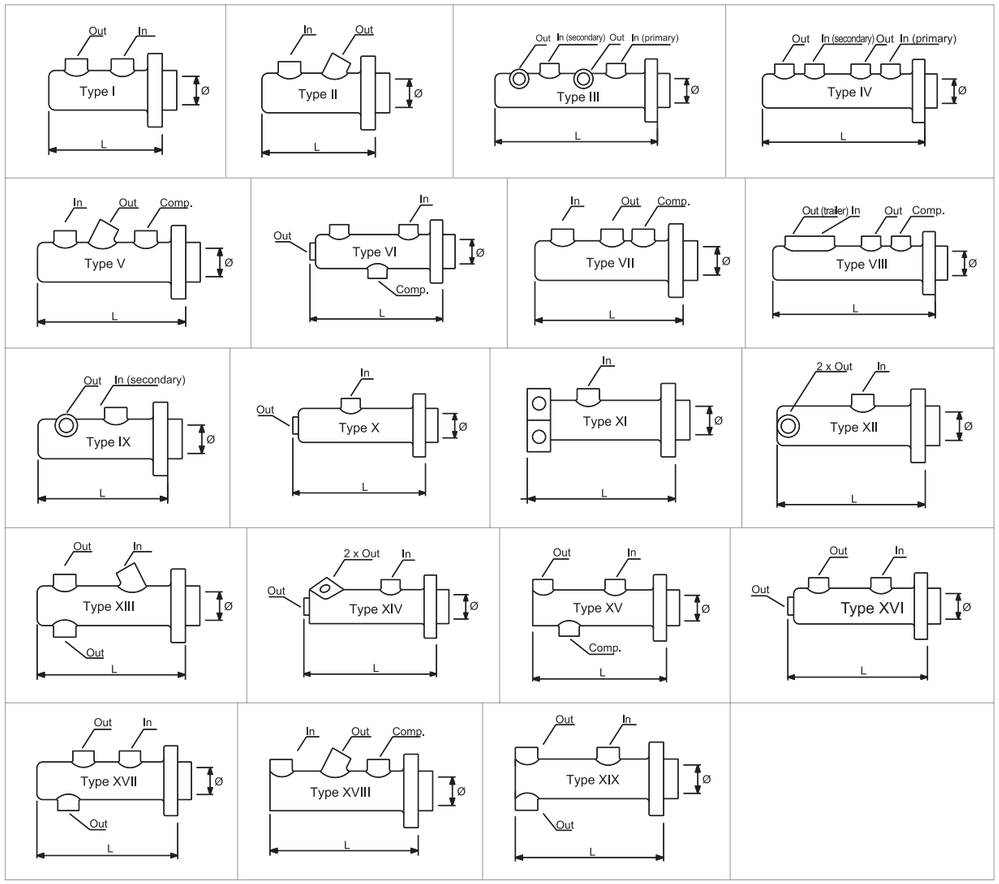
PUSH ROD TYPE



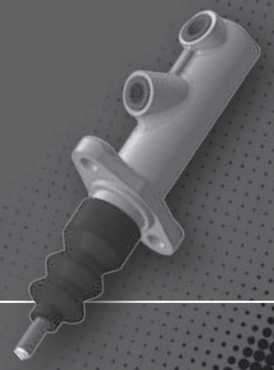
INSTALLATION TYPE



MASTER CYLINDER (BODY) TYPE

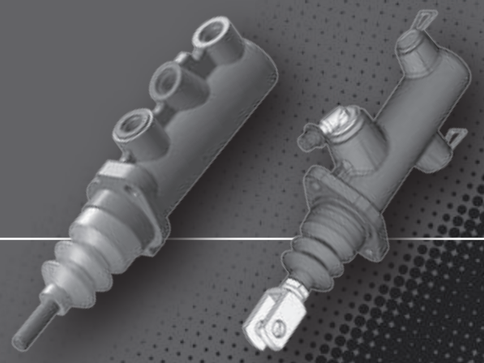


Single Master Cylinders



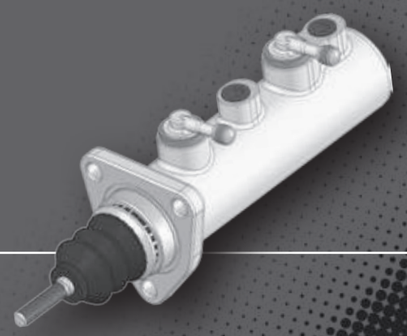
Functional data				External dimensions		Installation			Body Fluid Inlet		Compensation	Push Rod			Fluid type	Part Number
Bore Ø		Stroke		L	D	Type	HoleØ, x separation		Type	Type/size	Type/size	Type	Size	LP	Note	
mm	inches	mm	cc	mm	mm		Ømm	mm						mm		
15,87	5/8"	36	7,1	107	35	II	Ø9	77,8	II	M12X1	M12X1	II	M8X1,25	100,8	M	6300072
15,87	5/8"	36	7,1	107	35	II	Ø9	77,8	II	M12X1	M12X1	II	M8X1,25	100,8	M	6300121
15,87	5/8"	36	7,1	107	35	II	Ø9	77,8	II	M12X1	M12X1	II	M8X1,25	100,8	M	6300132
15,87	5/8"	36	7,1	107	35	II	Ø9	57	II	M12X1	M12X1	II	5/16 UNF	97	M	6300124
15,87	5/8"	36	7,1	107	35	II	Ø6,5	50	II	RESERVOIR	M12X1	II	M8X1,25	95	M	6300158
15,87	5/8"	30,4	5,7	112,5	35	V	Ø10,5	F=50-G=20	XIX	PIPE Ø9,2	M12X100	IV	Ø10,1-W=10	129	V	6300215
17,75	11/16"	33	7,69	130	38	I	Ø8,5	80	I	PIPE Ø7,37	M10X1	IV	Ø8-W=8,8	194	V	6300163
17,75	11/16"	37,5	9,1	119	41,8	I	Ø9	81,4	X	M22X1,5	M10X1	III		14,6	V	6300181
17,75	11/16"	34	7,9	112,5	35	V	Ø10,5	F=50-G=20	XIX	PIPE Ø9,2	M10X100	IV	Ø10,1-W=10	129	V	6300212
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	7/16 20UNF	3/8 24UNF	II	5/16 24UNF	101	V	6300068
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	7/16 20UNF	3/8 24UNF	II	5/16 24UNF	129	V	6300069
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	7/16 20UNF	3/8 24UNF	II	5/16 24UNF	101,5	V	6300128
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	7/16 20UNF	3/8 24UNF	II	5/16 24UNF	129	V	6300129
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	M12X1	M12X1	II	M8X1,25	101,5	M	6300071
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	M12X1	M12X1	II	M8X1,25	101,5	M	6300131
17,78	7/10"	36	8,9	107	37,5	II	Ø9	57	II	M12X1	M12X1	II	M8X1,25	101,5	M	6300120
17,78	7/10"	30	7,4	130	33	II	Ø9	57	X	PIPE Ø16	3/8 UNF	II	5/16 UNF	128	V	6300075
17,78	7/10"	30	7,4	130	33	II	Ø9	57	X	PIPE Ø16	3/8 UNF	II	5/16 UNF	128	V	6300074
19,05	3/4"	30	7,7	117,5	37,5	I	Ø9	60	X	PIPE Ø7,37	M10X1I	I	Ø10-W=11	85	V	6300040
19,05	3/4"	36	10,2	130	36	II	Ø9	57	II	RESERVOIR	M10X1	II	3/8 UNF	110	V	6300037
19,05	3/4"	36	10,2	107	35	II	Ø9	57	II	M12/100	M12/100	II	5/16 UNF	70	M	6300000
19,05	3/4"	35	10	117	39	I	Ø9	60	X	M16X1,5	M10X1	III		28	V	6300112
19,05	3/4"	30	7,7	126,5	31,5	II	Ø9	79	X	PIPE Ø7,37	3/8 UNF	I	Ø8-W=11	74	M	6300053
19,05	3/4"	36	10,2	107	35	II	Ø9	57	II	M12/100	M12/100	II	5/16 UNF	96	M	6300106
19,05	3/4"	36	10,2	107	35	II	Ø9	57	X	M12/100	M12/100	II	5/16 UNF	96	M	6300136
19,05	3/4"	36	10,2	107	35	II	Ø9	57	X	M12/100	M12/100	II	5/16 UNF	96	M	6300183
19,05	3/4"	33	8,83	130	38	I	Ø8,5	80	I	PIPE Ø7,37	M10X1	IV	Ø8-W=8,8	194	V	6300162
19,05	3/4"	30	7,7	141	37,5	I	Ø9	60	X	PIPE Ø7,37	M10X1	IV	Ø10-W=11	85	V	6300169
19,05	3/4"	30	7,7	128	42	III	Ø9	60-45°	XII	PIPE Ø7,37	M10X1/M8X1,25	II	M10X1,5	115,2	V	6300195
19,05	3/4"	30	7,7	128	42	III	y	60-45°	XII	PIPE Ø7,37	M10X1/M8X1,25	II	M10X1,5	115,2	M	6300218
19,05	3/4"	33	8,83	137	38	I	Ø8,5	60	XII	PIPE Ø7,37	M10X1	IV	Ø8-W=8,8	114	M	6300222
19,05	3/4"	25	6,56	131	30	V	Ø8	F=90 - G=20-22	XII	PIPE Ø7,37	M10X1	IV	Ø8-W=8,8	106	V	6300145
19,05	3/4"	33	8,83	137	38	I	Ø8,5	60	XII	PIPE Ø11	M10X1	IV	Ø8-W=8,8	114	V	6300177
19,05	3/4"	30	7,7	118	38	I	Ø9	60	X	PIPE Ø7,37	M10X1	II	M8X1,25	70,5	V	6300161
22,22	7/8"	36	13,2	107	35	II	Ø9	57	I	M12/100	M12/100	II	5/16" UNF	mm	M	6300180
22,22	7/8"	36	13,9	126,5	36	II	Ø9	57	X	RESERVOIR	M12X1	II	5/16 UNF	96	M	6300077
22,22	7/8"	16	5,5	91	39,8	V	Ø8,5	F=76,5-G=22	X	PIPE Ø7	M12X1,5	IV	Ø8-W=9		V	6300166
22,22	7/8"	36	13,9	126,5	36	II	Ø9	57	X	RESERVOIR	M12X1	II	5/16 UNF	96	V	6300119
22,22	7/8"	36	13,9	107	35	II	Ø9	57	II	M14X1,5	M14X1,5	II	M10X1,5	85	M	6300070
22,22	7/8"	36	13,9	126,5	36	II	Ø9	57	X	RESERVOIR	M12X1	II	3/8 UNF	110	M	6300116
22,22	7/8"	36	13,9	126,5	36	II	Ø9	57	X	RESERVOIR	M12X1	II	3/8 UNF	110	M	6300117
22,22	7/8"	36	13,9	107	35	II	Ø9	57	II	M14X1,5	M14X1,5	II	M10X1,5	85	M	6300130
22,22	7/8"	46	5,5	123,5	41,6	II	Ø9	60	XIX	PIPE Ø7,37	M12X1	II	M8X1,25	85	M	6300198
22,22	7/8"	16	5,5	123,5	41,6	II	Ø8,8	60	XIII	M22X1,5	M12X1	II	M8X1,25	70,8	V	6300182
22,22	7/8"	36	13,2	134	30	II	Ø9	57	II	RESERVOIR	M12/100	II	M10X150	87	M	6300013
22,22	7/8"	27,3	10,5	128		II	Ø8,75	60	X	PIPE Ø7,37	M10X1	III		17	M	6300186
22,22	7/8"	27,3	10,5	128		II	Ø8,75	60	X	PIPE Ø7,37	M10X1	III		17	V	6300187
25,4	1"	36	16,5	115	39,6	II	Ø10,5	63,5	II	M14/150	M14/150	II	M10X1,5	95	M	6300022
25,4	1"	35	16,5	126	42,25	I	Ø11	82	I	PIPE Ø7,37	M12X1	II	M10X150	95	M	6300050
25,4	1"	30	15,2	126,5	41	II	Ø9	79	X	PIPE Ø7,37	3/8UNF	I	Ø8-W=11	84	M	6300054
25,4	1"	36	16,5	104	39,8	V	Ø8,5	F=76,5 - G=22	X	PIPE Ø9	M12X1,5	IV	Ø8-W=9	135	M	6300057
25,4	1"	36	16,5	126	42,3	I	Ø11	82	I	PIPE Ø7,37	7/16 20UNF	IV	Ø10-W=8,8	III	M	6300178
25,4	1"	35	16,5	126	42,25	I	Ø11	82	X	PIPE Ø7,37	M12X1	II	M10X1,5	109	M	6300193
25,4	1"	22	11,1	135	42	I	Ø9	82	XII	PIPE Ø7,37	M10X1	II	M10X1,5	115,2	M	6300227
25,4	1"	39	18,7	126	42,5	I	Ø11,1	82	XIII	PIPE Ø7,37	7/16 20UNF-M12X1,5	IV	Ø10-W=8,8	110	M	6300214
25,4	1"	35	16,5	126	42,25	I	Ø11	82	X	RESERVOIR	M12X1	II	M10X1,5	109	M	6300204
25,4	1"	36	16,5	104	39,8	V	Ø8,5	F=76,5-G=22	X	RESERVOIR	M12X1,5	IV	Ø8-W=9	135	M	6300058
25,4	1"	30	15,2	126	41	I	Ø8,75	63,5	I	M20X1,5	1/4 GAS	III		23,7	M	6300148
28,57	1 1/8"	35	21,5	126	42,5	I	Ø11	82	I	PIPE Ø7,37	M12/100	II	M10/150	95	M	6300113
28,57	1 1/8"	36	21,5	104		V	Ø8,5	F=76,5-G=22	X	PIPE Ø7,37	M12X1,5-7/16 20UNF	IV	Ø8-W=9,1	135,5	M	6300210
28,57	1 1/8"	36	21,5	104		V	Ø8,5	F=76,5-G=22	X	PIPE Ø7,37	M12X1,5	IV	Ø8-W=9,1	135,5	M	6300209
28,57	1 1/8"	36	21,5	104	39,8	V	Ø8,5	F=76,5-G=22	X	RESERVOIR	M12X1,5	IV	Ø8-W=9	135,5	M	6300059
28,57	1 1/8"	35	21,5	126	42,5	I	Ø11	82	I	PIPE Ø7,37	M12X100	II	M10X150	120	M	6300010
28,57	1 1/8"	35	21,5	126	42,5	I	Ø11	82	X	PIPE Ø7,37	M12/100	II	M10/150	108	M	6300157
31,75	1 1/4"	39	30,8	126	42,5	I	Ø11	82	I	PIPE Ø7,37	M12/100	III		30,1	M	6300005
31,75	1 1/4"	38,5	30,8	126	42,5	I	Ø11	82	I	PIPE Ø7,37	M12/100	II	M10/150	84	M	6300015
31,75	1 1/4"	35	27,7	126	42,5	I	Ø11	82	X	PIPE Ø7,37	M12/100	II	M10/150	84	M	6300107
31,75	1 1/4"	25	19,8	97	50	IV	Ø11	Ø86	XIX	PIPE Ø7,37	M12/150-7/16 20UNF	III		15,1	M	6300174
31,75	1 1/4"	39	28,5	124	42,4	I	Ø11	73	I	PIPE Ø7,37	M12X1,5-7/16 20UNF	II	M10X1,5	95	M	6300217
31,75	1 1/4"	35	27,7	126	42,5	I	Ø11	82	I	RESERVOIR	M12/100	II	M10X150	108	M	6300123
31,75	1 1/4"	40	32,3	135	50,5	II	Ø9	72	X	3/4 UNF	1/2 UNF	III		36,5	M	6300073
38,1	1 1/2"	25	28,5	97	50	IV	Ø11	Ø86	XIX	PIPE Ø7,37	M12X1,5-7/16 20UNF	III	Ø15	15,1	M	6300175
38,1	1 1/2"	46	52,4	166	52	IV	Ø10,25	50,8-39	XVI	3/4" UNF	1/2" UNF	III	29		M	6300048
38,1	1 1/2"	25	28,5	110	53,5	IV	Ø11	62/60	I	PIPE Ø7,37	9/16X18UNF	II	M10X150	80	M	6300118
38,1	1 1/2"	35	39,5	140	54	IV	Ø11	Ø86	I	PIPE Ø7,37	9/16X18UNF	II	M10X150	96	M	6300200
38,1	1 1/2"	25	28,5	85	52	V	Ø11	F=70-G=20	I	PIPE Ø7	M10X1	II	M10X1,5	125	M	6300168
41,27	1 5/8"	35	42,81	140	55	IV	Ø11	Ø86	I	PIPE Ø7,37	9/16 18UNF	II	M10X1,5	106	M	6300134
41,27	1 5/8"	35	42,81	140	55	IV	Ø11	Ø86	I	PIPE Ø7,37	9/16 18UNF	II	M10X1,5	123	M	6300144
41,27	2 5/8"	25	33,5	114	75	III	Ø9	90-45°	XVII	PIPE Ø7,37	M12X1,5-7/16 20UNF	III		2,8	M	6300194

Compensated Master Cylinders



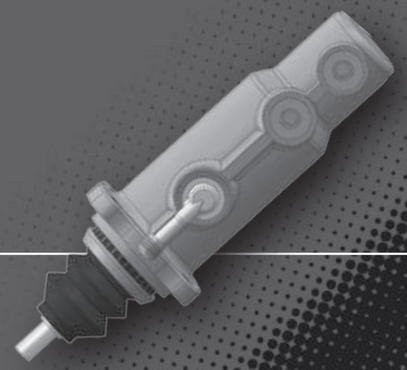
Functional data					External Dimensions		Installation			Body	Fluid Inlet	Fluid Outlet	Compen-sation	Push Rod			Fluid Type	Part Number
Bore Ø		Stroke	Compen-sation	Vol. Min	L	D	Type	Hole Ø, X separation		Type	Type/size	Type/size	Type/size	Type	Size	Lp	Note 2	
mm	inches	mm	%	cc	mm	mm		Ø mm	mm							mm		
15,75	7/10"	33		8,8	130	32	I	Ø8,5	80	IX	M10/100	M10/100	M10/100	IV	Ø8 W=9	194	V	6300163
15,87	5/8"	36	55	6	125	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M8x125	101,5	M	6300155
19,05	3/4"	36	45	9,5	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	5/16"UNF	96	M	6300016
19,05	3/4"	36	45	9,5	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	201	M	6300049
19,05	3/4"	36	45	9,5	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	96	M	6300066
19,05	3/4"	36	45	9,8	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	201	M	6300149
19,05	3/4"	36	45	9	126,5		III	Ø9	57	XVIII	M12/100	M12/100	M10/100	II	M10x150	201	M	6300159
19,05	3/4"	33		8,8	130	32	I	Ø8,5	80	IX	M10/100	M10/100	M10/100	IV	Ø8 W=9	79	V	6300162
19,05	3/4"	35	45	9	127		III	Ø8,6	57	V	M12/100	M10/100	M10/100	II		99,4	V	6300221
22,22	7/8"	36	25	13	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	201	M	6300028
22,22	7/8"	36	45	13	126,5	35	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	201	M	6300147
22,22	7/8"	36	45	13	126,5	30	III	Ø9	57	V	M12/100	M12/100	M10/100	III			M	6300160
22,22	7/8"	16		5,5	110	36	V	Ø8,5	"F:76,5 G/M 22/28"	X	M12/150	M12/150	M12/150	IV	Ø8 W=9	79	V	6300166
22,22	7/8"	36	45	13	126,5	33	III	Ø9	57	V	M12/100	M12/100	M10/100	II	M10x150	116	M	6300167
22,22	7/8"	36	45	13	126,5	33	III	Ø9	60	V	M12/100	M12/100	M10/100	III			M	6300170
22,22	7/8"	36	45	13	125	33	III	Ø9	57	XVIII	M12/100	M12/100	M12/100	II	M10x150	201	M	6300196
22,22	7/8"	36	45	13	126,5		III	Ø9	60	V	M12/100	M12/100	M10/100	III			M	6300202
22,22	7/8"	36	45	13	126,5	30	III	Ø9	60	V	M12/100	M12/100	M10/100	III			M	6300213
22,22	7/8"	35	45	9	127		III	Ø8,6	57	V	M12/100	M10/100	M10/100	II		101,6	V	6300220
25,4	1"	36	25		123		I	Ø9	60	V	M14/150	M14/150	M10/100	II	M10x150	86,5	M	6300089
25,4	1"	36	100	18	97	30	I	Ø8,5	60	VI	Pipe Ø7,37	7/16 SME	M10/100	II	M10x150	150	M	6300151
25,4	1"	30	100	13,5	131	36	III	Ø8	60	XV	M12/125	M12/125	M12/125	IV	Ø8 W=9	91	M	6300188
25,4	1"	30		13,5	131	41,9	III	M8x125	60	XV	Pipe Ø9,2	M12/125	M12/125	IV	Ø10 W=12	91	V	6300219
38,1	1 1/2"	26		25	130,5	75	III	Ø9	90	VII	M14/150	M14/150	M10/100	III			M	6300207
38,1	1 1/2"	35		25 / 3	156	75	III	Ø9	90	VIII	M14/150	M14/150	M10/100	III			M	6300208
38,1	1 1/2"	36	100	25	130,5	48	III	Ø9	90	VII	M14/150	M14/150	M10/100	III	M10x150		M	6300153(1)
38,1	1 1/2"	39	100	25 / 3	156	48	III	Ø9	90	VIII	M12/100	M12/100	M10/100	III	M10x150		M	6300154(2)

Tandem Master Cylinders

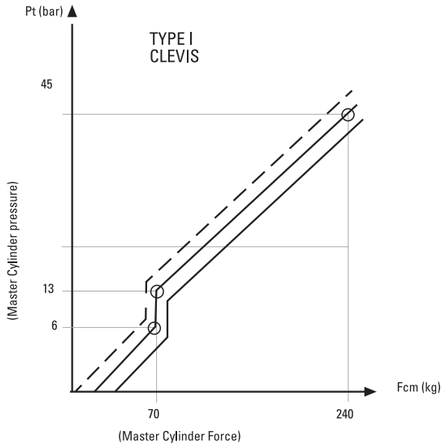


Functional data				External dimensions		Installation			Body Fluid Inlet		Fluid Outlet	Push Rod			Fluid type	Part Number
Bore Ø		Stroke		L	D	Type	HoleØ, x separation		Type	Type/size	Type/size	Type	Size	LP	Note	
mm	inches	mm	cc	mm	mm		Ømm	mm						mm		
20,64	13/16"	24,5	7,9	216		XVI	Ø10,5	100	IV	PIPE Ø9,2	M10/100	II	M10/100	104	M	6301070
25,4	1"	35	9,5+7,2	186	42,5	I	M8/125	61	III	GROMMET	M10/100	III			V	6301051
25,4	1"	35	8,4+8,4	191	41	I	Ø9	63,5	III	M20/150	1/4" BSP	I	Ø9 W=10	48,3	M	6301063
25,4	1"	35	6+9,6	190	39,6	I	Ø11,5	82	III		M12/100	III			M	6301067
25,4	1"	35	8,4+8,4	186	42,5	I	Ø9	82	III	RESERVOIR	M12/100	II	M10/150	108	M	6303015
25,4	1"	35	8,4+8,4	186	42,5	I	Ø9	60	III	RESERVOIR	M12/100	II	M10/150	108	M	6303017
25,4	1"	35	8,4+8,4	186	37	I	Ø9	57	III	RESERVOIR	M12/100	II	M10/150	98	M	6303020
25,4	1"	36	5,8+10,2	135	35,5	I	Ø9	82	XX	RESERVOIR	M10/100	III			V	6303024
28,58	1 1/8"	35	9,5+11,6	186	42,5	I	Ø11	82	III	PIPE Ø7	M12/100	III			M	6301004
28,58	1 1/8"	35	10,06+10,6	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	3/8"UNF	102	V	6303008
28,58	1 1/8"	35	10,06+10,6	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	3/8"UNF	102	M	6303009
31,75	1 1/4"	35	13,01+13,1	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	3/8"UNF	102	M	6303010
31,75	1 1/4"	35	13,01+13,1	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	M10/150	108	M	6303016
31,75	1 1/4"	35	12+12	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	M10/150	108	M	6303021
31,75	1 1/4"	35	12+12	186	42,5	I	Ø11	82	III	RESERVOIR	M12/100	II	3/8"UNF	102	M	6303023
38,1	1 1/2"	39	21,1+21,1	195	52	IV	Ø11	Ø86	VIII	PIPE Ø7,37	M12/100	III			M	6301041
38,1	1 1/2"	22	10,3+12,5	195	46,3	IV	Ø11	Ø86	VIII	PIPE Ø7,37	M12/100	III			M	6301056
38,1	1 1/2"	39	21,1+21,1	195	52	IV	Ø11	Ø86	VIII	PIPE Ø7,37	M12/100	II	M10/150	108	M	6301061
38,1	1 1/2"	39	21,1+21,1	195	52	IV	Ø11	Ø86	VIII	PIPE Ø7,37	M12/100	II	M10/150	108	M	6301061
38,1	1 1/2"	39	21,1+21,1	195	54	IV	Ø11	Ø86	III	PIPE Ø7,37	M12/100	II	M10/150	108	M	6301064
38,1	1 1/2"	39	21,1+21,1	196	52	II	Ø11	Ø86	III	PIPE Ø7,37	M12/100	II	M10/150	108	M	6301064
38,1	1 1/2"	39	21,1+21,1	195	52	IV	Ø11	Ø86	VIII	PIPE Ø7,37	M12/100	II	M10/150	115	M	6301065
38,1	1 1/2"	39	21,1+21,1	196	52	IV	Ø11	Ø86	III	PIPE Ø7,37	M12/100	II	M10/150	108	M	6301068

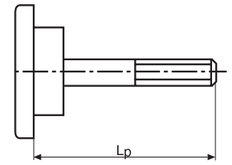
Step - Bore
Master Cylinders



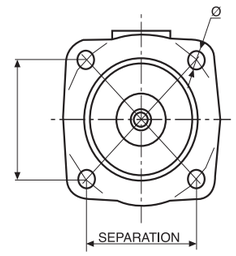
Functional data				External dimensions		Installation			Body	Fluid Inlet	Fluid Outlet	Push Rod			Fluid type	Part Number
Bore Ø		Stroke Vol. MIN.		L	D	Type	Hole Ø, x separation		Fluid Inlet	Fluid Outlet	Fluid Outlet	Type	Size	Lp	Note 2.	
Ø1	Ø2															
mm	inches	mm	cc	mm	mm		Ømm	mm	Type/size	Type/size	Type/size			mm		
22,22	19,05	33		136,5	37,9	II	Ø8,5	60	PIPE Ø11	M10X1	M10X1	IV	Ø8-W=8,8	114	M	6306006
38,1	25	35	37,6	161	50,5	I	8,5	53	PIPE Ø7,37	M14X1,5	M14X1,5	I	M10X1,5	82	M	6306001



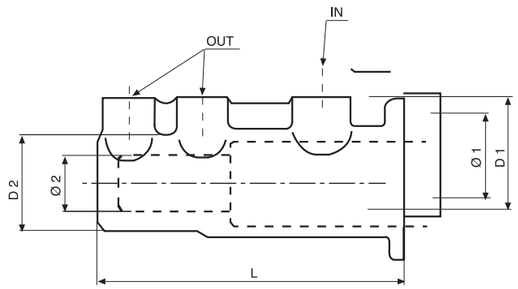
PUSH ROD TYPE (TYPE I THREAD)



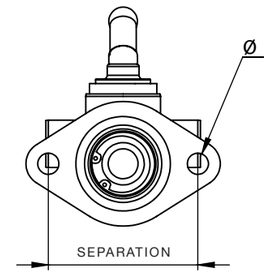
INSTALLATION FLANGE TYPE (TYPE V)



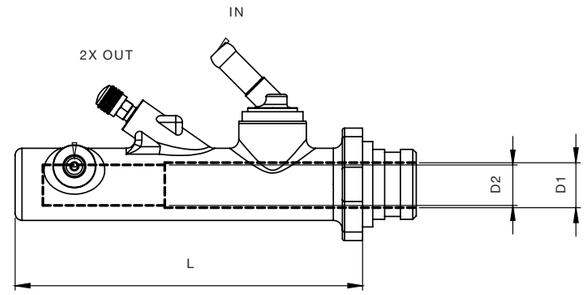
MASTER CYLINDER TYPE (CMDD)



INSTALLATION FLANGE TYPE (TYPE I)



MASTER CYLINDER TYPE (CMMDD)



Hydraulic Boosters

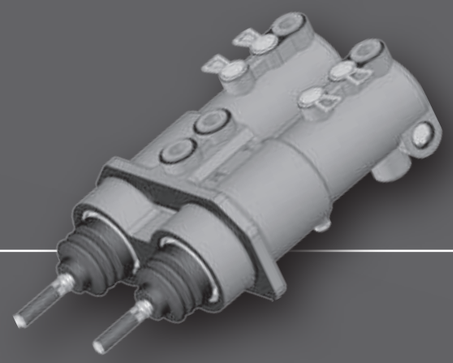
Frenos Iruña master cylinders with hydraulic boosters have been in use for many years on the braking systems of small and medium sized vehicles and are being installed as standard components by leading agricultural, industrial and construction machinery manufacturers worldwide.

Hydraulic boosters are available in two configurations:

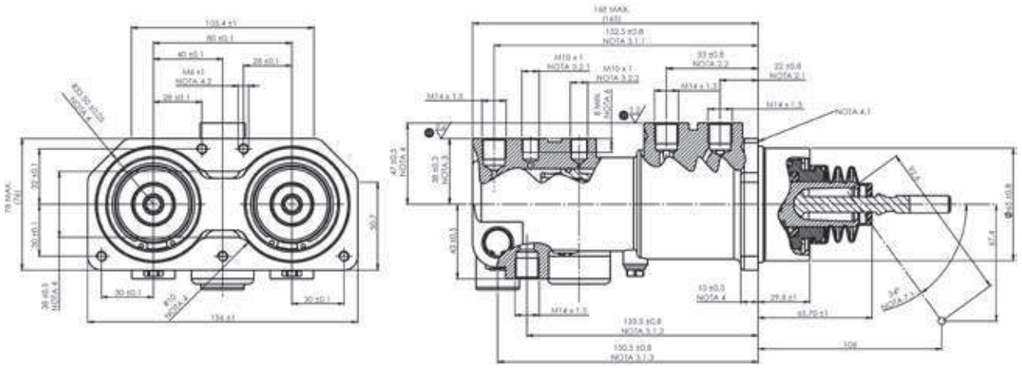
Twin Hydraulic Boosters

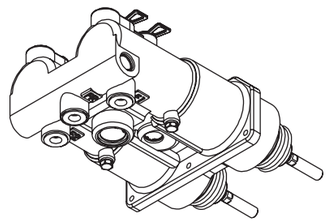
Single Hydraulic Boosters

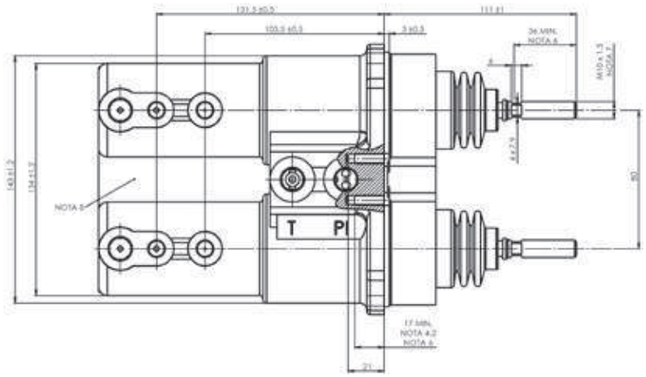
Twin Hydraulic Boosters



Twin Hydraulic Booster
Ø 50 mm + CMC Ø 41.28 mm







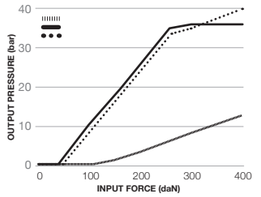
PART NUMBER:
6315026

PART NAME:
Twin HB + CMC

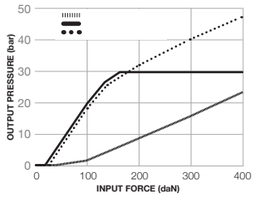
PRODUCT CHARACTERISTICS:

Booster: Ø 50 mm
Liquid type: Mineral Oil
CMC: Ø 41.03 mm
Liquid type: Mineral LHM
Total stroke: 21 mm MAX

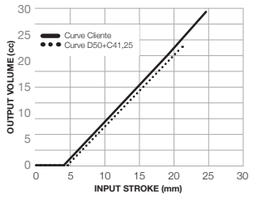
Performance curve: Booster50 + CM41.28
Twin pedal. Input Force: Output Pressure
(Booster Ratio 3/6:1)



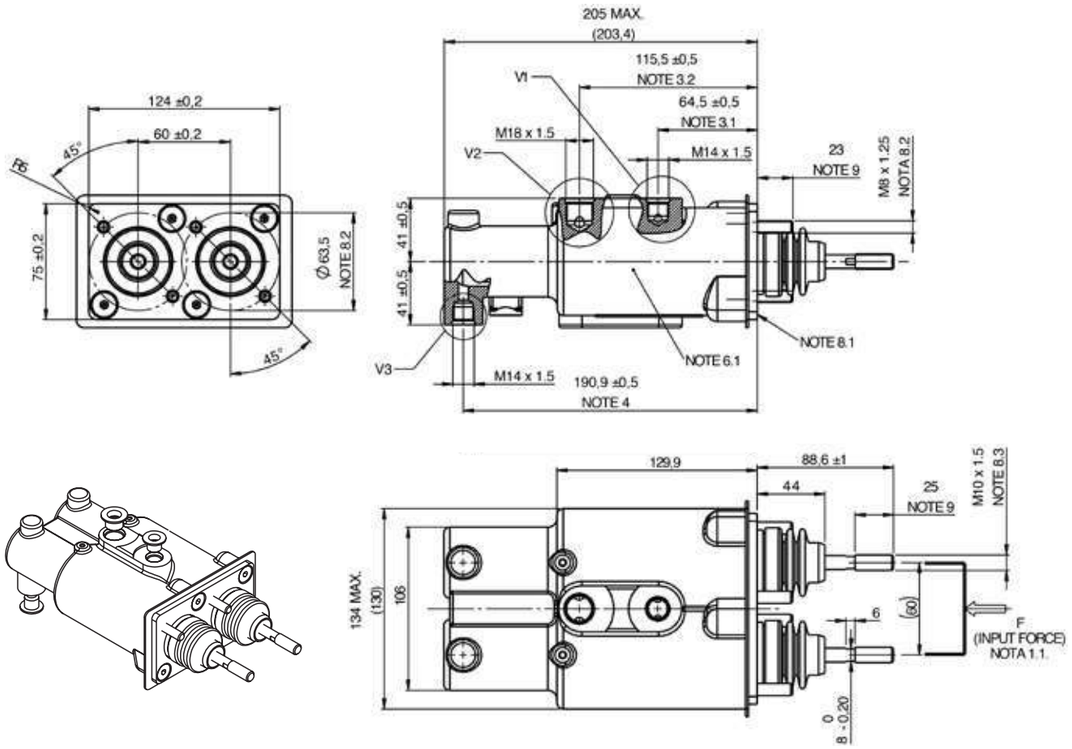
Performance curve: Booster50 + CM41.28
Single pedal. Input Force: Output Pressure
(Booster Ratio 3/6:1)



Performance curve: Booster50 + CM41.28
Input Stroke: Output Volume



Twin Hydraulic Booster
Ø 57 mm + CMC Ø 31.75 mm



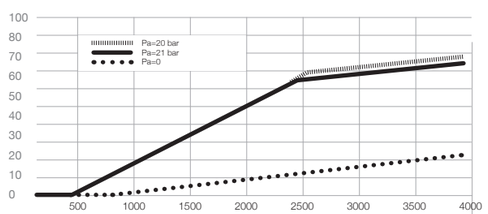
PART NUMBER:
P129.15

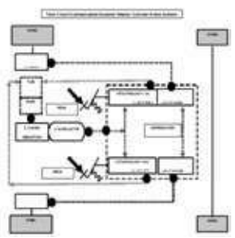
PART NAME:
Twin HB + CMC

PRODUCT CHARACTERISTICS:

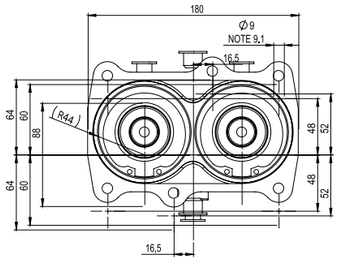
Booster: Ø 57 mm
Liquid type: Mineral Oil
CMC: Ø 31.75 mm
Liquid type: Mineral LHM
Total stroke: 39 mm MAX

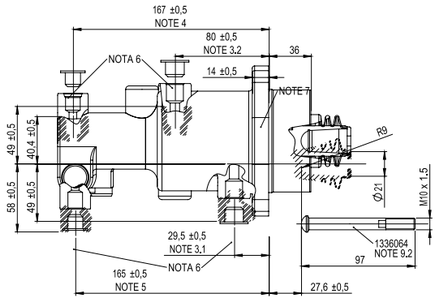
Performance curve: Booster57 + CMC31,75 Binocular (pedals linked)
Input Force: Output Pressure

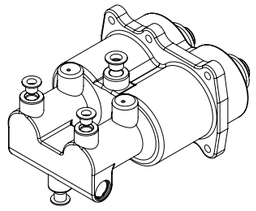


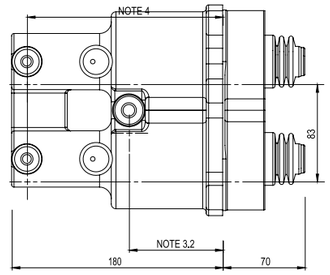


Twin Hydraulic Booster
Ø 75 mm + CMC Ø 38.01 mm







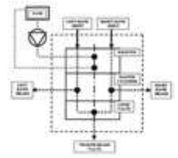


PART NUMBER:
P30.08 E

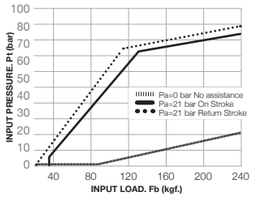
PART NAME:
Twin HB + CMC

PRODUCT CHARACTERISTICS:

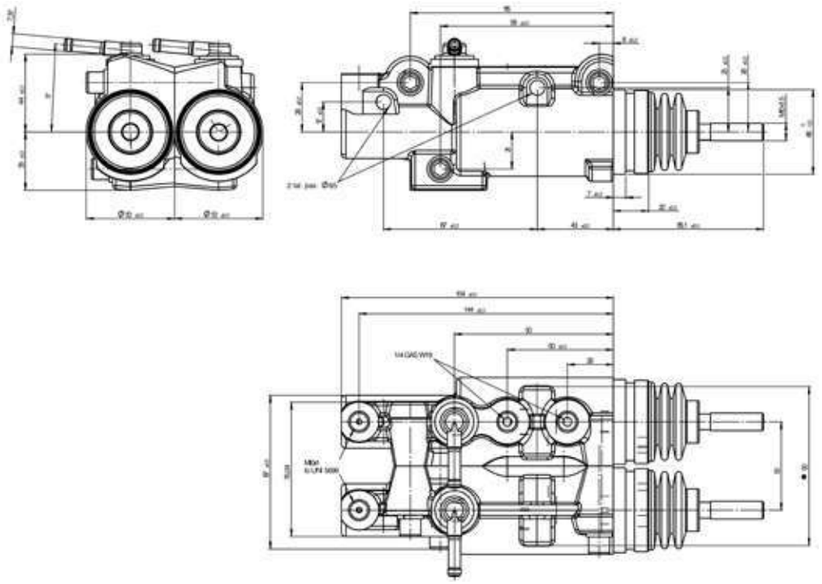
Booster: Ø 75 mm
Liquid type: Mineral Oil
CMC: Ø 38.1 mm
Liquid type: Mineral Oil version
LHM – Mineral Oil version
Total stroke: 35 mm MAX



Performance curve: Booster75 + CM38.1.
Input Load: Output Pressure



Twin Hydraulic Booster
Ø 75 mm + CMC Ø 38.01 mm



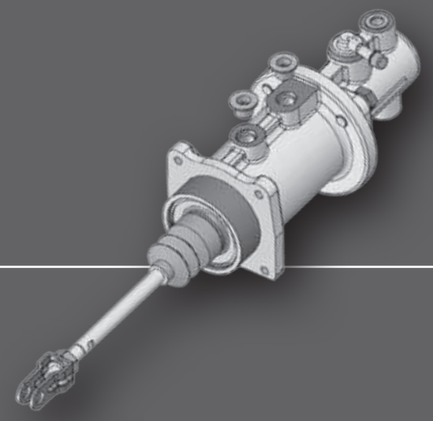
PART NUMBER:
6315019

PART NAME:
Twin HB + CMC

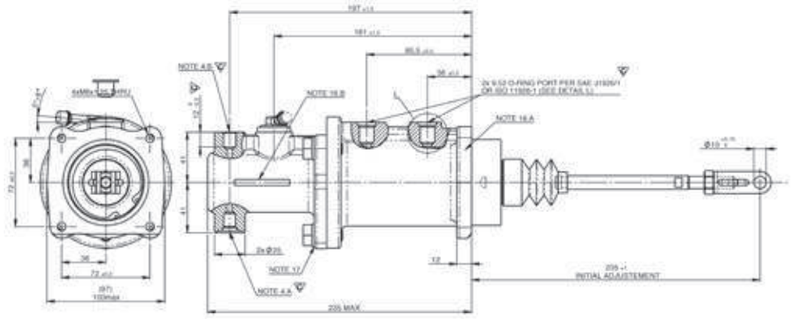
PRODUCT CHARACTERISTICS:

Booster: Ø 36 mm
Liquid type: Mineral Oil
CMC: Ø 19.05 mm
Liquid type: Mineral Oil version
LHM – Mineral Oil version
Total stroke: 19 mm

Single Hydraulic Boosters



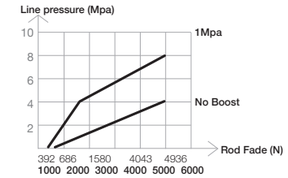
Single Hydraulic Booster
Ø 57 mm + Ø CMC 31.75 mm



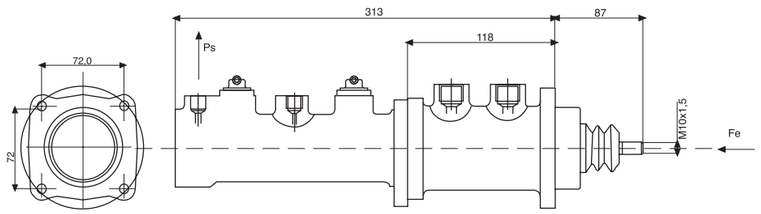
PART NUMBER:
6315016

PART NAME:
Hydraulic Booster
+ Single circuit Master Cylinder

PRODUCT CHARACTERISTICS:
Booster: Ø 57 mm
Liquid type: Mineral Oil
CMC: Ø 31.75 mm
Liquid type: Mineral Oil version
Total stroke: 25 mm



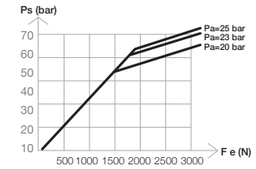
Single Hydraulic Booster
Ø 57 mm + Ø CMC 41.27 mm



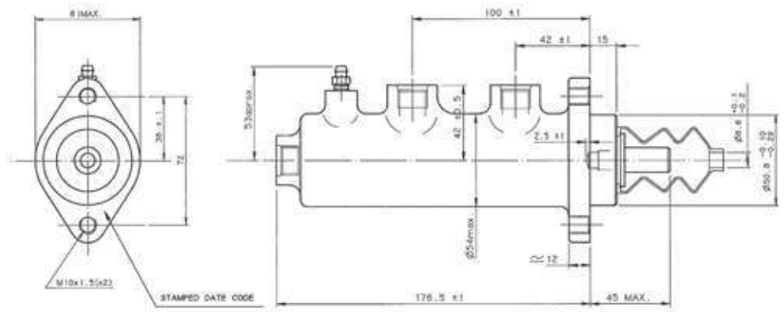
PART NUMBER:
6315001

PART NAME:
Hydraulic Booster
+ Tandem Master Cylinder

PRODUCT CHARACTERISTICS:
Booster: Ø 57 mm
Liquid type: Mineral Oil
CMC: Ø 41.27 mm
Liquid type: Mineral Oil version
Total stroke: 28 mm



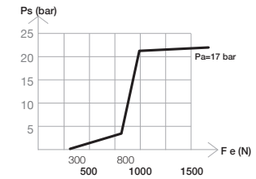
Clutch Booster
Ø41.27 mm



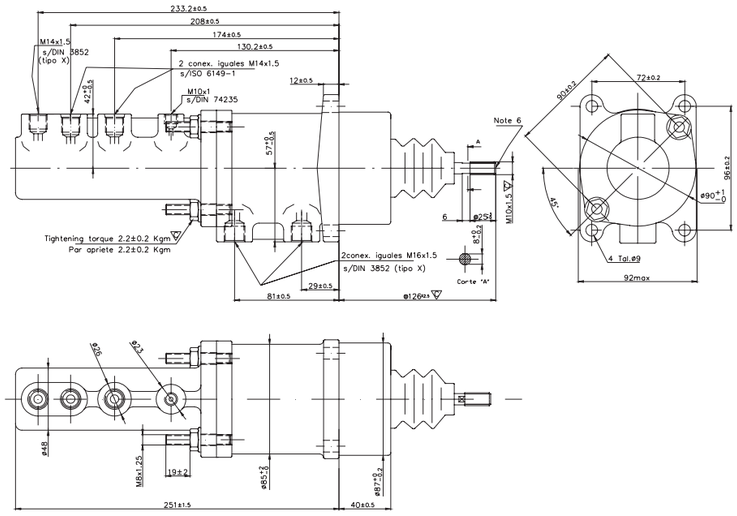
PART NUMBER:
6315007

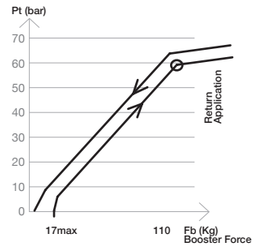
PART NAME:
Cluch Booster

PRODUCT CHARACTERISTICS:
Booster: Ø 41.27 mm
Liquid type: Mineral Oil
Total stroke: 35 mm MAX



Single Hydraulic Booster
Ø 75 mm + Ø CMC 38.1 mm (with trailer)





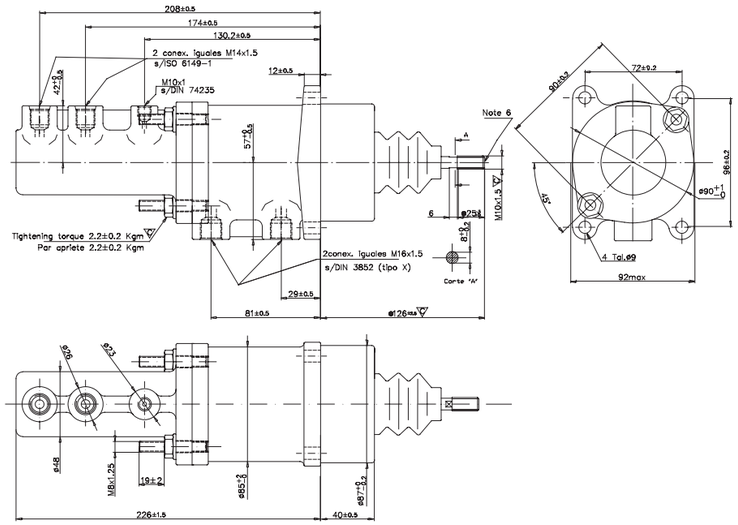
PART NUMBER:
6315014

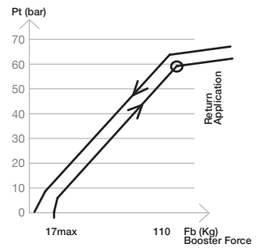
PART NAME:
Hydraulic Booster + Compensated Master Cylinder (with trailer)

PRODUCT CHARACTERISTICS:

Booster: Ø 75 mm
Liquid type: Mineral Oil
CMC: Ø 38.1 mm
Liquid type: Mineral Oil version
Total stroke: 39 mm

Single Hydraulic Booster
Ø 75 mm + Ø CMC 38.1 mm (with trailer)





PART NUMBER:
6315015

PART NAME:
Hydraulic Booster + Compensated Master Cylinder (with trailer)

PRODUCT CHARACTERISTICS:

Booster: Ø 75 mm
Liquid type: Mineral Oil
CMC: Ø 38.1 mm
Liquid type: Mineral Oil version
Total stroke: 33 mm

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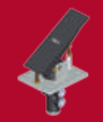
Power Brake Valves

Modulator Brake Valves

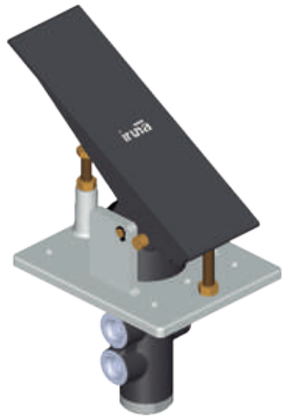


Master Priority Valves

Modulator Brake Valves

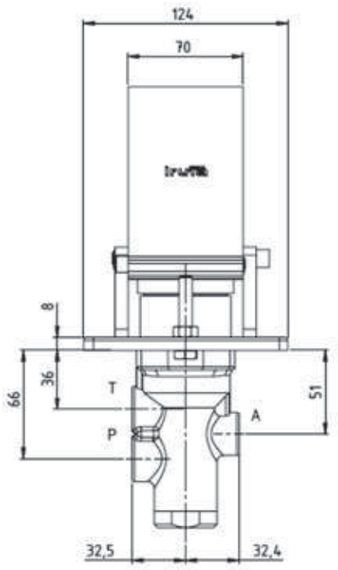
Single Brake Modulator Valve - Single circuit

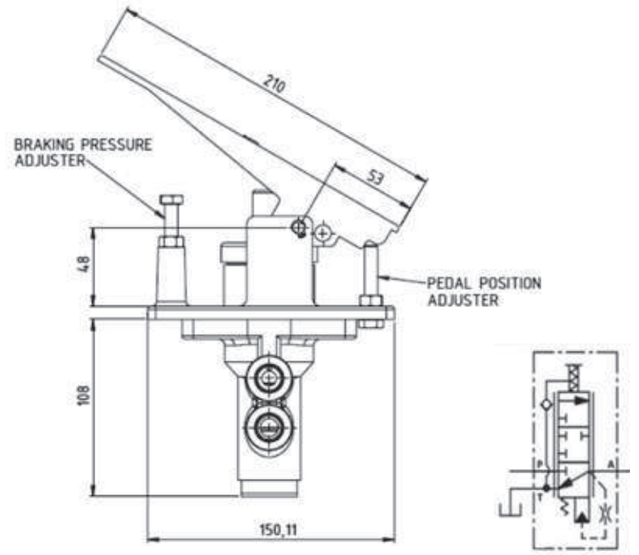
This product operates a single brake line in a hydraulic braking circuit and is used to regulate the fluid pressure delivered to apply the brakes, with a high capacity for fluid volume & flow. The pedal is used to apply the input force & stroke with an internal valve design such that the braking is progressive & controlled. Many performance curves (Input Force / Output Pressure) are easily achieved depending on the customer pedal feel needs. A number of pedal options are available; in this case we illustrate the vertically installed Valve with hinged type pedal.



HYDRAULIC CONNECTIONS		THREAD SIZE
A	OUTLET CONNECTION	M16 x 1.5
P	INLET CONNECTION	M16 x 1.5
T	RESERVOIR CONNECTION	M16 x 1.5

PERFORMANCE DATA			
Pedal Input Force (N)	Pedal Input Stroke (mm / degrees)	Brake Output Pressure (Bar)	Inlet Pressure (Bar)
245	90 / 40º	100	150
360	90 / 40º	100	150
450	90 / 40º	100	150
450	90 / 40º	30	150



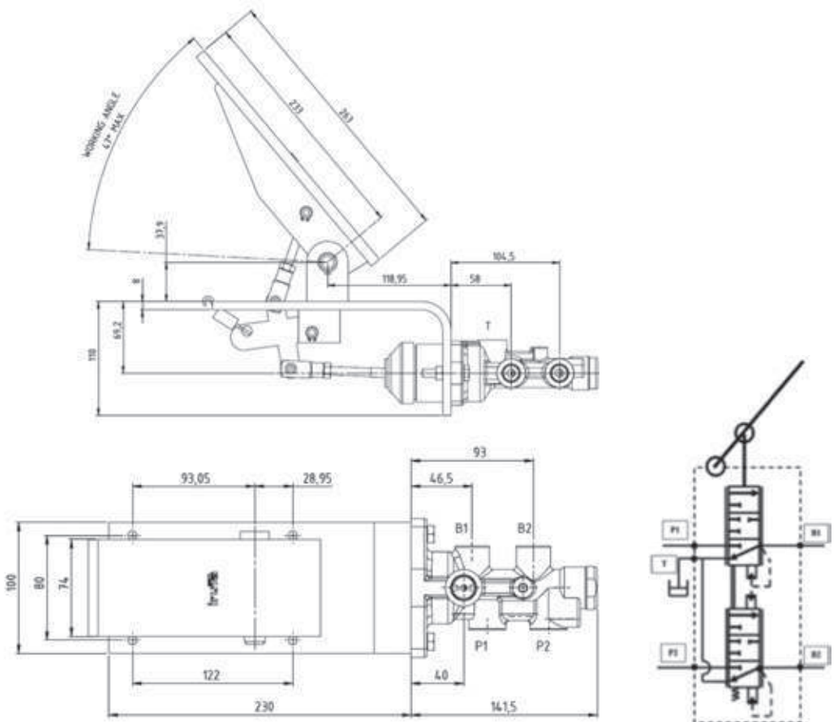


Tandem Brake Modulator Valve - Twin circuit

This product operates twin brake lines in a “tandem” hydraulic braking circuit and is used to regulate the fluid pressure delivered to apply the brakes, with a high capacity for fluid volume & flow. The brake circuits are independent for safety considerations & allow the brake performance to be optimized. The pedal is used to apply the input force & stroke with an internal valve design such that the braking is progressive & controlled. Many performance curves (Input Force / Output Pressure) are easily achieved depending on the customer pedal feel needs. A number of pedal options are available; in this case we illustrate the horizontally installed Valve with hinged type pedal.

CONNECTIONS		THREAD SIZE
B1,B2	OUTLET CONNECTION	M16 x 1.5
P1.P2	INLET CONNECTION	M16 x 1.5
T	RESERVOIR CONNECTION	M18 x 1.5

PERFORMANCE DATA			
Pedal Input Force (N)	Pedal Input Stroke (mm / degrees)	Brake Output Pressure (Bar)	Inlet Pressure (Bar)
245	90 / 40º	100	150
360	90 / 40º	100	150
450	90 / 40º	100	150
450	90 / 40º	30	150

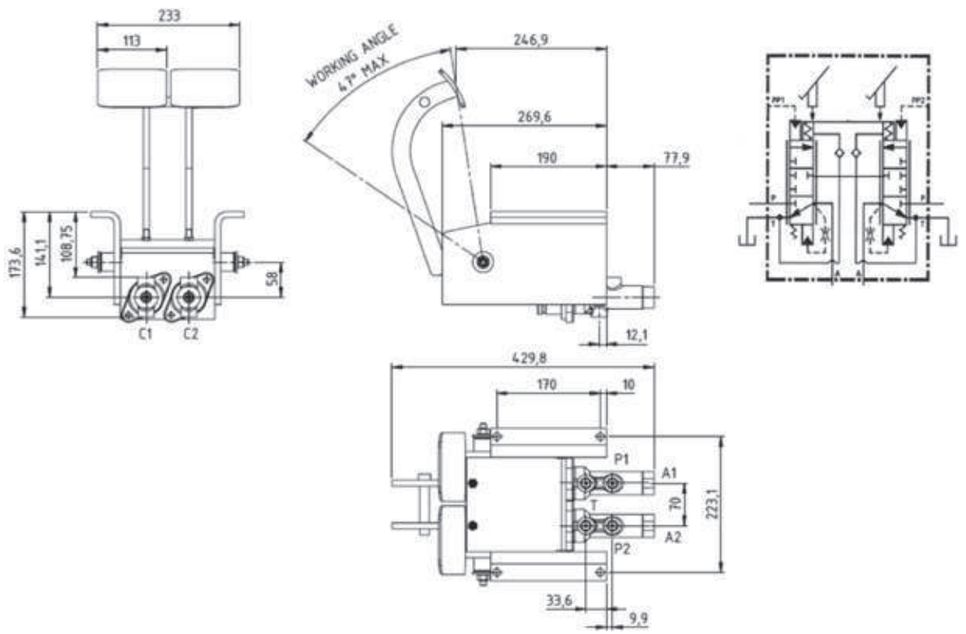


Compensating Brake Modulator Valve - Twin circuit, double pedal

This product operates twin brake lines in a hydraulic braking circuit and is used to regulate the fluid pressure delivered to apply the brakes in two operational modes (“off road” / skid steer – separate pedals & “on road” - linked pedal), with a high capacity for fluid volume & flow. The brake circuits are separate and the braking mode depends on the pedal configuration. For normal road driving the pedals must be linked & the brake valve design gives a hydraulic balance (compensation) to give stable braking. For extra vehicle maneuverability the option is to separate the pedals and actuate each side of the axle brake independently, so giving the “skid steer” condition. The pedals are used to apply the input force & stroke with an internal valve design such that the braking is progressive & controlled. Many performance curves (Input Force / Output Pressure) are easily achieved depending on the customer pedal feel needs. A number of pedal options are available; in this case we illustrate the horizontally installed Valve with hanging type pedal.

HYDRAULIC CONNECTIONS		THREAD SIZE
A1,A2	OUTLET CONNECTION	M16 x 1.5
C1, C2	OUTLET CONNECTION	M16 x 1.5
P1.P2	INLET CONNECTION	M16 x 1.5
T	RESERVOIR CONNECTION	M16 x 1.5

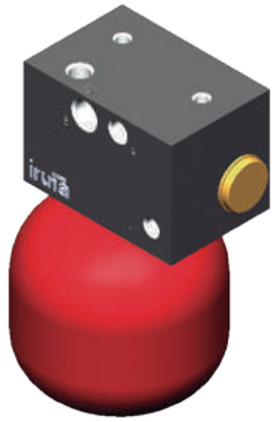
PERFORMANCE DATA			
Pedal Input Force (N)	Pedal Input Stroke (mm / degrees)	Brake Output Pressure (Bar)	Inlet Pressure (Bar)
245	90 / 40º	100	150
360	90 / 40º	100	150
450	90 / 40º	100	150
450	90 / 40º	30	150



Master
Priority Valves

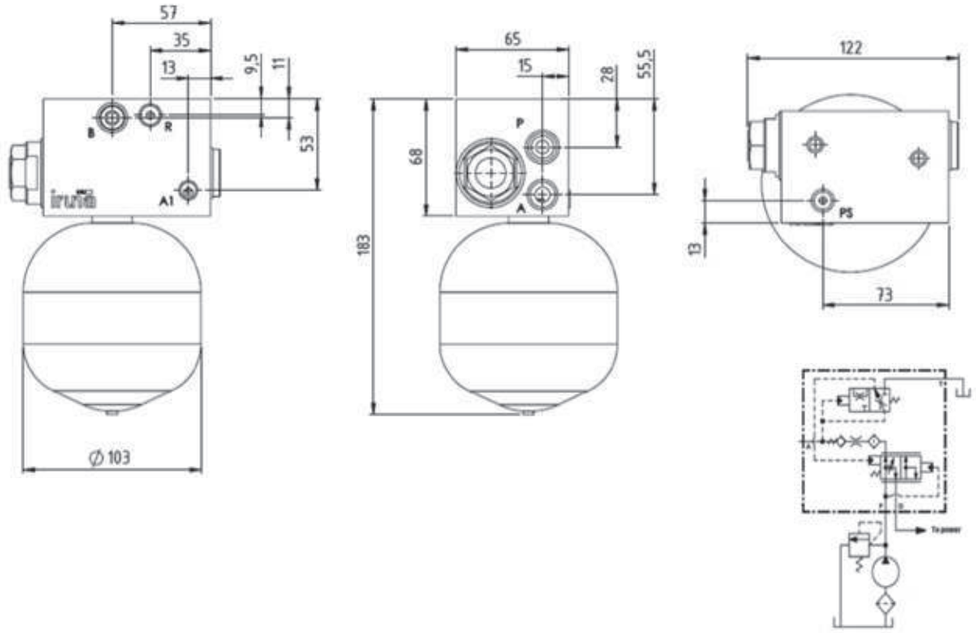
Single Charge Valve

This product has two hydraulic circuits, one connection for the braking system (Modulator Valves, Hydraulic Boosters etc.) & a secondary connection for other devices (power steering, ventilation fan etc.). The brake circuit has defined working pressure levels cutting off at the required pressure & reconnecting when necessary. These pressure levels are generally adjustable depending on the system requirements.



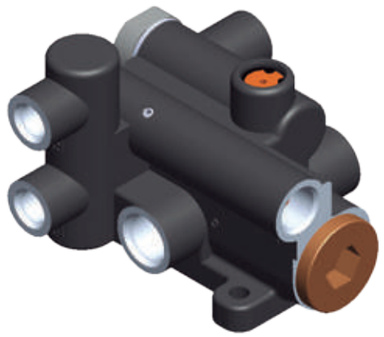
CONNECTIONS		THREAD SIZE
A	OUTLET CONNECTION	M16 x 1.5
A1	SENSOR CONNECTION	M10 x 1
PS	OUTLET CONNECTION	M12 x 1.5
P	INLET CONNECTION	M18 x 1.5
B	OUTLET CONNECTION	M16 x 1.5
R	RESERVOIR CONNECTION	M12 x 1

PERFORMANCE DATA	
OPERATING PRESSURE	150 BAR
PRESSURE AT PORT A1, A2	TEMPORARY 150 BAR
CUT-IN PRESSURE	35 BAR
CUT-OFF PRESSURE	56 BAR
PERMISSIBLE MEDIUM	MINERAL OIL
OPERATING TEMPERATURE RANGE	-30 ºC TO +80 ºC



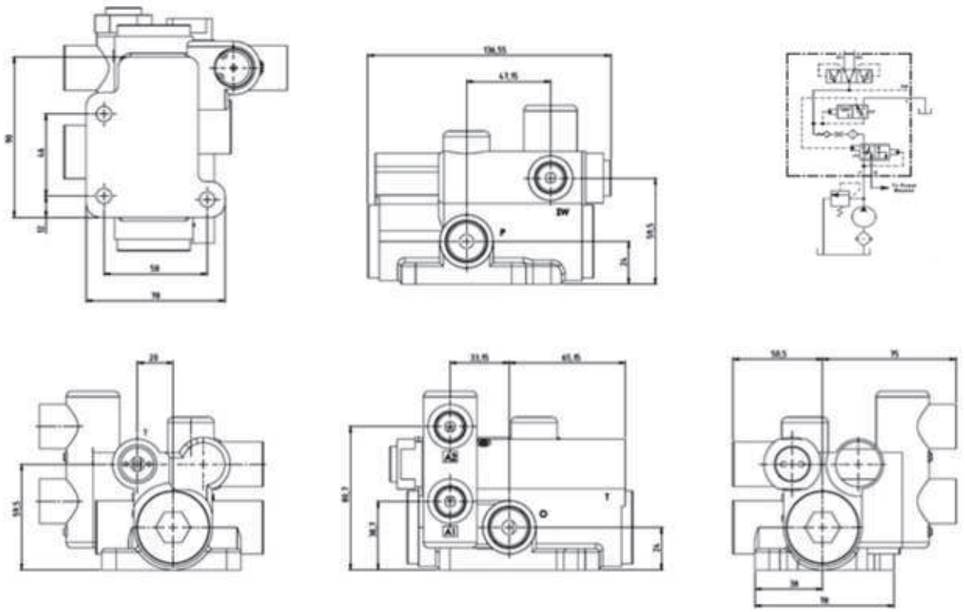
Tandem Charge Valve

This product has three hydraulic circuits, two independent connections for the braking system (Modulator Valves, Hydraulic Boosters etc.) & a secondary connection for other devices (power steering, ventilation fan etc.). The brake circuits have defined working pressure levels cutting off at the required pressure & reconnecting when necessary. These pressure levels are generally adjustable depending on the system requirements



HYDRAULIC CONNECTIONS		THREAD SIZE
A1,A2	OUTLET CONNECTION	M16 x 1.5
P	INLET CONNECTION	M22 x 1.5
O	OUTLET CONNECTION	M22 x 1.5
SW	SENSOR CONNECTION	M16 x 1.5
T	RESERVOIR CONNECTION	M20 x 1.5

PERFORMANCE DATA	
OPERATING PRESSURE	150 bar
PRESSURE AT PORT A1, A2	Temporary 150 bar
CUT-IN PRESSURE	65 bar
CUT-OFF PRESSURE	90 bar
PERMISSIBLE MEDIUM	Mineral oil
OPERATING TEMPERATURE RANGE	-30 ºC to +80 ºC



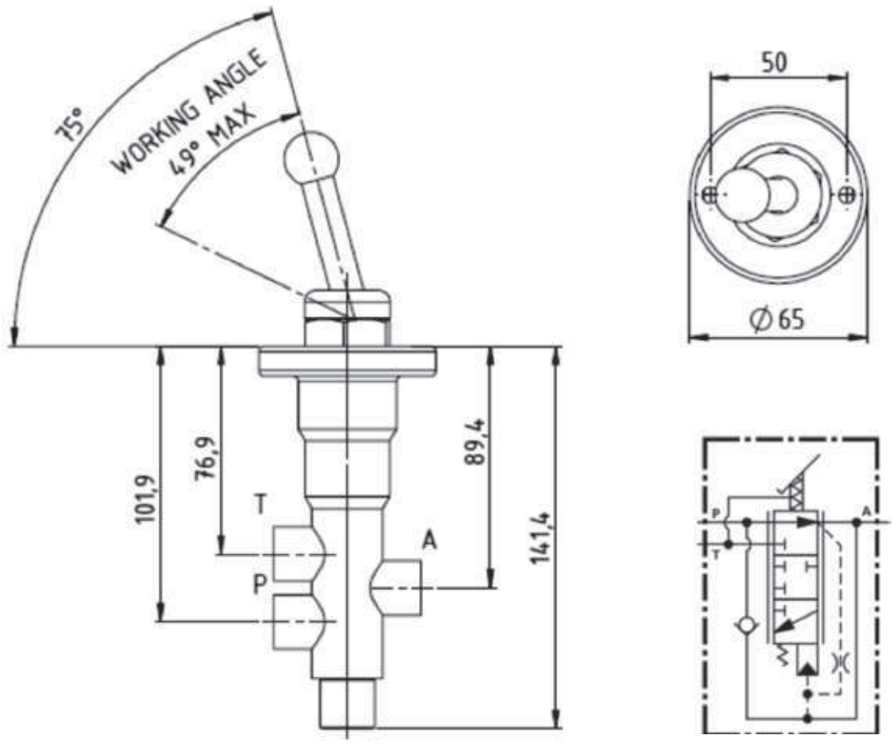
Parking Brake Valves

Parking Brake Valve

This product allows the parking brake to be operated by delivering the required fluid volume & pressure by means of a control lever (as shown) or pedal. The delivered pressure may be modulated if necessary, & limited too

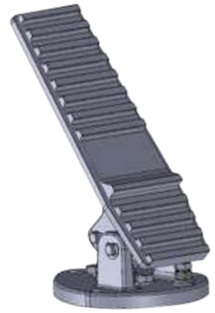
CONNECTIONS		THREAD SIZE
A	OUTLET CONNECTION	M16 x 1.5
P	INLET CONNECTION	M16 x 1.5
T	RESERVOIR CONNECTION	M16 x 1.5
B	OUTLET CONNECTION	M16 x 1.5
R	RESERVOIR CONNECTION	M12 x 1

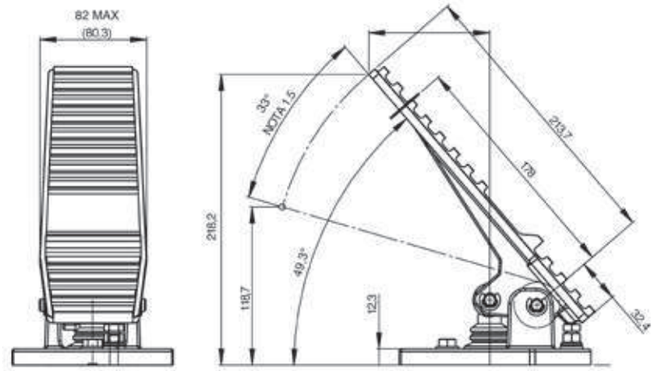
PERFORMANCE DATA	
OPERATING PRESSURE	150 BAR
OUTPUT PRESSURE	50 BAR
PERMISSIBLE MEDIUM	MINERAL OIL
OPERATING TEMPERATURE RANGE	-30 ºC TO +80 ºC
OPERATING TEMPERATURE RANGE	-30 ºC TO +80 ºC



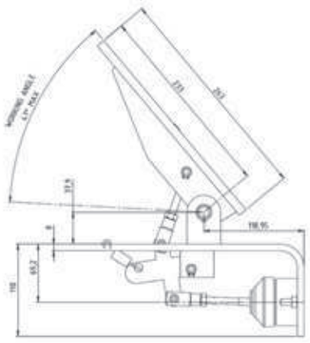
Pedals

Pedal assembly vertical installation

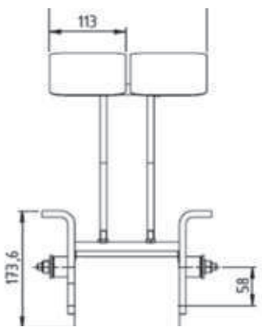


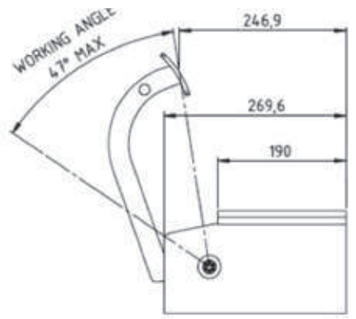


Pedal assembly horizontal installation

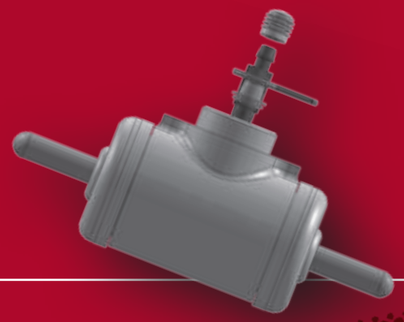


Double pedal assembly horizontal installantion

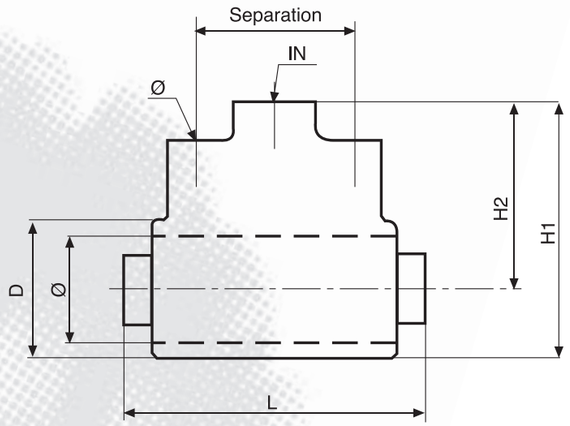




Wheels Cylinders

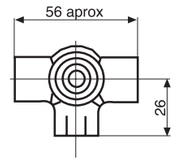


Functional data			External Dimensions				Installation		Fluid Inlet	Fluid type	Part Number
Bore ø		Output stroke	L	H1	H2	D	Type	Separation			
mm	inches	mm	mm	mm	MM	mm	ø mm	mm	Size	Note 2	
22.2	7/8"	15	72.1	40.8	25.8	30	M6/100	30	3/8 UNF	V	6311043
28.57	1 1/8"	26.95	110.25	49.06	30.26	37.6	M8/125	44	M10/100	V	6311044
34.9	1 3/8"	32	133	66	41	50	M8/125	37.8	M12/100	M	6311040
31.75	1 1/4"	29	114	64.75	42.6	44.3	M8/125	47.9	M10/100	V	6311038
31.75	1 1/4"	32	133	66	41	50	M8/125	37.8	M12/100	M	6311039
31.75	1 1/4"	32.8	104.4	49.8	35.8	45.4	M8/125	44	M10/100	V	6311042
34.92	1 3/8"	20	105.5	93	70.05	45	M8/125	54	M8/100(x2)	M	6311032
34.92	1 3/8"	20	105.5	93	70.05	45	M8/125	54	M8/100(x2)	M	6311033
34.92	1 3/8"	30	135	63.5	38.5	50	M8/125	38	7/16 -20 UNF	v	6311045

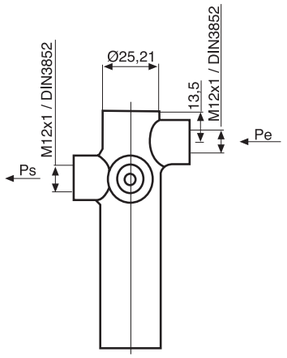


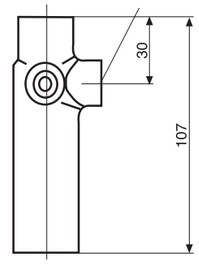
Pressure limiting valves

Pressure limiting valves



PRESSURE LIMIT (bar)	FLUID TYPE	PART NUMBER
100	V	6321009
20	M	6321015
37	M	6321016
25	M	6321020
5	V	6321023
30	V	6321024





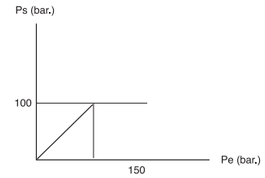
MOUNTING POINT M8xL5x10 min.

PART NUMBER:
6315017

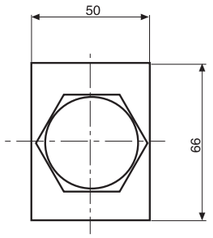
PART NAME:
Pressure limit valvce

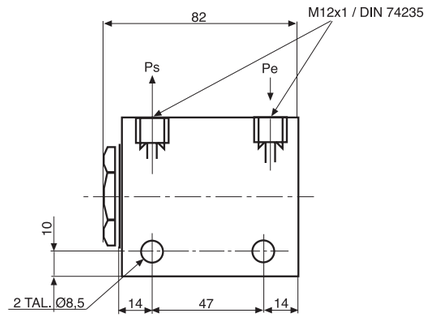
PRODUCT CHARACTERISTICS:

Pressure limit Pc: 100 bar
Liquid type: Mineral Oil



Pressure regulating valve



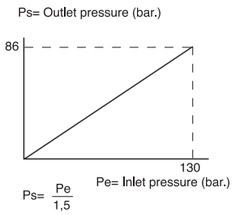


PART NUMBER:
6321017

PART NAME:
Pressure regulating valve

PRODUCT CHARACTERISTICS:

Pressure reduction: 1:15 (see graph)
Liquid type:
Vegetable DOT3, DOT4



Brake Fluid Reservoirs

Tandem Reservoir's catalogue

Caps (white colour = DOT brake fluid) (Green colour = Mineral Brake fluid)							Bottles			Brackets	
A	B	E	F	G	H	J	11	12	13	b	c
											
Part nº 1141007	Part nº 1141001	Part nº 1141021	Part nº 1141020	Part nº 1141021+C	Part nº 1141020+C	Part nº 1141015	Part nº 1195020	Part nº 1195010	Part nº 1195018	Part nº 3506004	Part nº 3506005

Reservoirs	Assembly Figures	Assembly Part nº	Description	Volume cm3 - MAX/MIN	Lengh	Width	High
1	11A	To be issued	Remote Reserv. DOT Fluid	360/130	125	70	80
2	11B	1120012	Remote Reserv. MIN Fluid	360/130	125	70	80
3	11E	1120031	Remote Reserv. DOT Fluid + FLWI	360/130	125	70	94
4	11F	To be issued	Remote Reserv. MIN Fluid + FLWI	360/130	125	70	94
5	11G	To be issued	Remote Reserv. (DOT)+FLWI+Conn. JIS	360/130	125	70	94
6	11H	To be issued	Remote Reserv. (MIN)+FLWI+Conn. JIS	360/130	125	70	94
7	11Ab	To be issued	Reservoir 1 + Bracket 90º	360/130	125	70	80
8	11Bb	3007003	Reservoir 2 + Bracket 90º	360/130	125	70	80
9	11Eb	To be issued	Reservoir 3 + Bracket 90º	360/130	125	70	94
10	11Fb	To be issued	Reservoir 4 + Bracket 90º	360/130	125	70	94
11	11Gb	To be issued	Reservoir 5 + Bracket 90º	360/130	125	70	94
12	11Hb	To be issued	Reservoir 6 + Bracket 90º	360/130	125	70	94
13	11Ac	To be issued	Reservoir 1 + Flat Bracket 90º	360/130	125	70	80
14	11Bc	3007008	Reservoir 2 + Flat Bracket 90º	360/130	125	70	80
15	11Ec	To be issued	Reservoir 3 + Flat Bracket 90º	360/130	125	70	94
16	11Fc	To be issued	Reservoir 4 + Flat Bracket 90º	360/130	125	70	94
17	11Gc	To be issued	Reservoir 5 + Flat Bracket 90º	360/130	125	70	94
18	11Hc	To be issued	Reservoir 6 + Flat Bracket 90º	360/130	125	70	94
19	12A	To be issued	Reserv. Conn. to M.Cyl. DOT Fluid	360/130	125	70	80
20	12B	1120003	Reserv. Conn. to M.Cyl. MIN Fluid	360/130	125	70	80
21	12E	1120002	Reserv. Conn. to M.Cyl. DOT Fluid + FLWI	360/130	125	70	94
22	12F	1120014	Reserv. Conn. to M.Cyl. MIN Fluid + FLWI	360/130	125	70	94
23	12G	To be issued	Reserv. Conn. to M.Cyl. (DOT)+FLWI+JIS	360/130	125	70	94
24	12H	To be issued	Reserv. Conn. to M.Cyl. (MIN)+FLWI+JIS	360/130	125	70	94
25	13J	1120028	Reserv. Conn. to M.Cyl. DOT Fluid	450/150	110	94	93

Single Reservoir's catalogue / Catálogo de depósitos simples

Caps (white colour = DOT brake fluid) (Green colour = Mineral Brake fluid)								Brackets	
A	B	C	D	E	F	G	H	a	b
									
Part nº 1141007	Part nº 1141001	Part nº 1141008	Part nº 1141006	Part nº 1141021	Part nº 1141020	Part nº 1141026	Part nº 1140020+C	Part nº 3506002	Part nº 1550005
1	2	3	4	5	6	7	8	9	10
									
Ref. 1195019	Ref. Vaso 30012	Ref. 30312	Ref. 1195014	Ref. 1195011 Thread M16x1,5	Ref. 30192+30110 Thread M18x1,5	Ref. 30192+30041 Thread 3/4"x16h	Ref. 1195013 Thread M16x1,5	Ref. 30276+30170 Thread M18x1,5	Ref. 30276+30040 Thread 3/4"x16h

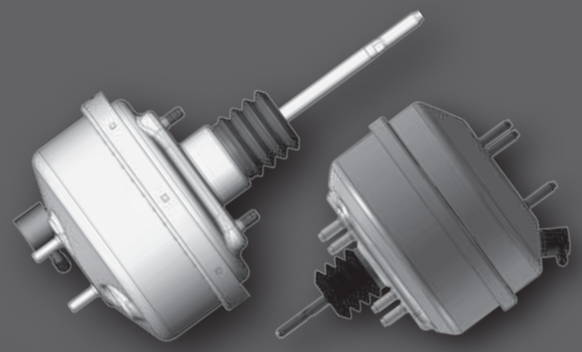
Reservoirs	Assembly Figures	Assembly Part nº	Description	Volume cm3 - MAX/MIN			
1	1A	1120008	Remote Reserv. DOT Fluid	102 / 35	7	56	82
2	1B	1120026	Remote Reserv. MIN Fluid	102 / 35	7	56	82
3	1E	To be issued	Remote Reserv. DOT Fluid + FLWI	102 / 35	7	56	96
4	1F	1120034	Remote Reserv. MIN Fluid + FLWI	102 / 35	7	56	96
5	1G	To be issued	Remote Reserv. (DOT)+FLWI+Conn. JIS	102 / 35	7	56	96
6	1H	1120027	Remote Reserv. (MIN)+FLWI+Conn. JIS	102 / 35	7	56	96
7	1Aa	3070003	Reservoir 1 + Bracket 90º	102 / 35	7	56	82
8	1Ba	3007004	Reservoir 2 + Bracket 90º	102 / 35	7	56	82
9	1Ea	To be issued	Reservoir 3 + Bracket 90º	102 / 35	7	56	96
10	1Fa	To be issued	Reservoir 4 + Bracket 90º	102 / 35	7	56	96
11	1Ga	To be issued	Reservoir 5 + Bracket 90º	102 / 35	7	56	96
12	1Ha	To be issued	Reservoir 6 + Bracket 90º	102 / 35	7	56	96
13	2A	Stop 30012	Remote Reserv. DOT Fluid	102 / 35	7-7	56	82
14	2B	To be issued	Remote Reserv. MIN Fluid	102 / 35	7-7	56	82
15	2E	To be issued	Remote Reserv. DOT Fluid + FLWI	102 / 35	7-7	56	96
16	2F	To be issued	Remote Reserv. MIN Fluid + FLWI	102 / 35	7-7	56	96
17	2G	To be issued	Remote Reserv. (DOT)+FLWI+Conn.JIS	102 / 35	7-7	56	96
18	2H	To be issued	Remote Reserv. (MIN)+FLWI+Conn.JIS	102 / 35	7-7	56	96
19	2Aa	To be issued	Reservoir 13 + Bracket 90º	102 / 35	7-7	56	82
20	2Ba	To be issued	Reservoir 14 + Bracket 90º	102 / 35	7-7	56	82
21	2Ea	To be issued	Reservoir 15 + Bracket 90º	102 / 35	7-7	56	96
22	2Fa	To be issued	Reservoir 16 + Bracket 90º	102 / 35	7-7	56	96
23	2Ga	To be issued	Reservoir 17 + Bracket 90º	102 / 35	7-7	56	96
24	2Ha	To be issued	Reservoir 18 + Bracket 90º	102 / 35	7-7	56	96
25	3A	Stop 30003	Remote Reserv. DOT Fluid	120 / 30	Bore 6	56	88
26	3B	To be issued	Remote Reserv. MIN Fluid	120 / 30	Bore 6	56	88
27	3E	To be issued	Remote Reserv. DOT Fluid + FLWI	120 / 30	Bore 6	56	88
28	3F	To be issued	Remote Reserv. MIN Fluid + FLWI	120 / 30	Bore 6	56	88
29	3G	To be issued	Remote Reserv. (DOT)+FLWI+Conn.JIS	120 / 30	Bore 6	56	88
30	3H	To be issued	Remote Reserv. (MIN)+FLWI+Conn.JIS	120 / 30	Bore 6	56	88
31	4C	To be issued	Remote Reserv. DOT Fluid	120 / 35	7	68	72
32	4D	1120016	Remote Reserv. MIN Fluid	120 / 35	7	68	72
33	4Cd	To be issued	Reservoir 25 + Bracket	120 / 35	7	68	72
34	4Dd	To be issued	Reservoir 26 + Bracket	120 / 35	7	68	72
35	5A	1120006	Remote Reserv. M. Cyl. DOT Fluid	120 / 35	M16x1,5	56	82
36	5B	1120007	Remote Reserv. M. Cyl. MIN Fluid	120 / 35	M16x1,5	56	82
37	5E	To be issued	Remote Reserv. M. Cyl. DOT Fluid+FLWI	120 / 35	M16x1,5	56	96
38	5F	1120029	Remote Reserv. M. Cyl. MIN Fluid+FLWI	120 / 35	M16x1,5	56	96
39	5G	To be issued	Remote Reserv. M. Cyl. (DOT)+FLWI+Conn.JIS	120 / 35	M16x1,5	56	96
40	5H	To be issued	Remote Reserv. M. Cyl. (MIN)+FLWI+Conn.JIS	120 / 35	M16x1,5	56	96
41	6A	Stop 30009	Remote Reserv. M. Cyl. DOT Fluid	120 / 35	M18x1,5	56	82
42	6B	To be issued	Remote Reserv. M. Cyl. MIN Fluid	120 / 35	M18x1,5	56	82
43	6E	To be issued	Remote Reserv. M. Cyl. DOT Fluid + FLWI	120 / 35	M18x1,5	56	96
44	6F	To be issued	Remote Reserv. M. Cyl. MIN Fluid + FLWI	120 / 35	M18x1,5	56	96
45	6G	To be issued	Remote Reserv. M. Cyl. (DOT)+FLWI+Conn.JIS	120 / 35	M18x1,5	56	96
46	6H	To be issued	Remote Reserv. M. Cyl. (MIN)+FLWI+Conn.JIS	120 / 35	M18x1,5	56	96
47	7A	Stop 30143	Remote Reserv. M. Cyl. DOT Fluid	120 / 35	3/4"x16h	56	82
48	7B	To be issued	Remote Reserv. M. Cyl. MIN Fluid	120 / 35	3/4"x16h	56	82
49	7E	To be issued	Remote Reserv. M. Cyl. DOT Fluid + FLWI	120 / 35	3/4"x16h	56	96
50	7F	To be issued	Remote Reserv. M. Cyl. MIN Fluid + FLWI	120 / 35	3/4"x16h	56	96
51	7G	To be issued	Remote Reserv. M. Cyl. (DOT)+FLWI+Conn.JIS	120 / 35	3/4"x16h	56	96
52	7H	To be issued	Remote Reserv. M. Cyl. (MIN)+FLWI+Conn.JIS	120/ 35	3/4"x16h	56	96
53	8C	1120015	Remote Reserv. M. Cyl. DOT Fluid	120 / 40	M16x1,5	68	72
54	8D	1120005	Remote Reserv. M. Cyl. MIN Fluid	120 / 40	M16x1,5	68	72
55	9C	Stop 3002	Remote Reserv. M. Cyl. DOT Fluid	120 / 40	M18x1,5	68	72
56	9D	To be issued	Remote Reserv. M. Cyl. MIN Fluid	120 / 40	M18x1,5	68	72
57	10C	Stop 30144	Remote Reserv. M. Cyl. DOT Fluid	120 / 40	3/4"x16h	68	72
58	10D	To be issued	Remote Reserv. M. Cyl. MIN Fluid	120 / 40	3/4"x16h	68	72

Vacuum Boosters

Vacuum Boosters

Remote Vacuum Boosters

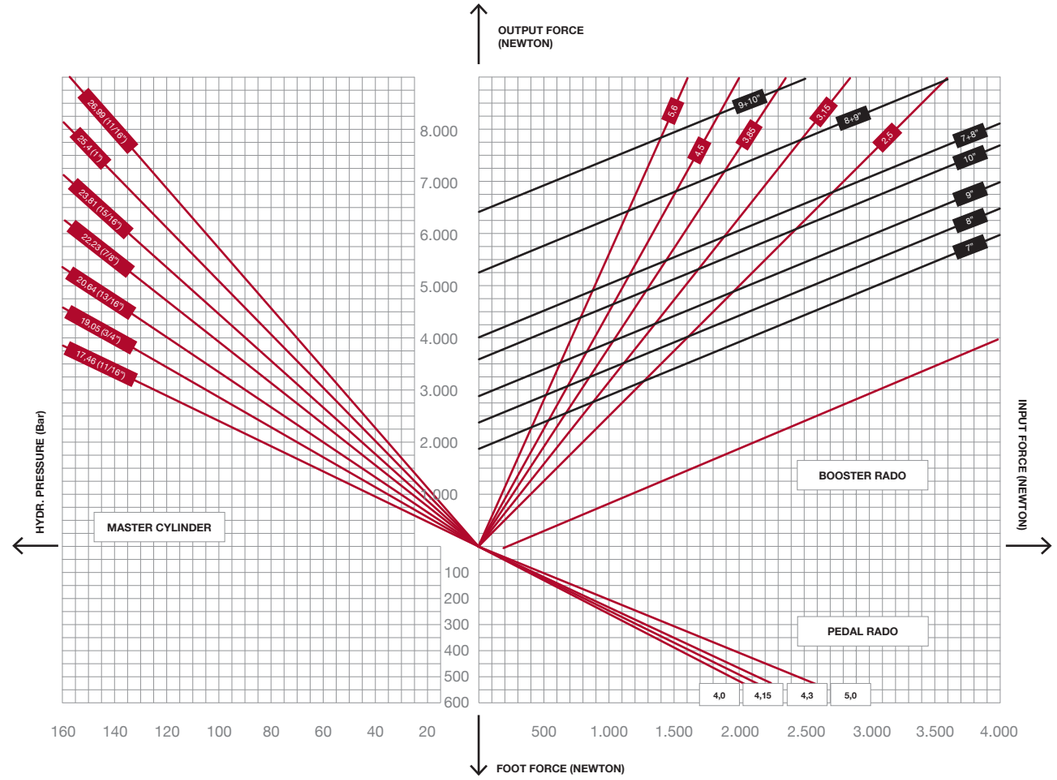
Vacuum Boosters



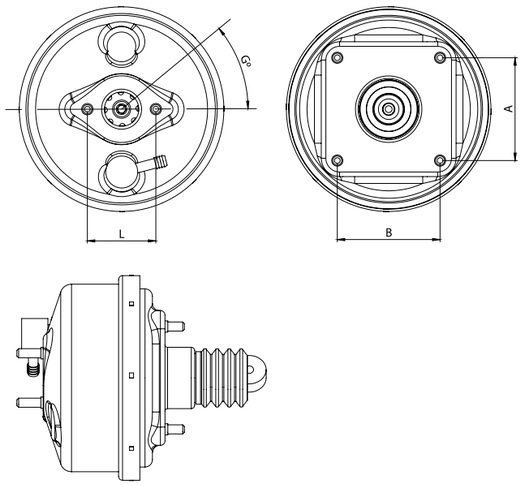
A vacuum servo is a component used as a part of the braking system, to provide assistance to the driver by decreasing the braking effort. A vacuum source is needed which, if not available directly from the engine (petrol / gasoline), may be delivered by a Rotary Vacuum Pump (mounted to engine), or an electric motor driven Diaphragm Pump.

This range of products may use either mineral based brake fluids, or the vegetable (DOT 3 / DOT 4) fluid.

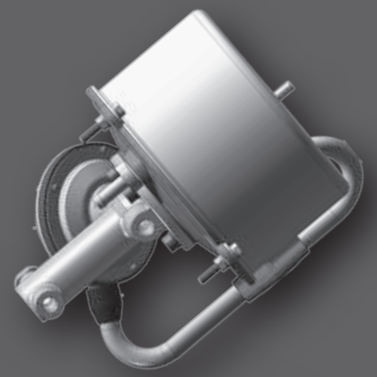
Product selection chart



Diaphram	Ensamblaje al vehicule		Ensamblaje al cilindro		
			L	H1	Part Number
SIZE	A	B	G (º)	H	
6"	86	86	38	70	6106006
6"	90	90	45	60	6106070
7"	68	68		60	6107004
7"	72	72		60	6107005
7"	68	68	22	70	6107027
7"	86	86		86	6107059
8"	90	90		60	6108004
8"	72	72		82	6108006
8"	86	86	22	60	6108034
9"	86	86	22	70	6109009
9"	60	80		82	6109054
9"	72	72		60	6109072
9"	86	86		86	6109090
9"	72	72	45	101.8	6109097
8"/8"	86	86	22.3	70	6128007
8"/8"	90	90		44	6128054
8"/9"	90	101.8	45	90	6189001
8"/9"	90	101.8	21.5	90	6189006
10"					6110006



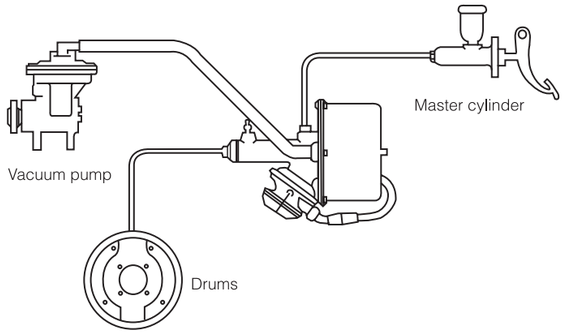
Remote Vacuum Boosters



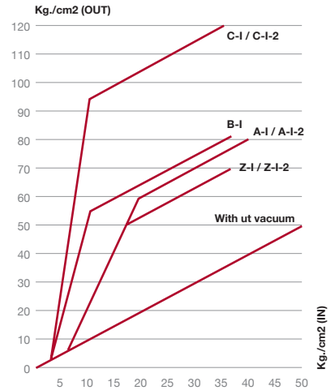
Remote vacuum boosters have no mechanical connection between the brake pedal and the booster. To operate, they require a vacuum source. These boosters can supplement braking power on vehicles with weak brakes, with high displacement brake circuits or on vehicles that tow heavy loads.

They can be offered as well as an alternative to the Power Brake System. Currently used in various models of a leading Telescopic Handler vehicle for which it provides progressive pedal feel, with the required conditions of pedal effort & stroke.

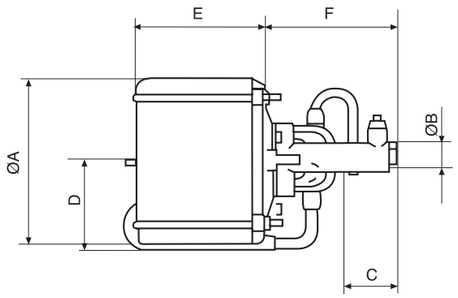
Installation graph



Curves



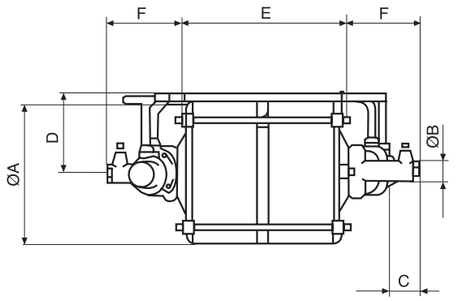
Single Brake Circuit



Outside dimensions

Booster	ØA	ØB	C (mm)	V (cc)	D (mm)	E (mm)	F (mm)
A-I	51/2"	5/8"	40	8	105	90	127
Z-I	7"	7/8"	50	19	105	121	137
B-I	8"	7/8"	82	32	130	170	164
C-I	9"	7/8"	82	32	155	170	164

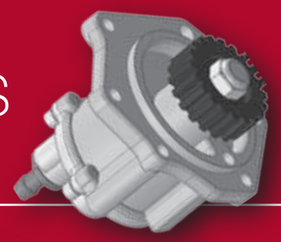
Double Brake Circuit



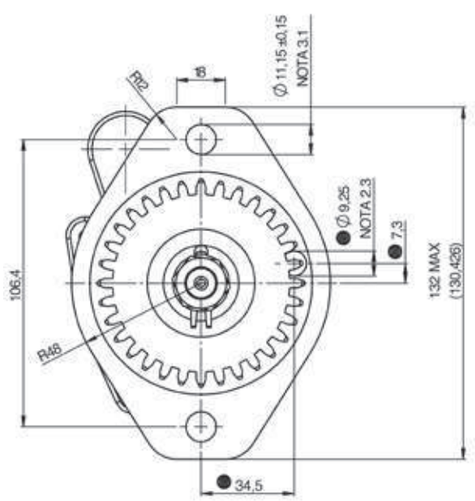
Outside dimensions

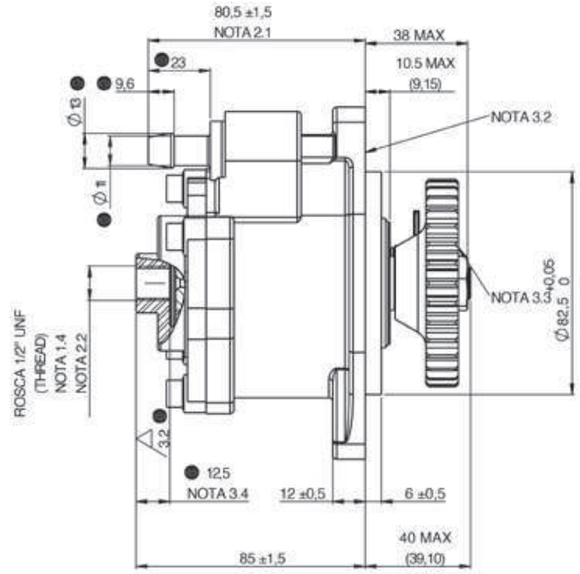
Booster	ØA	ØB	C (mm)	V (cc)	D (mm)	E (mm)	F (mm)
A-I-2	52/2"	5/8"	21,5	4,6	105	122	104
Z-I-2	7"	7/8"	50	19	114	250	134
C-I-2	9"	7/8"	50	19	153	250	134

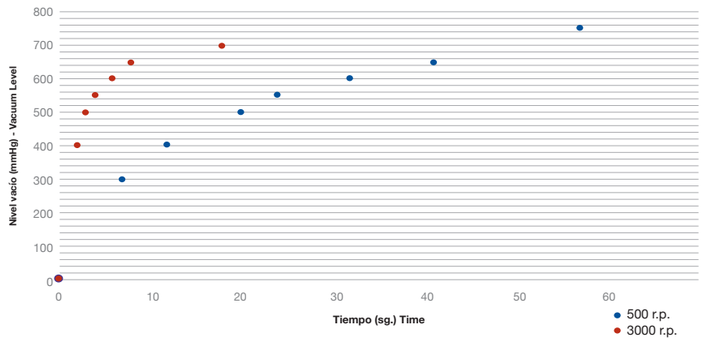
Exhauster Vacuum Pumps / Compressors



Rotary vacuum pump (JL)





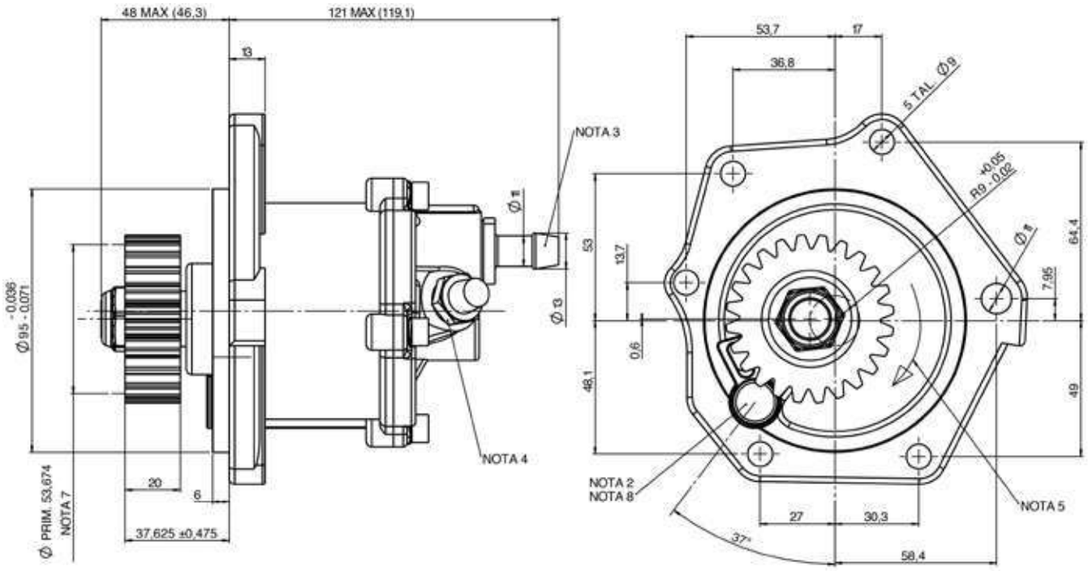


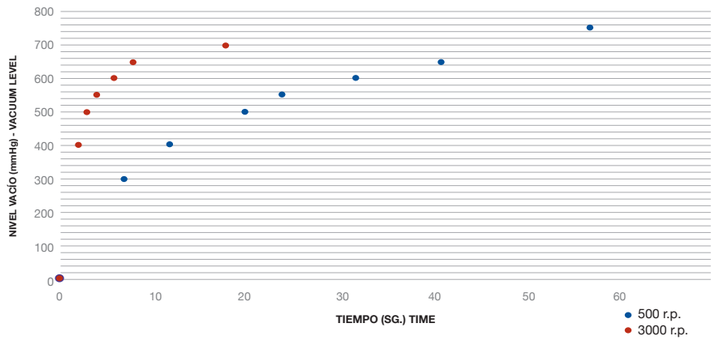
SPEED:
Normal running speed: 500 > 3000 r.p.m.
Máximum speed: 5500 r.p.m.

TORQUE:
Maxumum resisting torque: 3Nm.

OIL:
Temperature: -30º C > +120º C
Inlet pressure: 2-4 bares

Rotary vacuum pump (Q20)





SPEED:
Normal running speed: 500 > 3000 r.p.m.
Máximum speed: 5500 r.p.m.

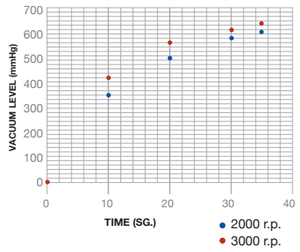
TORQUE:
Maxumum resisting torque: 3Nm.

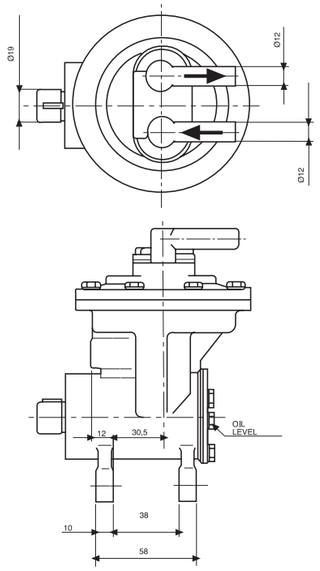
OIL:
Temperature: -30º C > +120º C
Inlet pressure: 2-4 bares

Diaphragm vacuum pump

SPEED/REVOLUCIONES:
Normal running speed: 3000 > 4000 r.p.m.
Máximum speed: 4500 r.p.m.

OIL / ACEITE:
Oil type: SAE 20-40

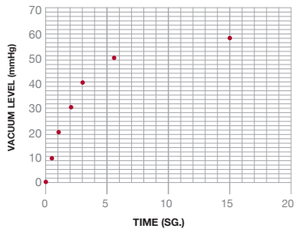


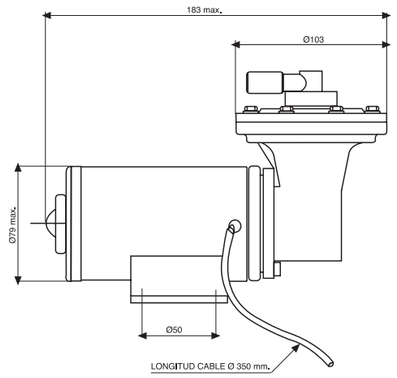


Electrical vacuum pump

Voltage: 12V
Min. Caudal: 3,2 m3/h.

ELECTRICAL ENGINE CHARACTERISTICS:
Speed: 1500 r.p.m.
Torque: 0,4

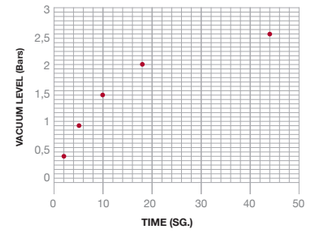


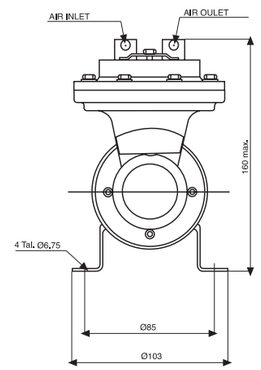


Compressor vacuum pump

Voltage: 12V
Min. Caudal: 3,2 m3/h.
Consumption: 2,5 bars > 3,5 A

ELECTRICAL ENGINE CHARACTERISTICS:
Speed: 1500 r.p.m.
Torque: 0,4

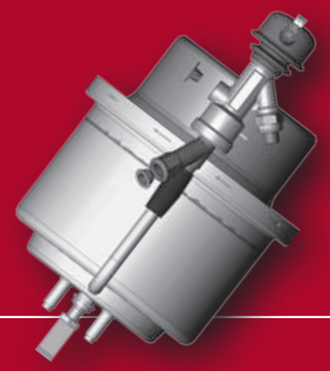




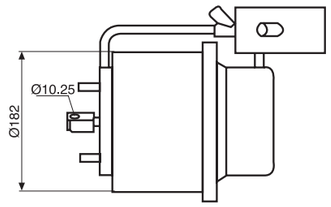
Parking brakes

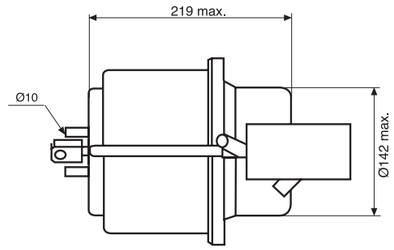
Pushing strengh produced by spring assembly.
Components of the equipment:

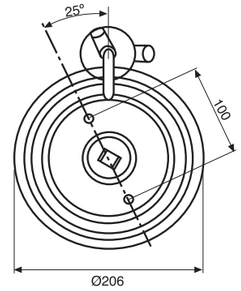
- Pushing assembly
- Vacuum chamber assembly
- Key valve

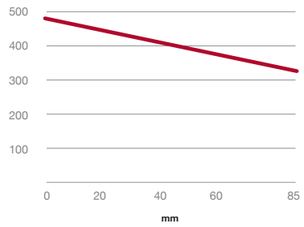


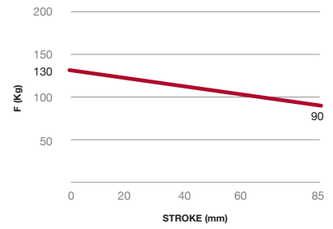
Parking brake Ø 206



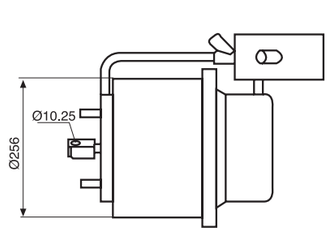


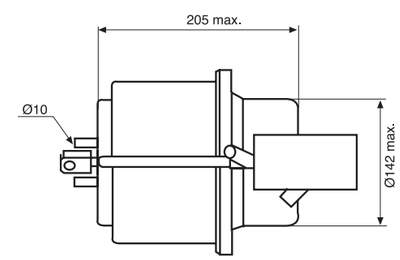


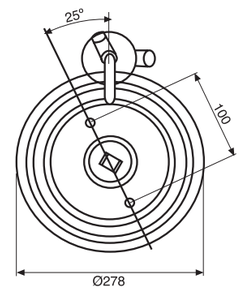


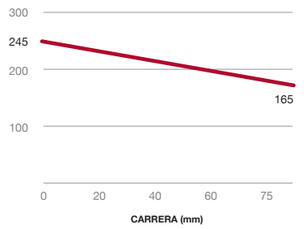


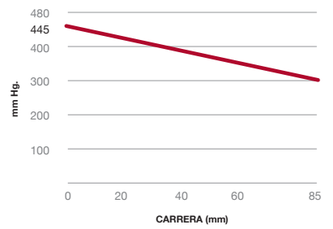
Parking brake Ø 278



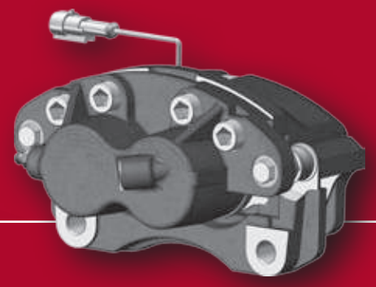




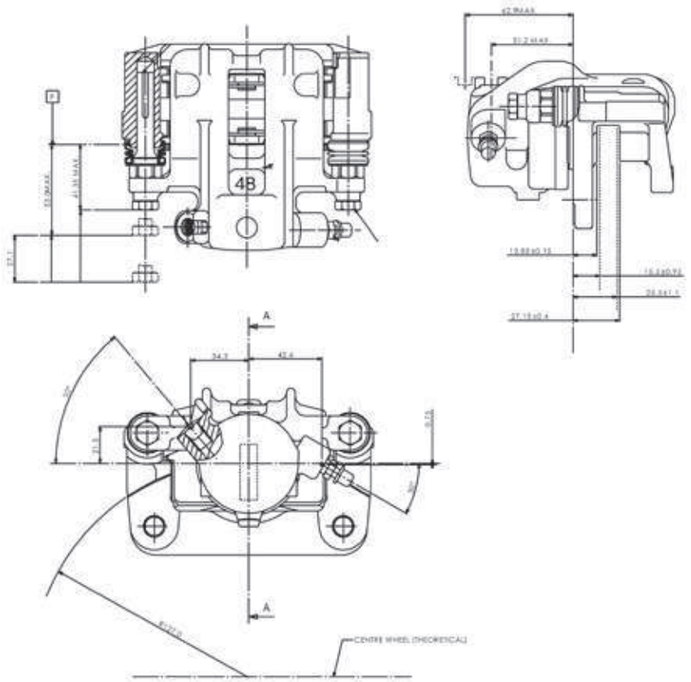




Brake Calipers



Caliper disc brake C48-10 / 10-V



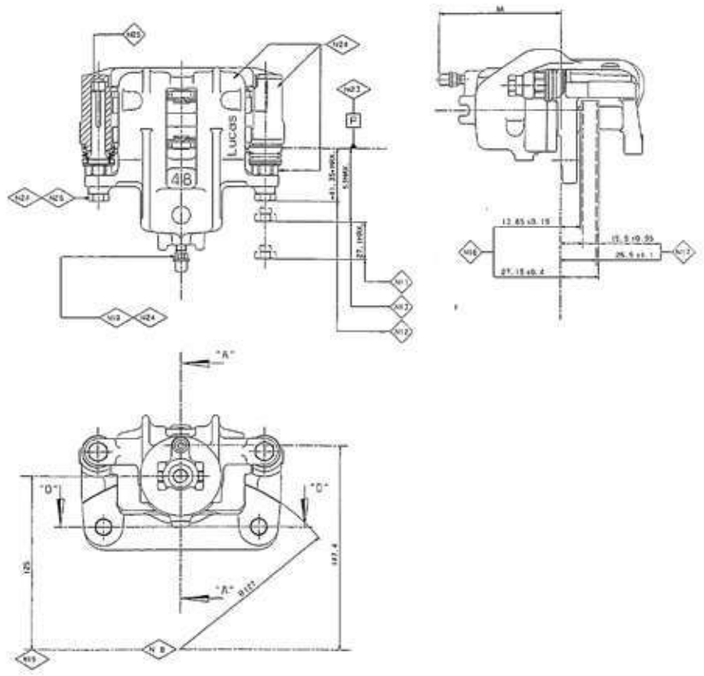
PART NUMBER:
6700000/ 6700001
6700050/ 6700051

PART NAME:
Disc Brake C48-10 / 10-V

PRODUCT CHARACTERISTICS:

Service brake Piston Diameter: 48 mm

Caliper disc brake C48-10 / 10-S



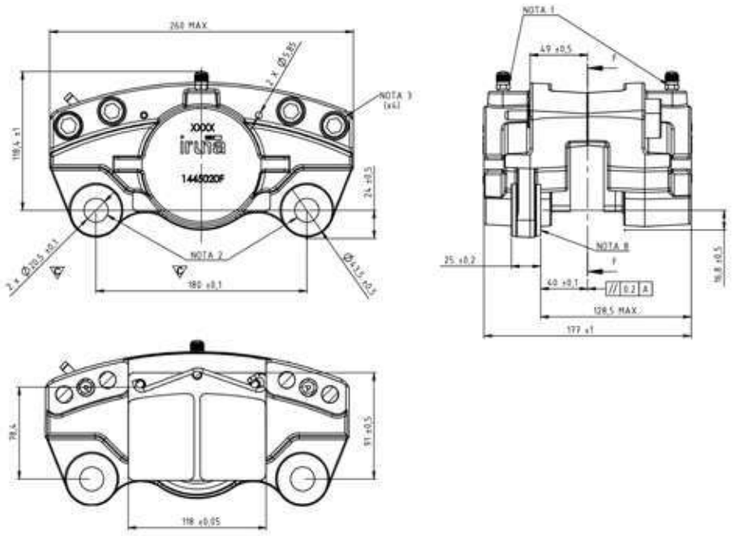
PART NUMBER:
6700002

PART NAME:
Disc Brake C48-10 / 10-S

PRODUCT CHARACTERISTICS:

Service brake Piston Diameter: 48 mm

Caliper Disc Brake C75



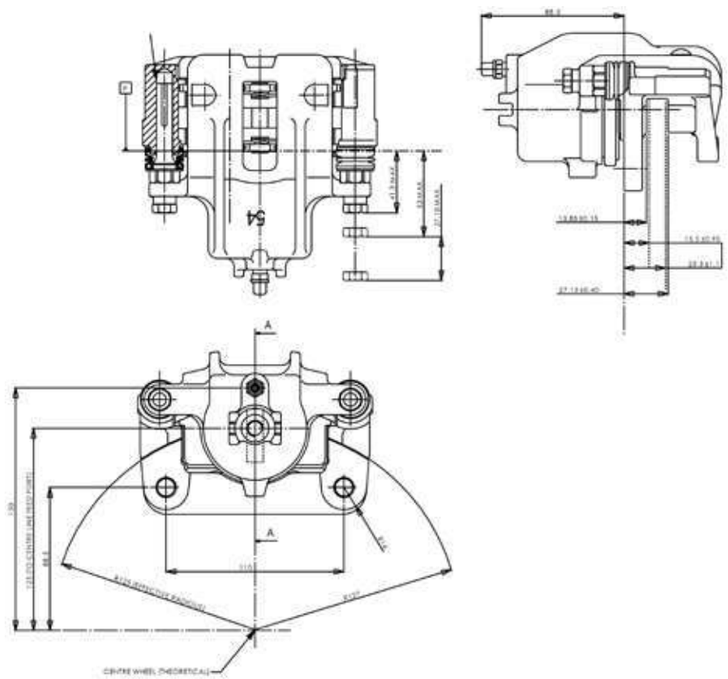
PART NUMBER:
6700023

PART NAME:
Disc Brake C75

PRODUCT CHARACTERISTICS:

Service brake Piston Diameter: 75 mm

Caliper disc brake C54-10/10



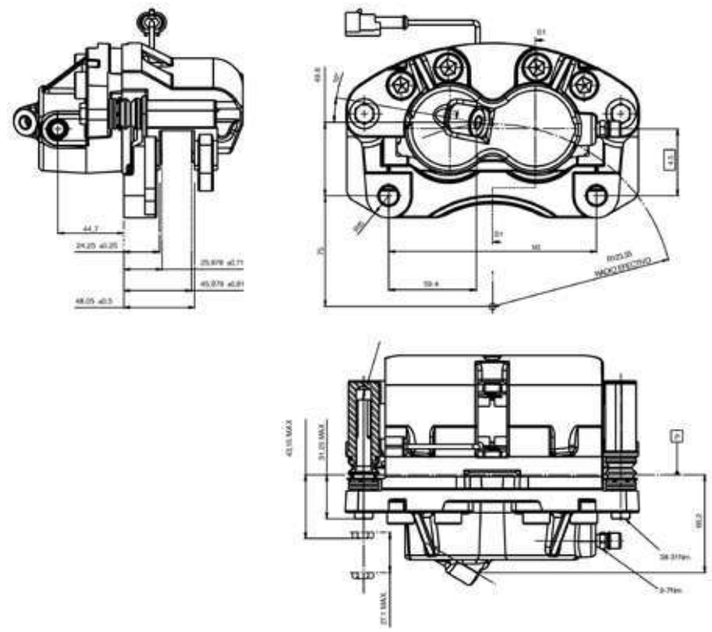
PART NUMBER:
6700028

PART NAME:
Disc Brake C54

PRODUCT CHARACTERISTICS:

Service brake Piston Diameter: 54 mm

Caliper disc brake C48+48-20/10



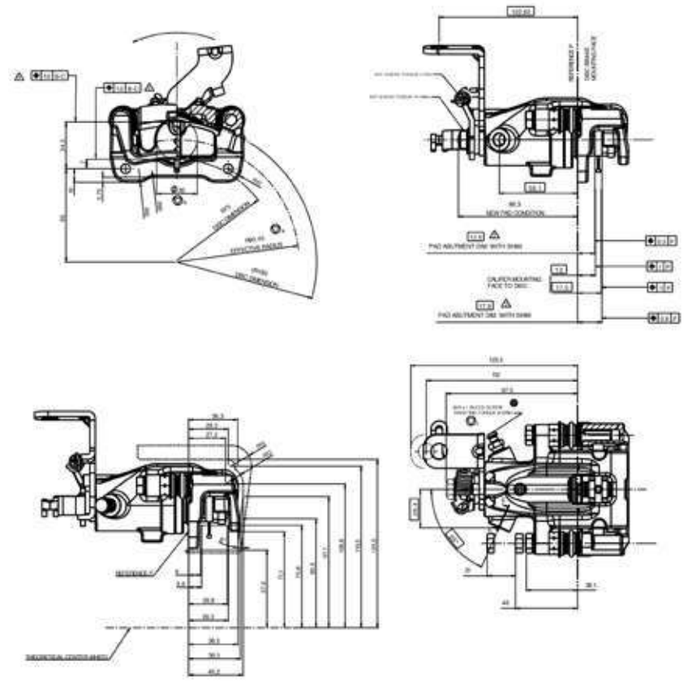
PART NUMBER:
6700039/40

PART NAME:
Disc Brake C48+48

PRODUCT CHARACTERISTICS:

Service brake Piston Diameter: 48+48 mm

Service Caliper Disc Brake C30-4.5/5.5 + Parking Brake



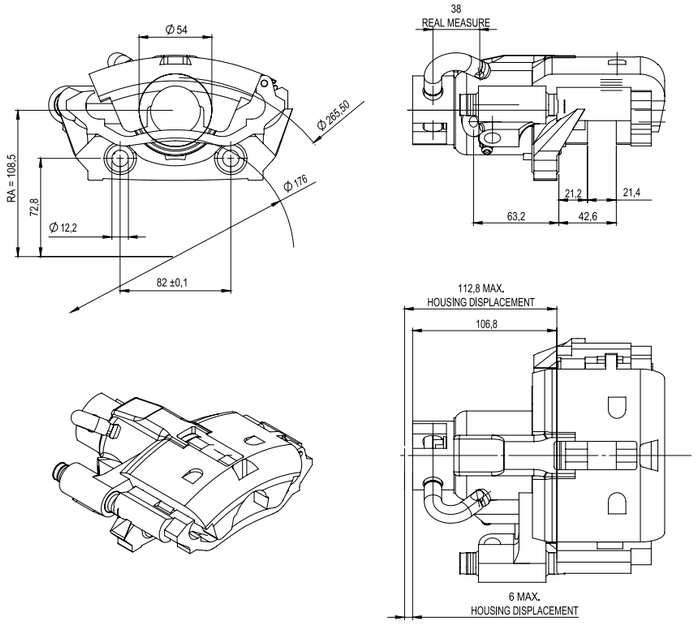
PART NUMBER:
6700043/44

PART NAME:
Disc Brake C30-4.5/5.5

PRODUCT CHARACTERISTICS:

Service brake 30 mm Piston Diameter + Parking Brake

Service Caliper Disc Brake C54 + Parking Brake

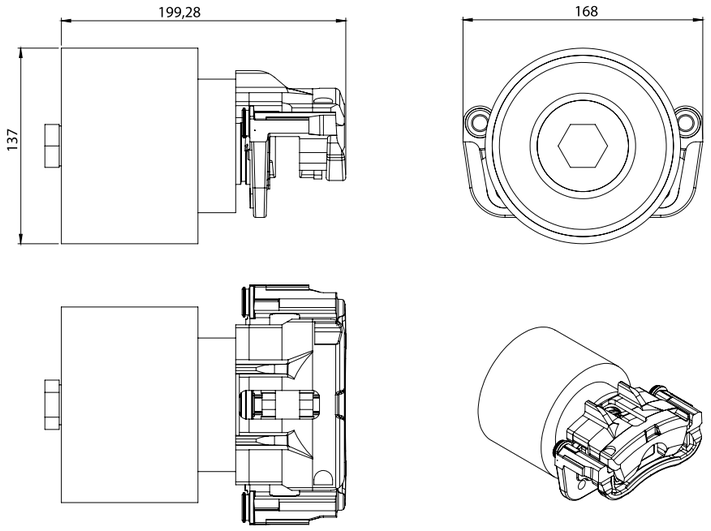


PART NUMBER:
P11.16 - Q

PART NAME:
Service Brake Caliper C54
+ Parking Brake

PRODUCT CHARACTERISTICS:
Service brake 30 mm Piston Diameter +
Parking Brake

Service Caliper Disc Brake C54 + Parking Sahr Manual Adjustment

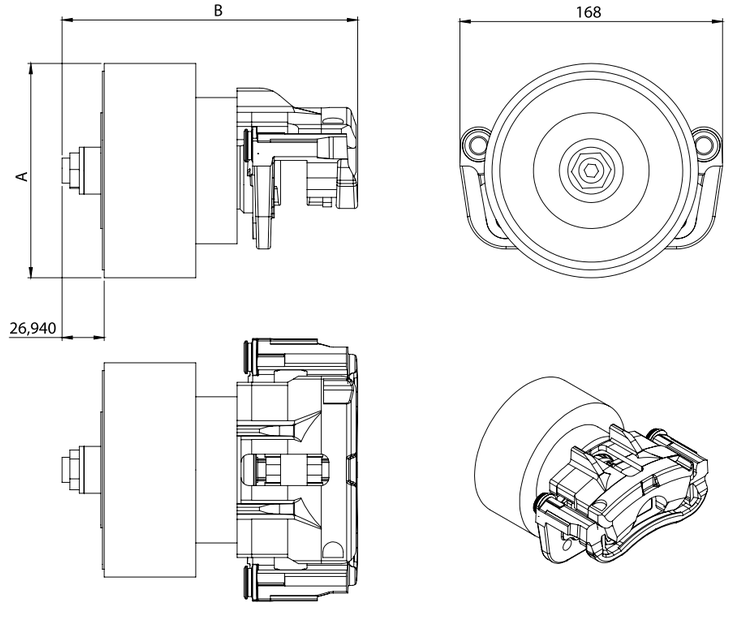


PART NUMBER:
P11.16 - J

PART NAME:
Service Brake Caliper C54
+ Parking Brake

PRODUCT CHARACTERISTICS:
Service brake 30 mm Piston Diameter
+ Parking Brake

Service Caliper Disc Brake C54 + Parking Sahr Auto Adjustment



PART NUMBER:
P11.16 - I

PART NAME:
Service Brake Caliper C54
+ Parking Brake

PRODUCT CHARACTERISTICS:
Service brake 30 mm Piston Diameter
+ Parking Brake

www.irunabrakes.com marketing@irunabrakes.com T +34 948 214 000 F +34 948 214 010

Brake for Wind Turbines

Over the past 15 years Iruna has become an excellent developer of brake systems for windturbines offering the entire range of rotor and yaw brake.

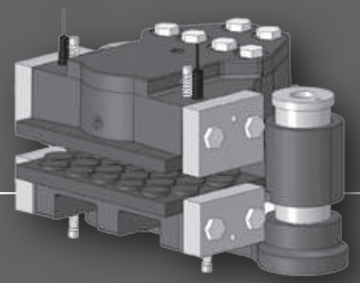
Iruna designs and produces standard and customized brake systems having a complete line of brake products specifically designed for wind turbines.

All our designs are according to the rules of German Lloyd. Our brake systems for wind turbines are fully manufactured in India and Spain.

Rotor Brakes

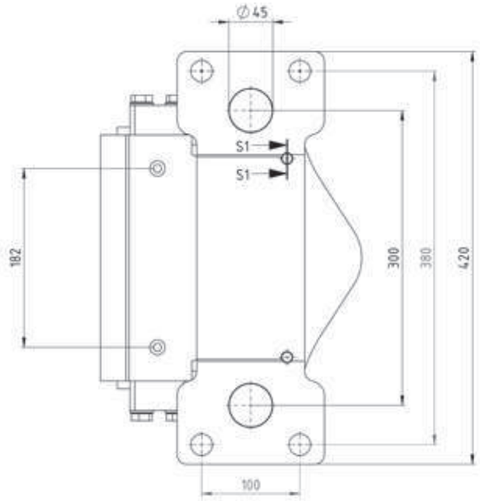
Yaw Brakes

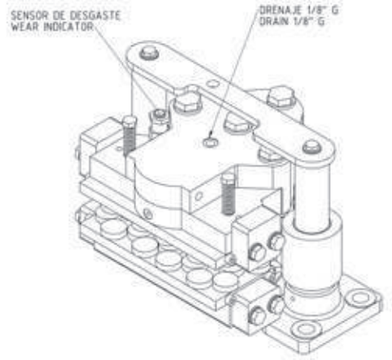
Rotor Brakes

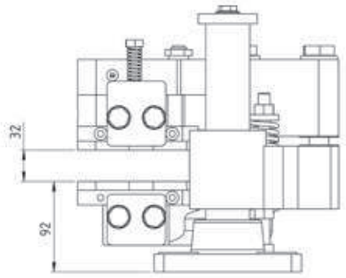


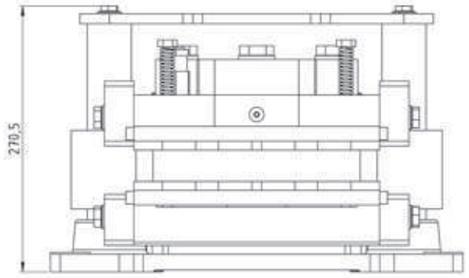
FIR-75-FC Rotor Brake

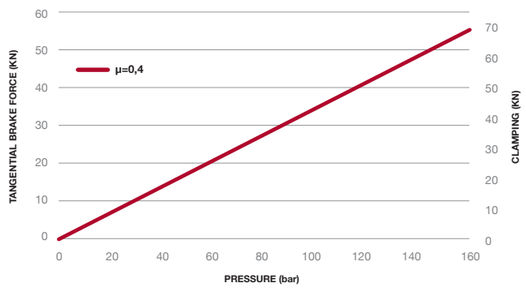
FIR-75-FC brake is an active brake, hydraulically applied. Designed as a floating caliper with one hydraulic cylinder. This enables the brake to self centre on the brake disc during operation.







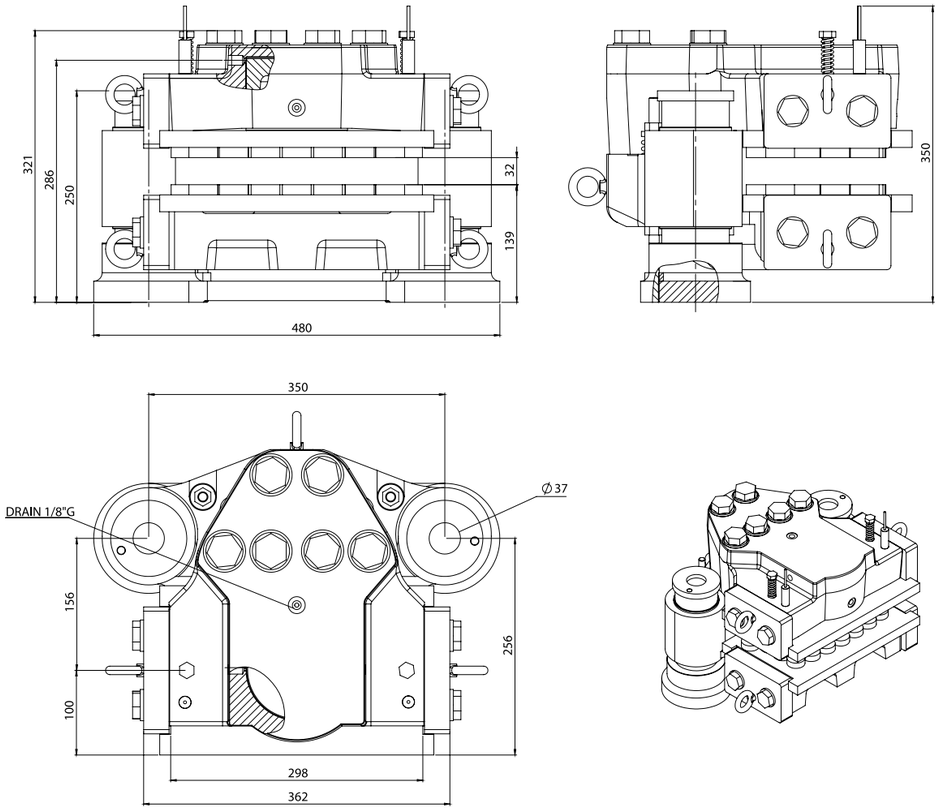


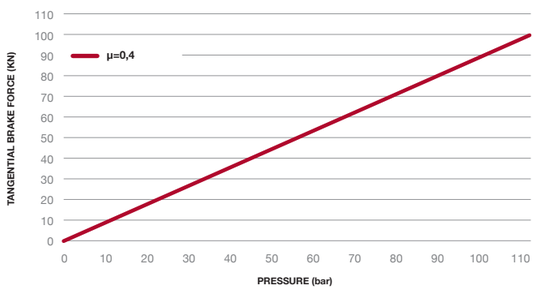


FIR-75-FC	
Piston diameter	75 mm
Piston Area	44,2 cm^2
Area per brake pad (sintherized)	200 cm^2
Friction coefficient	0,4
Operation pressure (max) bar	125
Max braking force (u=0,4)	44 KN
Temperature range	-40º C to 70º C
Oil volume - 1mm stroke	4,4 cm^2
Standard Disk Thickness	40 mm
Min. Disc diameter	500 mm
Floating range on axles	5 mm / 10 mm
Weight	70 kg.
Pressure conection port	2 ports, 1/4" B.S.P.
Drain conection port	1 port, 1/8" B.S.P.

FIR-120-FC Rotor Brake

FIR-120-FC brake is an active brake, hydraulically applied. Designed as a floating caliper with one hydraulic cylinder. This enables the brake to self-centre on the brake disc during operation.

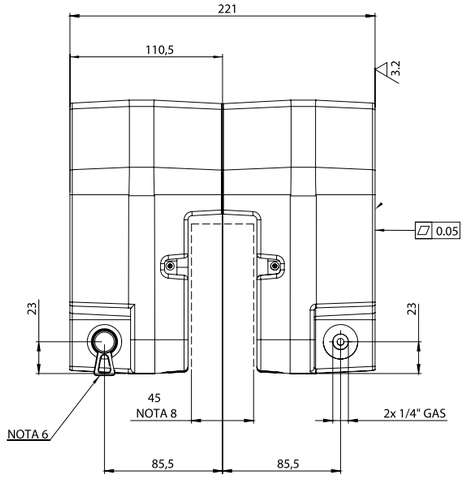


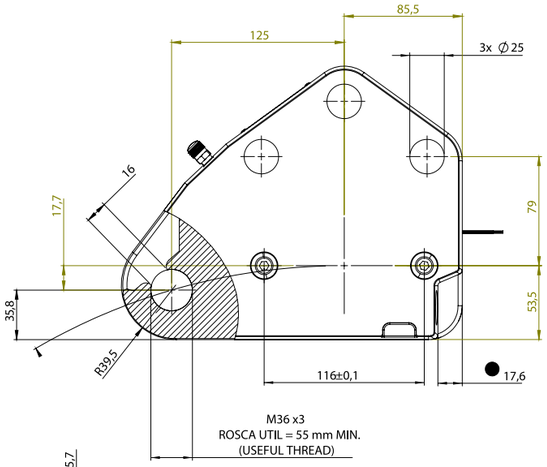


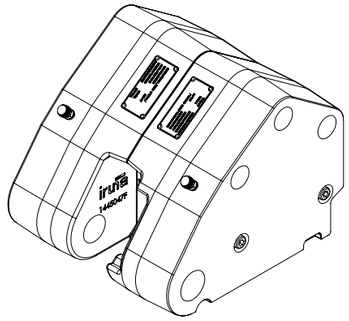
FIR-75-FC	
Piston diameter	120 mm.
Piston area	113 cm2
Area per brake pad (sintered)	363 cm2
Friction coefficient	0,4
Operation pressure (máx), bar	115
Máx braking force (u=0,4)	104 KN
Temperature range	-40º C to 70º C
Oil volume – 1mm stroke	11.3 cm3
Standard Disc thickness	40 mm.
Min. disc diameter	800 mm.
Floating range on axles Weight	5 mm / 10 mm
Weight	170 kg.
Pressure conection port	2 ports, 1/4" B.S.P.
Drain conection port	1 port, 1/8" B.S.P.

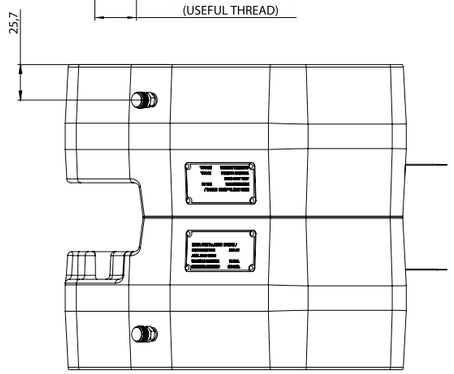
FIRX-1-75 Rotor Brake

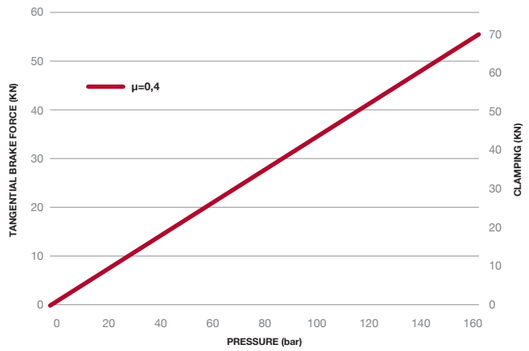
FIRX-1-75 brake is an active brake, hydraulically applied. Composed by two opposite halves containing one cylinder of 75 mm. each, it is commonly used for rotor brake applications in windturbines.





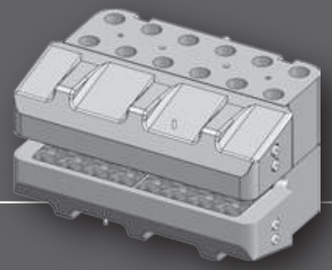






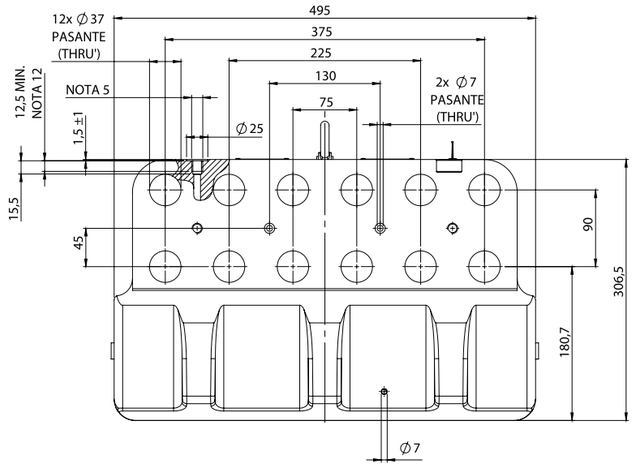
FIR-1-75	
Piston diameter	75 mm.
No of piston each side	1
Area per brake pad (organic)	50 cm2
Area per brake pad (sintherized)	50 cm2
Friction coefficient	0,4
Operation pressure (máx), bar	160
Máx braking force (u=0,4)	56 KN
Temperature range	-40º C to 70º C
Oil volume – 1mm stroke	4.4 cm3
Disc thickness	30 mm. – 70 mm.
Min. disc diameter	500 mm.
Weight	15 Kg

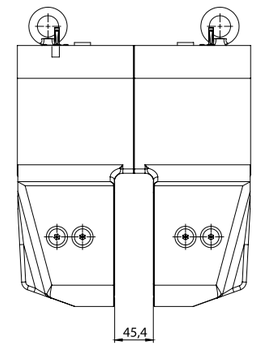
Yaw Brakes

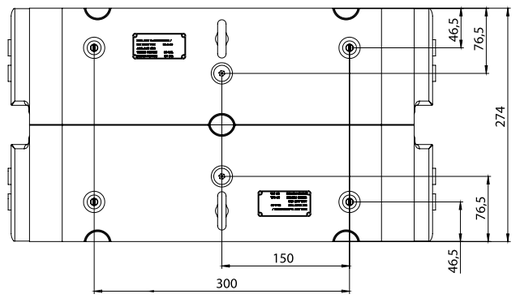


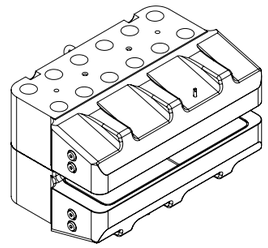
FIY-3-120 Yaw brake

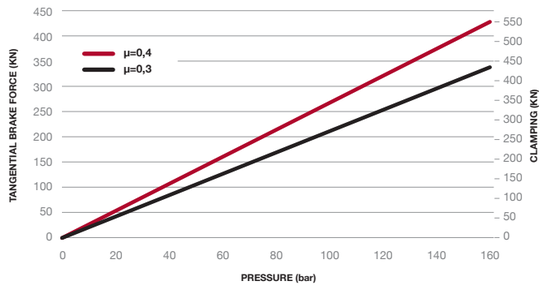
FIY-3-120 brake is an active brake, hydraulically applied. Composed by two opposite halves containing three cylinders of 120 mm. each, it is commonly used for yaw brake applications in windturbines.







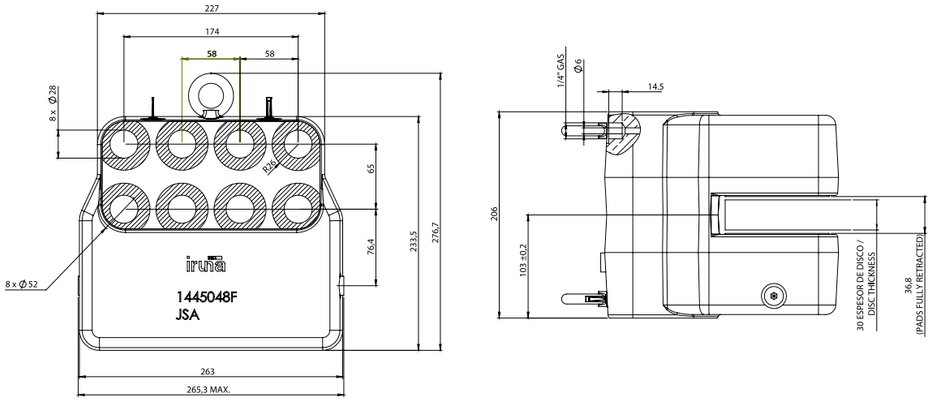


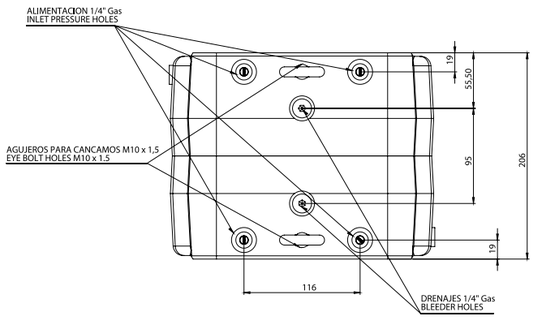


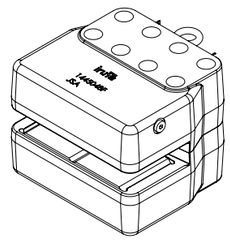
FIY-3-120	
Piston diameter	120 mm.
Number of pistons each side	3
Area per brake pad (organic)	560 cm2
Area per brake pad (ceramic)	450 cm2
Friction coefficient	0,4
Operation pressure (max), bar	180
Max braking force (u=0,4)	488,5 KN
Temperature range	-40º C to 70º C
Oil volume – 1mm stroke	68 cm3
Disc thickness	40 mm. to 60 mm.
Min. disc diameter	2000 mm.
Aprox. weight , pads included	180 Kg.

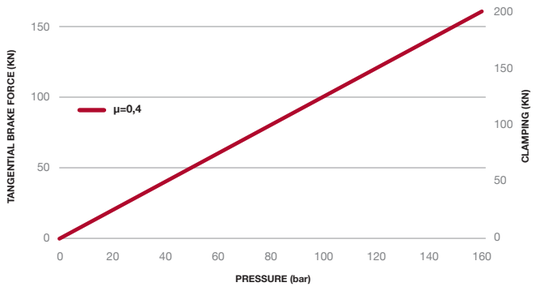
FIY-2-90 Yaw brake

FIY-2-90 brake is an active brake, hydraulically applied. Composed by two opposite halves containing two cylinders of 90 mm. each, it is commonly used for yaw brake applications in windturbines.









FIY-3-90	
Piston diameter	90 mm.
No of piston each side	2
Area per brake pad (organic)	282 cm2
Area per brake pad (sintherized)	225 cm2
Friction coefficient	0,4
Operation pressure (máx), bar	160
Máx braking force (u=0,4)	190 KN
Temperature range	-40º C to 70º C
Oil volume – 1mm stroke	25 cm3
Disc thickness	20 mm. – 70 mm.
Min. disc diameter	400 mm.
Weight	55 Kg

Others

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