



## BUFFERS FOR HOISTS & CRANES



Using the best features of the Reselgit® Compact and microcellular the company has defined and built several series of shock-absorbing bumpers that, in performance and scale, offering a full range for overall more functional solution to many problems stopping amortized in a variety of industries.

In addition to the significant damping effect, all models are warranted for a long operating time even in extremely degrading treatment, without the need for maintenance or adjustment.

In general, their small size, relatively to the possibility of stroke or arrow crushing admit that makes them easy to apply and, consistent with their costs, they can still offer excellent value for money solutions. The choice of the series can be determined by: amount of energy to be absorbed, dynamic reaction force bearable, encumbrance and weight of the bumper tolerable and duration in time. The determination of the specific type, in each series, should be performed only through the calculation of the energy to be absorbed, as a function of the impact speed (70% of nominal speed CNR-UNI-10021 if there are suitable systems for the slowdown) and mass tax on a bumper.

The series are named respectively:

- M Series - Bumpers microcellular Reselgit @
- P Series - Economic version of the buffers microcellular



## BUFFERS FOR HOISTS & CRANES

The series are named respectively:

- M Series - Bumpers microcellular Reselgit @
- P Series - Economic version of the buffers microcellular





## BUFFERS FOR HOISTS & CRANES

### M Series - Bumpers microcellular Reselgit

By exploiting certain unique characteristics of polyurethane Reselgit® Microcell: high compressibility, soft and high resilience intervention damping, are produced bumpers designed to absorb significant amounts of energy, while maintaining limited reaction force and having a weight of the item truly content.

Having noticed, from experiments, that these phenomena are more obvious than the smaller is the size of closed microcells, we formulated the Reselgit® in order to minimize the size of the microcells, thereby taking advantage of the best adiabatic compression (thermodynamic transformation without heat exchange with the external environment) gases contained in the microcells.

This reduction in size makes the properties of which are enhanced Reselgit® microcellular, achieving a further increase of the absorbed energy to increase in speed, while still contained the reaction force.

Although the maximum crushing capacity is 80% of the free length, it is recommended not to exceed 75% and, wanting to get a reaction force more contained, to restrict the crushing 55%. Indicatively in this case, l'energia absorbed will be 60% of its maximum value (see following table), while the reaction force will be 50% of the maximum reaction Bumper specific.

Tolerable temperature range, in operation from  $-40^{\circ}$  to  $+90^{\circ}$  C with peaks up to  $120^{\circ}$  C. The other characteristics are what has been said in general for the Reselgit®. On request you perform special types (example).

Symbol of the type: Mxxx / xxx letter M distinguishes the series. The first three digits indicate the diameter of the bumper in mm, share that also coincides interaxis drilling of the coupling plate (DIN 6912 - DIN 7984), and the three successive positions to indicate the height of the bumper bar, excluding the plate attack. For the version with screw type is the abbreviation Mxxx / xxx-G.







## BUFFERS FOR HOISTS & CRANES

### **P Series - Economic version of the buffers microcellular**

The common microcellular polyurethane elastomer, used for the production of this series of economic buffers, differs from our elastomer Reselgit® (Orange) to a lower resistance to hydrolysis, to temperature and aging in general. It follows that its effectiveness is limited by the temperatures of -20 ° C and +80 ° C, while enduring temperatures up to -40 ° C and peaks up to +120 ° C, also the aging process could be very rapid in marine climates, tropical or outdoor anyway. One can say that the difference in resistance between the shock absorbers of the type M Reselgit® and P-type can be compared for similarity, the difference in oxidation resistance between a stainless steel and galvanized steel.

Generally this material, compared to the Reselgit® and qualitatively less efficient versions, is recognizable on the market for the low price of the items manufactured with it.

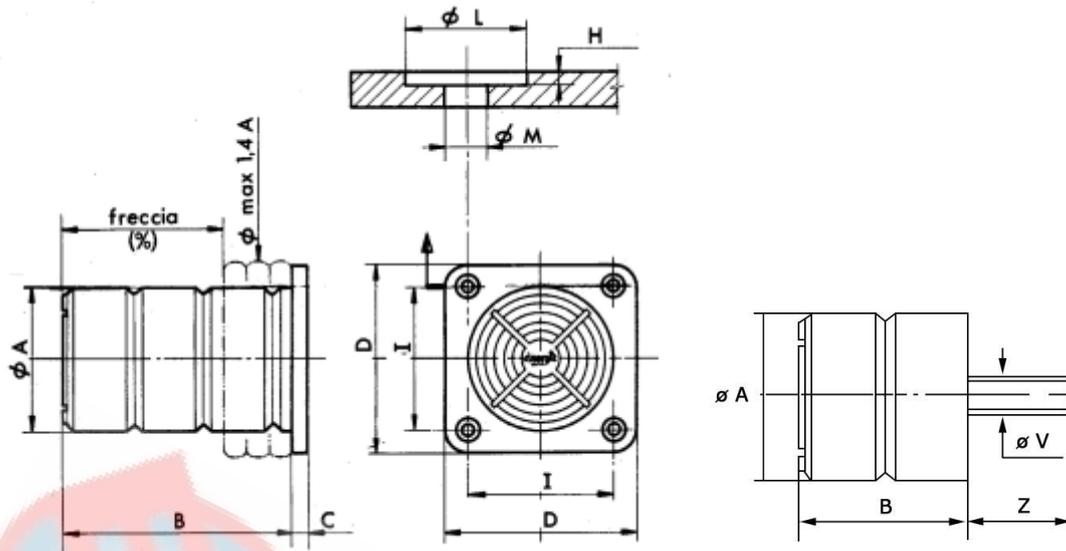
The buffers Series P (yellow) are not cured on steel plate, as in the M-Series, but are fitted with steel reinforcement embedded in the square base of the bumper, casting into one solution: it is therefore appropriate that the fixing is carried on a support plate and not on the frame. For the determination of the type of bumper suited to the needs of use apply the same criteria and choice of expedients indicated for the M series in Reselgit® since the dimensions and the mechanical performance initials are identical.

Type code: Pxxx / xxx letter P marks the series. The first three digits indicate the diameter of the bumper in mm, share that also coincides interaxis drilling of the coupling plate, and the three successive positions to indicate the height of the bumper bar, excluding the attachment plate. For the version with screw type is the abbreviation Pxxx / xxx-G.





## BUFFERS FOR HOISTS & CRANES



Type	E= nominal energy absorbed in daNm F= dynamic reaction in daN for deflection f = 70% and speed:					Screw sV Z	Dimensions mm								Weight kg	
	static	60 m/min	120 m/min	180 m/min	240 m/min		A	B	C	D	I	L	M	H		
P 080/080	E	30	40	51	80	140	M12 35	80	80	12	100	80	-	11	-	0.302
	F	2500	2250	2250	3200	4300										
P 080/120	E	45	55	74	120	218	M12 35	100	150	12	130	100	-	13	-	0.34
	F	4200	3550	3550	5050	6700										
P 100/100	E	55	73	100	165	300	M12 35	100	150	12	130	100	-	13	-	0.56
	F	4200	3550	3550	5050	6700										
P 100/150	E	82	110	150	240	430	M12 35	125	190	12	160	125	-	13	-	0.86
	F	6100	5500	5500	7800	10500										
P 125/125	E	110	140	200	320	520	M12 35	160	240	14	200	160	26	17	4	1.960
	F	11000	8900	8900	13000	17500										
P 125/190	E	160	210	305	470	750	M12 40	200	300	14	250	200	33	22	5	4.1
	F	16500	14000	14000	20100	27000										
P 160/160	E	210	275	395	650	1200	M24 80	250	375	16	320	250	33	22	7	7
	F	11000	8900	8900	13000	17500										
P 160/240	E	310	410	590	980	1700	NO	315	475	16	400	315	33	22	7	15.5
	F	40500	35000	35000	51000	68000										
P 200/200	E	440	570	800	1350	2400	NO	400	600	22	500	400	39	26	8	31
	F	16500	14000	14000	20100	27000										
P 200/300	E	650	850	1200	1900	3500	NO	400	600	22	500	400	39	26	8	43
	F	26000	23000	23000	31500	42000										
P 250/250	E	750	1050	1460	2500	4100	NO	400	600	22	500	400	39	26	8	31
	F	26000	23000	23000	31500	42000										
P 250/375	E	1100	1550	2200	3800	6000	NO	400	600	22	500	400	39	26	8	43
	F	40500	35000	35000	51000	68000										
P 315/315	E	1650	2100	3000	4950	8000	NO	400	600	22	500	400	39	26	8	43
	F	40500	35000	35000	51000	68000										
P 315/475	E	2400	3100	4500	7200	11800	NO	400	600	22	500	400	39	26	8	43
	F	63000	55000	55000	80500	108000										
P 400/400	E	3400	4250	5950	9600	16200	NO	400	600	22	500	400	39	26	8	43
	F	63000	55000	55000	80500	108000										
P 400/600	E	4900	6300	9000	14500	24000	NO	400	600	22	500	400	39	26	8	43
	F	63000	55000	55000	80500	108000										



## BUFFERS FOR HOISTS & CRANES

### Comparison between M-Series and P-Series

#### RESELGIT® - M Series



The Reselgit®, Urethane elastomer, it offers considerable advantages for the physical properties of resistance to vegetable oils, minerals and aromatic hydrocarbons, petrol, diesel and most common solvents and alcohols. It has an excellent resistance to aging under the most severe environmental conditions: in the presence of ozone, ultraviolet rays, marine atmosphere; enduring good hydrolysis even in tropical climates. The Reselgit® tolerate a considerable temperature range. Begins to stiffen at below -40° C and brittle over the -60 ° C, totally regaining its characteristics at room temperature. In operation, the material can withstand temperatures of +95° C, with peaks up to 120 ° C, maintaining a good part of its characteristics, is also self-extinguishing. The degree of safety for these artifacts is 9 for static load and dynamic load to 7, taking into account any slippages for speed effect.

#### POLYURETHANE "P" - P Series



It can use a polyurethane cheaper that differs from the previous to a lower resistance to hydrolysis, to temperature and aging in general. It follows that its effectiveness is limited by the temperatures of +80° C and -20 ° C, while enduring the temperatures up to -40 ° C without embrittlement.

The degree of safety, in this case, is 3 to 2 for static load and dynamic load taking into account any slippages for speed effect.

The aging process could be very rapid in marine climates, tropical or outdoor anyway. It can be said that the difference between the Reselgit® M Series and the polyurethane used in the P series is similar to the difference between a stainless steel and a galvanized steel, this is because said resistance is not entirely intrinsic to the raw material, but conferred by specific additives.



## BUFFERS FOR HOISTS & CRANES

### AVERAGE VALUES IN COMPACT FORM

	M Series	P Series
Shore A hardness degrees	80	80
Specific weight g / cm <sup>3</sup>	1.06	1.03
Breaking load in traction daN / cm <sup>2</sup>	200	100
Elongation at break%	750	400
Resilience%	80	50
Tear strength daN / cm	12.3	4
Abrasion resistance mm <sup>3</sup>	45	-
Tensile modulus at 300% elongation daN / cm <sup>2</sup>	40	25

### AVERAGE VALUES IN THE FORM *microcellular*

	M Series	P Series
Specific weight g / cm <sup>3</sup>	0.50	0.50
Breaking load in traction daN / cm <sup>2</sup>	65	25
Elongation at break%	350	200
Resilience%	57	-
Compression set (Method B - after 22h at 70 ° C)%	5	-



## BUFFERS FOR HOISTS & CRANES

