

Adjustable Series Hydraulic Shock Absorbers

ECO OEM Small Bore Series

ECO OEM 0.1M → ECO (LR)OEM 1.0M Series

Technical Data

Standard



*Note: A₁ and E₁ apply to button models. One Hex Jam Nut included with every shock absorber.

Catalog No./Model	(S) Stroke mm	Optimal Velocity Range m/s	E _T Max. Nm/c	E _T C Max. Nm/hr	F _p Max. Reaction Force N	Nominal Coil Spring Force		F _D Max. Propelling Force N	Mass g
						Extended N	Compressed N		
ECO OEM .1M (B)	7,0	0,3-3,30	6,0	12 400	1 220	2,2	4,5	350	28
ECO OEM .15M (B)	10,0	0,3-3,30	6,0	19 000	890	3,5	7,5	350	56
ECO OEM .25M (B)	10,0	0,3-3,30	6,0	20 000	890	3,5	7,5	350	56
ECO LROEM .25M (B)	10,0	0,08-1,30	6,0	20 000	890	3,5	7,5	440	56
ECO OEM .35M (B)	12,0	0,3-3,30	17,0	34 000	2 000	4,5	9,8	530	85
ECO LROEM .35M (B)	12,0	0,08-1,30	17,0	34 000	2 000	4,5	9,8	890	85
ECO OEM .5M (B)	12,7	0,3-4,50	28,0	32 000	3 500	5,8	12,4	670	141
ECO LROEM .5M (B)	12,7	0,08-1,30	28,0	32 000	3 500	8,9	17,0	1 120	141
ECO OEM 1.0M (B)	25,0	0,3-3,30	74,0	70 000	4 400	13,0	27,0	1 330	285
ECO OEM 1.0MF (B)	25,0	0,3-3,30	74,0	70 000	4 400	13,0	27,0	1 330	285
ECO LROEM 1.0M (B)	25,0	0,08-1,30	74,0	70 000	4 400	13,0	27,0	2 016	285
ECO LROEM 1.0MF (B)	25,0	0,08-1,30	74,0	70 000	4 400	13,0	27,0	2 016	285

Catalog No./Model	A mm	A ₁ mm	C mm	D mm	E ₁ mm	F mm	G mm	H mm	J mm	WF mm	WL mm
ECO OEM 0.1M (B)	57,0	67,0	M10 x 1.0	3,0	8,6	49,4	8,6	10,2	—	—	—
ECO OEM 0.15M (B)	81,8	91,7	M12 x 1.0	3,3	8,6	71,4	10,9	14,2	—	11,0	9,7
ECO (LR)OEM .25M (B)	81,8	91,2	M14 x 1.5	3,3	11,2	71,4	10,9	14,2	—	12,0	12,7
ECO (LR)OEM .35M (B)	100,6	110,7	M16 x 1.5	4,0	11,2	87,4	11,2	14,5	0,5	14,0	12,7
ECO (LR)OEM .5M (B)	98,6	110,5	M20 x 1.5	4,8	12,7	84,1	16,0	17,0	—	18,0	12,7
ECO (LR)OEM 1.0M (B)	130,0	142,7	M27 x 3.0	6,4	15,7	104,0	22,0	14,0	4,6	23,0	12,7
ECO (LR)OEM 1.0MF (B)	130,0	142,7	M25 x 1.5	6,4	15,7	104,0	22,0	14,0	4,6	23,0	12,7

Notes: 1. All shock absorbers will function satisfactorily at 5% of their maximum rated energy per cycle. If less than 5%, a smaller model should be specified.
 2. For mounting accessories, see pages 22-23.
 3. (B) indicates button model of shock absorber. Buttons cannot be added to non-button models or removed from button models ECO OEM .1M to ECO OEM 1.0M.

Adjustable Series Hydraulic Shock Absorbers

ECO OEM Small Bore Series

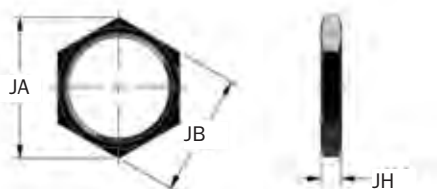
ECO
OEM

ECO OEM 0.1M → ECO (LR)OEM 1.0M Series

Accessories

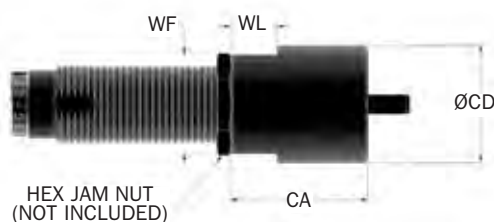
Jam Nut (JN)

*Note: One Hex Jam Nut included with every shock absorber.



Catalog No./Model	Part Number	Model Ref	JA mm	JB mm	JH mm	Mass g
JN M10 x 1	J223840167	ECO OEM 0.1M (B)	15,0	13,0	3,2	2
JN M12 x 1	J223841035	ECO OEM .15M (B)	17,0	15,0	4,0	2
JN M14 x 1.5	J223842165	ECO (LR)OEM .25M (B)	19,7	17,0	4,0	3
JN M16 x 1.5	J224055035	ECO (LR)OEM .35M (B)	20,0	19,0	6,0	5
JN M20 x 1.5	J223844035	ECO (LR)OEM .5M (B)	27,7	24,0	4,6	9
JN M27 x 3	J124059034	ECO (LR)OEM 1.0M (B)	37,0	32,0	4,6	15
JN M25 x 1.5	J223846035	ECO (LR)OEM 1.0MF (B)	37,0	32,0	4,6	15

Stop Collar (SC)



Catalog No./Model	Part Number	Model Ref	CA mm	CD mm	WF mm	WL mm	Mass g
Δ SC M10 x 1	M923840171	ECO OEM 0.1M (B)	19,0	14,0	—	—	11
Δ SC M12 x 1	M923841058	ECO OEM 0.15M (B)	19,0	16,0	14,0	9,0	14
Δ SC M14 x 1.5	M923842171	ECO (LR)OEM .25M (B)	25,4	19,0	19,0	12,0	28
Δ SC M16 x 1.5	M924055199	ECO (LR)OEM .35M (B)	25,4	19,0	—	—	28
Δ SC M20 x 1.5	M924057058	ECO (LR)OEM .5M (B)	38,0	25,4	22,0	12,0	63
Δ SC M27 x 3	M923846170	ECO (LR)OEM 1.0M (B)	50,8	38,0	32,0	15,0	215
Δ SC M25 x 1.5	M923846171	ECO (LR)OEM 1.0MF (B)	50,8	38,0	32,0	15,0	215

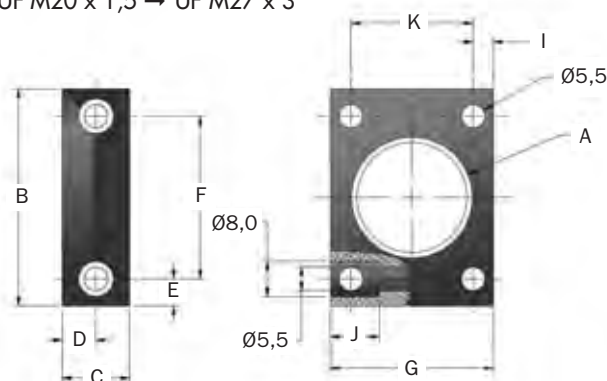
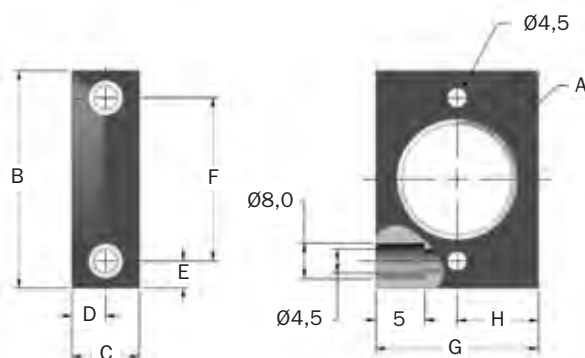
Notes: 1. *Do not use with urethane striker cap.

2. Δ = Non-standard lead time items, contact ITT Enidine.

Universal Retaining Flange (Small Bore) (UF)

UF M10 x 1 → UF M16 x 1,5

UF M20 x 1,5 → UF M27 x 3



Catalog No./Model	Part Number	Model Ref	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
Δ UF M10 x 1	U16363189	ECO OEM 0.1M (B)	M10 x 1	38,0	12,0	6,0	6,0	25,5	25,0	12,5	—	5	—
Δ UF M12 x 1	U15588189	ECO OEM .15M (B)	M12 x 1	38,0	12,0	6,0	6,0	25,5	25,0	12,5	—	5	—
Δ UF M14 x 1.5	U13935143	ECO (LR)OEM .25M (B)	M14 x 1,5	45,0	16,0	8,0	5,0	35,0	30,0	15,0	—	5	—
Δ UF M16 x 1.5	U19018143	ECO (LR)OEM .35M (B)	M16 x 1,5	45,0	16,0	8,0	5,0	35,0	30,0	15,0	—	—	—
Δ UF M20 x 1.5	U12646143	ECO (LR)OEM .5M (B)	M20 x 1,5	48,0	16,0	8,0	6,5	35,0	35,0	—	4,75	11,4	25,5
Δ UF M25 x 1.5	U13004143	ECO (LR)OEM 1.0MF (B)	M25 x 1,5	48,0	16,0	8,0	6,5	35,0	35,0	—	4,75	11,4	25,5
Δ UF M27 x 3	U12587143	ECO (LR)OEM 1.0M (B)	M27 x 3	48,0	16,0	8,0	6,5	35,0	35,0	—	4,75	11,4	25,5

Notes: 1. Δ = Non-standard lead time items, contact ITT Enidine.

2. All dimensions in millimeters

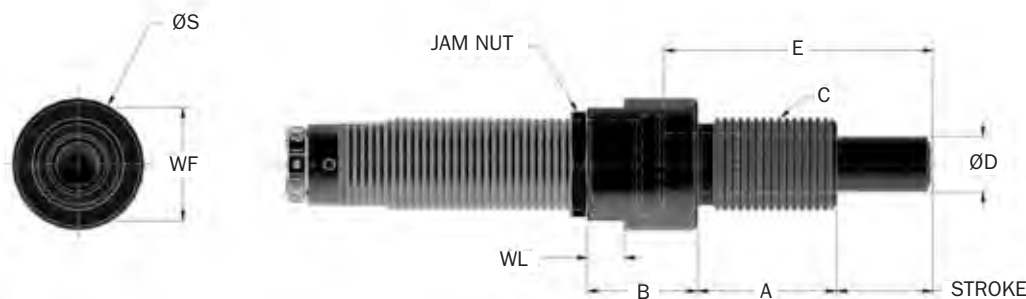
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Accessories

Side Load Adaptor (SLA)



Catalog No./Model	Part Number	Model Ref	Stroke mm	A mm	B mm	C mm	D mm	E mm	S mm	WF mm	WL mm
SLA 10MF	SLA 33457	ECO OEM 0.1M	6,4	12	11	M10 x 1	5	21,9	13	11	4,0
SLA 12MF	SLA 33299	ECO OEM .15M	10,0	18	14	M12 x 1	6	32,4	16	13	7,0
Δ SLA 14MC	SLA 34756	ECO (LR)OEM .25M	10,0	18	16	M14 x 1,5	8	34,3	18	15	7,0
SLA 16 MC	SLA 34757	ECO (LR)OEM .35M	12,7	20	16	M16 x 1	8	39,2	20	17	7,0
SLA 20 MC	SLA 33262	ECO (LR)OEM .5M	12,7	24	14	M20 x 1,5	11	41,5	25	22	7,0
SLA 25 MF	SLA 33263	ECO (LR)OEM 1.0MF	25,0	38	30	M25 x 1,5	15	73,2	36	32	10,0
SLA 27 MC	SLA 33296	ECO (LR)OEM 1.0M	25,0	38	30	M27 x 3	15	73,2	36	32	10,0

Notes: 1. Maximum sideload angle is 30°.

2. Δ = Non-standard lead time items, contact ITT Enidine.

Clevis Mount



Catalog No./Model	(S) Stroke mm	L mm	M $+0.10/-0.000$ mm	N $+0.10/-0.000$ mm	P $+0.000/-0.010$ mm	Q mm	S mm	V mm	W mm	X mm	Mass g
Δ ECO OEM 1.0M CMS	25	162,1	3,58 $+0,13/0$	6,02 $+0,13/0$	9,5 $0/-0,3$	6,4	31,8	3,2	9,0	6,4	394

Notes: 1. Maximum sideload angle is 30°.

2. Δ = Non-standard lead time items, contact ITT Enidine.

Adjustable Series Hydraulic Shock Absorbers

ECO OEM Small Bore Series

ECO OEM 1.15M → ECO (LR)OEM 1.25M Series

Technical Data

Standard



*Note: A₁ and E₁ apply to urethane striker cap accessory.

Catalog No./Model	(S) Stroke mm	Optimal Velocity Range m/s	E _T Max. Nm/c	E _T C Max. Nm/hr	F _p Max. Reaction Force N	Nominal Coil Spring Force		F _D Max. Propelling Force N	Mass g
						Extended N	Compressed N		
△ ECO OEM 1.15M x 1	25,0	0,3-3,30	195,0	75 700	11 120	56,0	89,0	2 220	482
△ ECO (LR)OEM 1.15M x 1	25,0	0,08-2,0	195,0	75 700	11 120	56,0	89,0	3 335	482
△ ECO OEM 1.15M x 2	50,0	0,3-3,30	385,0	98 962	11 120	31,0	89,0	2 220	708
△ ECO (LR)OEM 1.15M x 2	50,0	0,08-2,0	385,0	98 962	11 120	31,0	89,0	3 335	708
ECO OEM 1.25M x 1	25,0	0,3-3,30	195,0	100 000	11 120	56,0	89,0	2 220	567
ECO (LR)OEM 1.25M x 1	25,0	0,08-2,0	195,0	100 000	11 120	56,0	89,0	3 335	567
ECO OEM 1.25M x 2	50,0	0,3-3,30	385,0	111 400	11 120	31,0	89,0	2 220	737
ECO (LR)OEM 1.25M x 2	50,0	0,08-2,0	385,0	111 400	11 120	31,0	89,0	3 335	737

Catalog No./Model	A mm	A ₁ mm	C mm	D mm	E mm	E ₁ mm	F mm	G mm	H mm	J mm	WF mm	WL mm
△ ECO (LR)OEM 1.15M x 1	150,0	155,5	M33 x 1,5	9,5	29,0	30,5	97,0	28,0	14,0	5,3	30,0	16,0
△ ECO (LR)OEM 1.15M x 2	217,0	222,0	M33 x 1,5	9,5	29,0	30,5	138,0	28,0	14,0	5,3	30,0	16,0
ECO (LR)OEM 1.25M x 1	150,0	155,5	M36 x 1,5	9,5	29,0	30,5	97,0	28,0	14,0	5,3	33,0	16,0
ECO (LR)OEM 1.25M x 2	217,0	222,0	M36 x 1,5	9,5	29,0	30,5	138,0	28,0	14,0	5,3	33,0	16,0

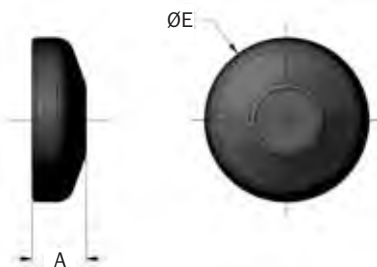
Notes: 1. All shock absorbers will function satisfactorily at 5% of their maximum rated energy per cycle. If less than 5%, a smaller model should be specified.

2. For mounting accessories, see pages 25-26.

3. Urethane striker caps are available as accessories for models ECO OEM 1.15M x 1 to ECO OEM 1.25M x 2.

4. △ = Non-standard lead time items, contact ITT Enidine.

Urethane Striker Cap (USC)



Catalog No./Model	Part Number	Model Ref	A mm	E mm	Mass g
UC 8609	C98609079	ECO (LR)OEM 1.15/1.25M	10,0	30,5	6

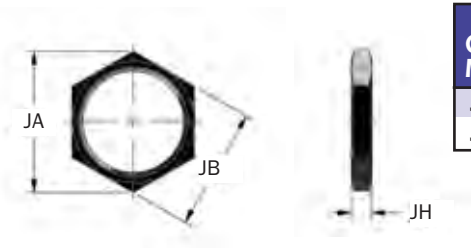
Adjustable Series Hydraulic Shock Absorbers

ECO OEM Small Bore Series

ECO OEM 1.15M → ECO OEM 1.25M Series

Accessories

Jam Nut (JN)



Catalog No./Model	Part Number	Model Ref	JA mm	JB mm	JH mm	Mass g
JN M33 x 1.5	J224061035	ECO (LR)OEM 1.15M	47,3	41,0	6,4	27
JN M36 x 1.5	J224063035	ECO (LR)OEM 1.25M	47,3	41,0	6,4	27

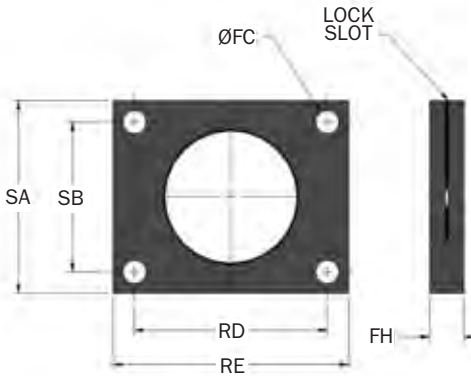
Stop Collar (SC)



Catalog No./Model	Part Number	Model Ref	CA mm	CD mm	WF mm	WL mm	Mass g
ΔSC M33 x 1.5	M923865058	ECO OEM 1.15M	44,5	38,1	30,0	16,0	215
ΔSC M36 x 1.5	M924063058	ECO OEM 1.25M	63,5	43,0	41,0	18,0	210
ΔSC M25 x 2 x 1.56	M924129058	HP 110 MC	50,8	38,0	32,0	15,0	215
ΔSC M25 x 1.5 x 1.56	M924129180	HP 110 MF	50,8	38,0	32,0	15,0	215

Notes: 1. *Do not use with urethane striker cap.
2. Δ= Non-standard lead time items, contact ITT Enidine.

Rectangular Flange (RF)



Catalog No./Model	Part Number	Model Ref	FC mm	FH mm	RD mm	RE mm	SA mm	SB mm	Size	Mass g
RF M33 x 1.5	N121049141	ECO (LR)OEM 1.15M	5,5	9,5	41,3	50,8	44,5	28,6	M5	30
RF M36 x 1.5	N121293141	ECO (LR)OEM 1.25M	5,5	9,5	41,3	58,8	44,5	28,6	M5	30

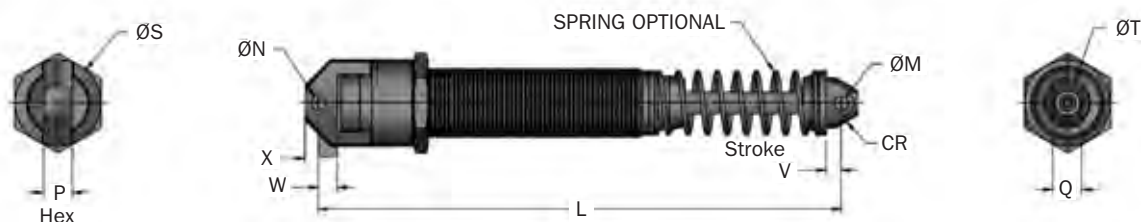
Adjustable Series Hydraulic Shock Absorbers

ECO OEM Small Bore Series

ECO OEM 1.15M → ECO OEM 1.25M Series

Accessories

Clevis Mount

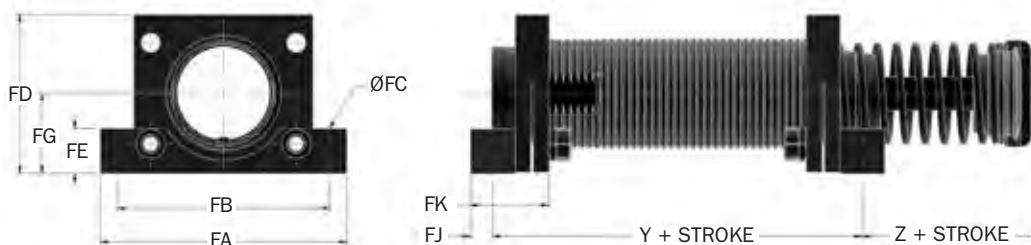


Catalog No./Model	S Stroke mm	L mm	M mm	N mm	P mm	Q mm	S mm	T mm	V mm	W mm	X mm	CR mm	Mass g
△ECO (LR)OEM 1.15 x 1 CM (S)	25	163,6	6,02 +0,13/0	6,02 +0,13/0	12,7 0/-0,3	12,7 0/-0,3	38,1	22,3	6,0	8,3	6,0	10,0	725
△ECO (LR)OEM 1.15 x 2 CM (S)	50	230,4	6,02 +0,13/0	6,02 +0,13/0	12,7 0/-0,3	12,7 0/-0,3	38,1	22,3	6,0	8,3	6,0	10,0	861
△ECO (LR)OEM 1.25 x 1 CM (S)	25	163,6	6,02 +0,13/0	6,02 +0,13/0	12,7 0/-0,3	12,7 0/-0,3	38,1	22,3	6,0	8,3	6,0	10,0	725
△ECO (LR)OEM 1.25 x 2 CM (S)	50	230,4	6,02 +0,13/0	6,02 +0,13/0	12,7 0/-0,3	12,7 0/-0,3	38,1	22,3	6,0	8,3	6,0	10,0	861

Notes: 1. "S" designates model is supplied with spring.

2. △= Non-standard lead time items, contact ITT Enidine.

Flange Foot Mount



Catalog No./Model	Part Number	Model Ref	Y mm	Z mm	FA mm	FB mm	FC mm	FD mm	FE mm	FG mm	FJ mm	FK mm	Bolt Size mm	Mass g
FM M33 x 1.5	2F21049306	ECO (LR)OEM 1.15M	56,6	31,8	70,0	60,3	6,0	44,5	12,7	22,7	6,4	22,2	M5	100
FM M36 x 1.5	2F21293306	ECO (LR)OEM 1.25M	56,6	31,8	70,0	60,3	6,0	44,5	12,7	22,7	6,4	22,2	M5	100

Adjustable Series Hydraulic Shock Absorbers

ECO OEM/OEMXT/OEM Large Bore Series

Adjustment Techniques

After properly sizing the shock absorber, the useable range of adjustment settings for the application can be determined:

1. Locate the intersection point of the application's impact velocity and the selected model graph line.
2. The intersection is the **maximum** adjustment setting to be used. Adjustments **exceeding this maximum suggested setting could overload the shock absorber.**
3. The useable adjustment setting range is from the 0 setting to the **maximum** adjustment setting as determined in step 2.

Example: OEM 1.25M x 1

1. Impact Velocity: 1,0 m/s
2. Intersection Point: Adjustment Setting 5
3. Useable Adjustment: Setting Range 0 to 5

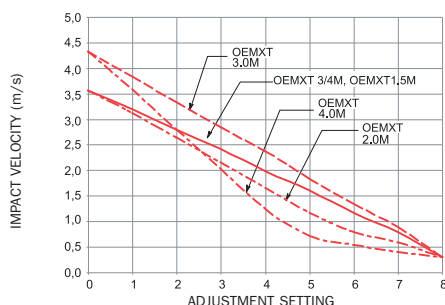
Example: (LR)OEMXT 2.0M x 2

1. Impact Velocity: .5 m/s
2. Intersection Point: Adjustment Setting 3
3. Useable Adjustment: Setting Range 0 to 3

Useable Adjustment Setting Range

Position 0 provides minimum damping force.
Position 8 provides maximum damping force.

OEMXT Large

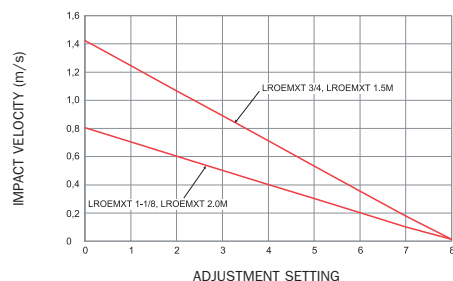


180° adjustment with setscrew locking. OEMXT 3.0M - OEM 4.0M



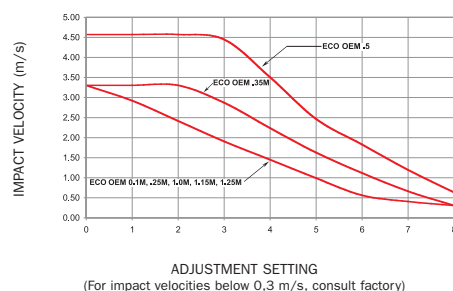
360° adjustment with setscrew locking. OEMXT 1.5M and OEMXT 2.0M

(LR)OEMXT Large



360° adjustment with setscrew locking
(LR)OEMXT 1.5M and (LR)OEMXT 2.0M

ECO OEM Small Series

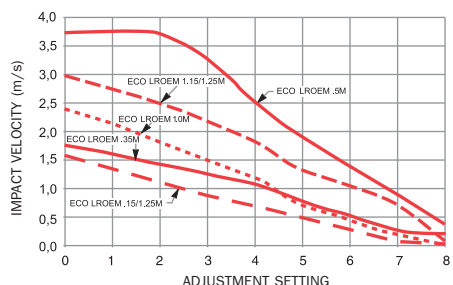


180° adjustment with setscrew locking
ECO OEM 0.1M - ECO OEM 0.5M



360° adjustment with setscrew locking
ECO OEM 1.0M

ECO (LR)OEM Small Series



180° adjustment with setscrew locking
ECO (LR)OEM 0.15M - ECO (LR)OEM 0.5M



360° adjustment with setscrew locking
ECO (LR)OEM 1.0M



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