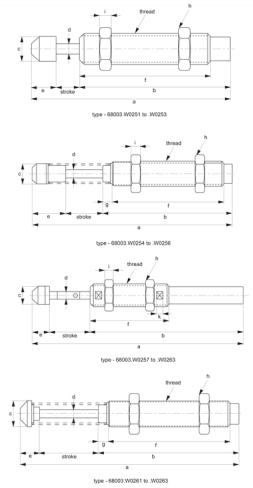
Shock Absorbers, Self Compensating

M25 - M36, non-adjustable



68003

Material

Outer Tube: STKM11A, hardened and blackened.
Piston Rod: AISI 1045 hardened to HV940°, chrome plated.
Return Spring: DIN GWP.
Muffler Cap: urethane rubber. **Seal:** nitrile rubber.

Technical Notes

Supplied with rubber muffler cap as standard, this is removable - see introductorary technical notes for guidance.

Tips

Select High Impact Speed model for hard impact at start of stroke. For hard set down at end of stroke choose a Medium or Low Impact Speed model.

Important Notes

For correct product selection refer to Product Selection Formulae and Calculation pages, and associated Capacity & Selection Charts.

Order No.	Stroke mm	Nm per cycle (Et) Nm max.	Per hour (ETc) Nm max.	Effective mass (Me) kg max.	Impact speed (v)	Impact speed (v) m/s max.	Operating temperature °C	Weight g
68003.W0251	25	80	54000	200	High	4.0	-10 to +80	330
68003.W0252	25	80	54000	800	Med	2.5	-10 to +80	330
68003.W0253	25	80	54000	1500	Low	1.0	-10 to +80	330
68003.W0254	40	120	75000	300	High	4.0	-10 to +80	430
68003.W0255	40	120	75000	1200	Med	2.5	-10 to +80	430
68003.W0256	40	120	75000	2000	Low	1.0	-10 to +80	430
68003.W0257	50	98	90000	15	High	4.0	-10 to +80	435
68003.W0258	50	98	90000	40	Med	2.5	-10 to +80	435
68003.W0259	50	98	90000	160	Low	1.0	-10 to +80	435
68003.W0261	80	150	120000	20	High	4.0	-10 to +80	535
68003.W0262	80	150	120000	50	Med	2.5	-10 to +80	535
68003.W0263	80	150	120000	200	Low	1.0	-10 to +80	535
68003.W0361	60	250	120000	400	High	4.0	-10 to +80	1.030
68003.W0362	60	250	120000	1500	Med	2.5	-10 to +80	1.030
68003.W0363	60	250	120000	2400	Low	1.0	-10 to +80	1.030

Order No.	Thread	a	b	c	d	e	f	h	g	i	j	k
68003.W0251	M25x1,5	155.0	111.0	22.0	8	19.5	101.0	32	-	9	-	-
68003.W0252	M25x1,5	155.0	111.0	22.0	8	19.5	101.0	32	-	9	-	-
68003.W0253	M25x1,5	155.0	111.0	22.0	8	19.5	101.0	32	-	9	-	-
68003.W0254	M25x1,5	214.0	127.0	22.0	8	36.0	117.0	32	10	9	-	-
68003.W0255	M25x1,5	214.0	127.0	22.0	8	36.0	117.0	32	10	9	-	-
68003.W0256	M25x1,5	214.0	127.0	22.0	8	36.0	117.0	32	10	9	-	-
68003.W0257	M25x1,5	239.5	170.5	22.0	8	19.5	100.0	32	-	9	-	-
68003.W0258	M25x1,5	239.5	170.5	22.0	8	19.5	100.0	32	-	9	-	-
68003.W0259	M25x1,5	239.5	170.5	22.0	8	19.5	100.0	32	-	9	-	-
68003.W0261	M25x1,5	336.0	237.0	22.0	8	19.5	100.0	32	-	9	23	11

Shock Absorbers, Self Compensating

M25 - M36, non-adjustable

Order No.	Thread	a	b	c	d	e	f	h	g	i	j	k
68003.W0262	M25x1,5	336.0	237.0	22.0	8	19.5	100.0	32	-	9	23	11
68003.W0263	M25x1,5	336.0	237.0	22.0	8	19.5	100.0	32	-	9	23	11
68003.W0361	M36x1,5	248.0	162.0	35.5	10	26.0	134.0	46	17	15	23	11
68003.W0362	M36x1,5	248.0	162.0	35.5	10	26.0	134.0	46	17	15	23	11
68003.W0363	M36x1,5	248.0	162.0	35.5	10	26.0	134.0	46	17	15	23	11

Shock Absorbers benefits and features

Why do we need shock absorbers?

Shock Absorbers are widely used in industry where the speed, direction or movement of objects must be changed or stopped. Without suitable methods of control the kinetic energy inherent in many moving objects, which occur in manufacturing, can result in increased machine wear and even machine damage.

Ideally any method of "shock absorption" should provide two key features:

1) Bring the moving object to rest quickly, smoothly and without rebounding forces
2) In-built reliability and safety

Shock Absorbers are able to quickly convert the kinetic energy of a moving object into heat and to dissipate this into the air, and provide a constant linear deceleration of an object throughout its entire impact stroke, to quickly, smoothly and quietly bring a moving object to rest with the lowest reaction force and in the shortest time. All of these features mean increased manufacturing productivity, extended machine life, and improved efficiency.

The cost of outdated buffering methods

Traditional buffering methods:

- Springs
- Dash Pots
- Air Buffers
- Rubber bumpers

Costs associated with outdated cushioning methods:

- Loss of production
- Increased machine wear and tear
- Increased maintenance cost
- Increased vibration and noise pollution
- Varying and inconsistent dampening forces, with non-linear or high peak forces at some point in their stroke.

Traditional buffering methods can only dissipate a small percentage of the kinetic energy of a moving object, the remainder is stored (rather than dissipated) as elastic energy which results in high resistance and rebounding forces toward the end of the impact stroke.

Benefits of using Wixroyd Shock Absorbers

Wixroyd Shock Absorbers are designed to stop a moving object smoothly and quietly from the beginning to the end of its impact stroke. Their design enables a constant resistance force or linear deceleration throughout the impact stroke, quickly converting the kinetic energy of the moving object into heat which is quickly dissipated into the air. A linear deceleration curve, as achieved by our shock absorbers, brings an object to rest in the shortest time while reducing damaging impact forces.

Energy Capacity: Shock absorbers can absorb more energy, without increasing deceleration or reaction forces.

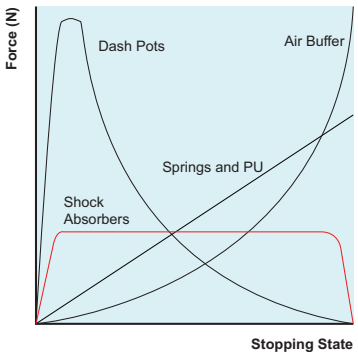
Stopping Force: Shock absorbers provide smooth decelaration of parts, which means less machine wear and hence reduced maintenance.

Stopping time: Shock absorbers bring moving loads to rest more quickly, increasing productivity.

Advantages of using Wixroyd Shock Absorbers

- Consistent and reliable dampening force or linear deceleration, throughout entire impact stroke
- Smoother motion and deceleration of moving parts
- Increased productivity
- Extended machine life and improved efficiency
- Simplified application design and build costs
- Reduced maintenance costs
- Improved health and safety, through reduced vibration and noise pollution

Comparison of shock absorbers vs. other methods



Dashpots: produce large peak forces at beginning of impact stroke, abruptly slowing load - however braking force quickly declines.

Springs & Rubber Buffers: energy is stored rather than dissipated, resulting in rebounding of the load.

Air Buffers: initial braking force is low, but due to the compressibility of air it increases sharply toward later stages of stroke, resulting in inconsistent braking force.

Shock Absorbers: designed to stop a moving object smoothly and quietly from beginning to end of its impact stroke. Their design enables constant resistance force or linear deceleration throughout impact stroke, they quickly convert kinetic energy of a moving object into heat which is quickly dissipated into the air.

Wixroyd Shock Absorbers are available in two primary types

Self-compensating

Self compensating shock absorber 68001

Our Self-Compensating Shock Absorbers are effective for a stated range of Effective Mass (Me), and are self-compensating within this range - see selection charts. As long as the applications effective mass remains within the given range then no additional adjustment is required for changes in weight, speed or propelling force.

See models: 68001, 68002, 68003, 68004, 68008, 68012

Self compensating shock absorber 68002

Each Self-Compensating Shock Absorber is available in three standard max. Impact speed (v-m/s) variations:

1 - high impact speed
2 - medium impact speed
3 - low impact speed

For specific max. impact speed values please refer to the selections charts and the specific product tables.

For hard impact at the start of a stroke it is advisable to choose a high impact speed model, for hard set down at the end of a stroke it is advisable to choose a medium or low impact speed model, or to move up to the next higher bore size

Adjustable

Adjustable shock absorber 68020

Set collar to 0 at initial installation

After a few cycles adjust collar setting to suit application

Adjustable Shock Absorbers have an adjustment collar at their base (with a scale of 0-9), which enables adjustment of the Shock Absorber's optimum deceleration to suit the application.

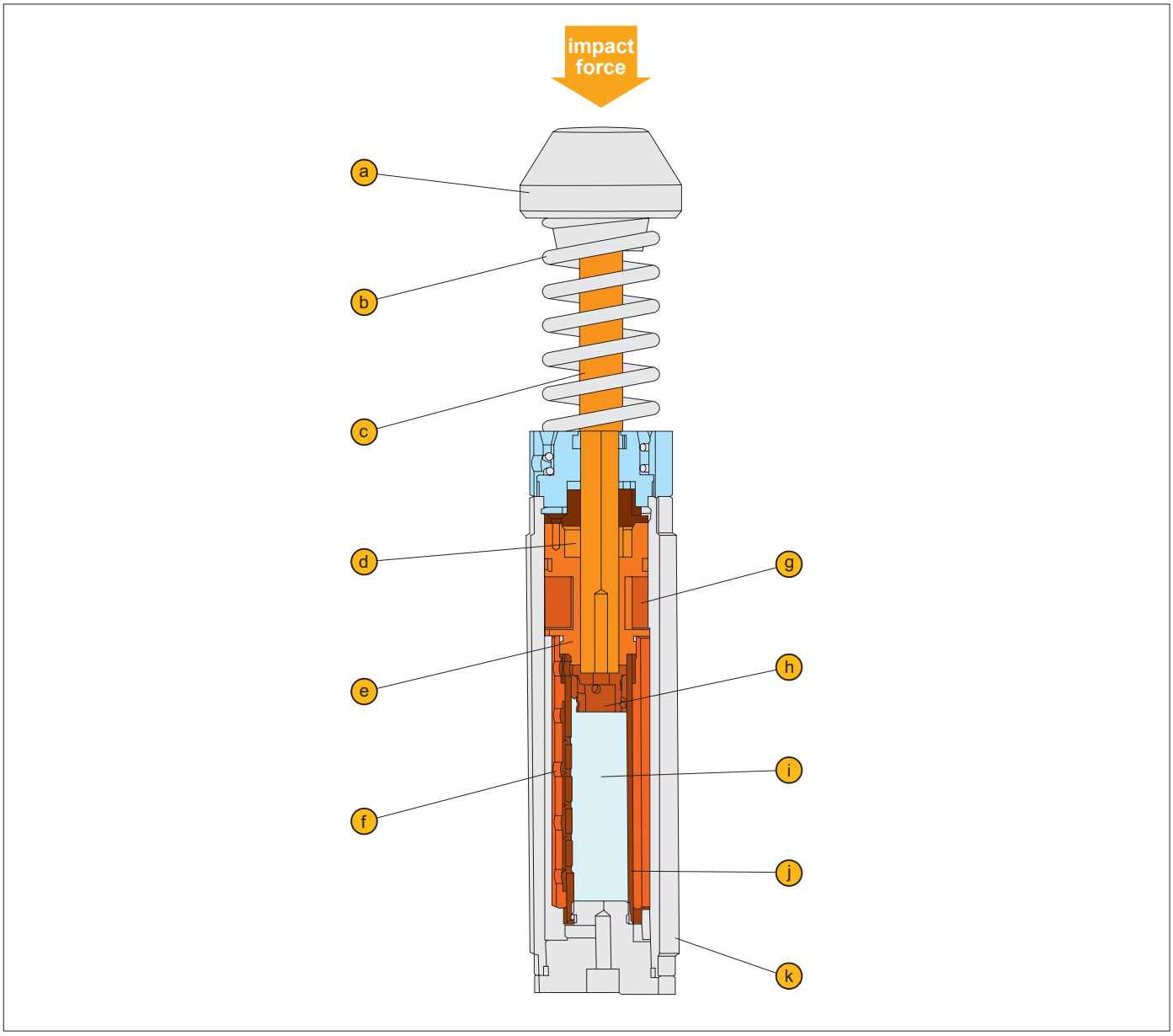
After initial installation, the Shock Absorber should be cycled a number of times to settle, and then the adjustable collar turned to the desired position for the application.

ov-W68001-A-T-W68032-A-T-b-Inh- Updated -31-10-2022

Inside a Wixroyd Shock Absorber

The design of Wixroyd Shock Absorbers is beautifully simple and beautifully effective. Made from high quality materials and components, they provide the highest performance and reliability.

Shock absorber design



- a Impact Cap
- b Return Spring; DIN GWP (external and internal models avai.)
- c Piston Rod; AISI 1045, hardened to HV940°, chrome plated
- d Seal
- e Bearing
- f Orifices
- g Accumulator; neoprene rubber
- h Check Valve
- i Fluid
- j Inner Tube
- k Outer Tube; STKM11A, hardened and blackened

ov-W68001-A-T-W68032-A-T-c-rnh- Updated -31-10-2022