



**SOLUTEC**  
INDUSTRIAL

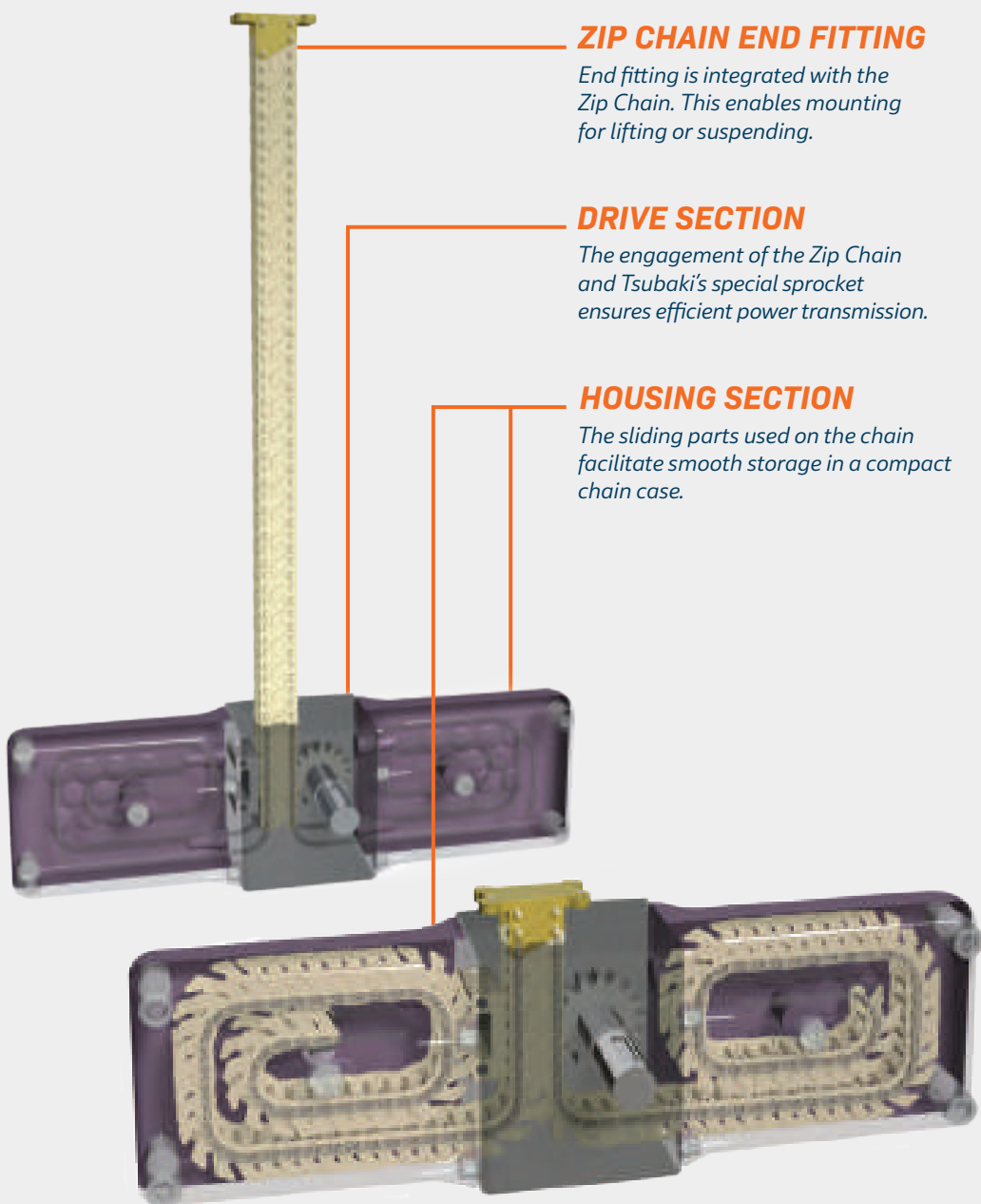
# **ZIP CHAIN ACTUATOR<sup>®</sup>**

*THE NEXT GENERATION OF  
COMPACT, HIGH-SPEED  
LINEAR ACTUATORS*



# ZIP CHAIN ACTUATOR<sup>®</sup>

The patented Tsubaki Zip Chain Actuator<sup>®</sup> (ZCA) is the solution to your linear actuator application problems. The ZCA utilizes 100+ years of Tsubaki Roller Chain manufacturing expertise to create a linear actuator that “zips” together chain segments, creating a rigid actuating arm that offers high speed, multi-point stopping, efficient operation, and a long life — all in a compact footprint.



## ZIP CHAIN END FITTING

End fitting is integrated with the Zip Chain. This enables mounting for lifting or suspending.

## DRIVE SECTION

The engagement of the Zip Chain and Tsubaki’s special sprocket ensures efficient power transmission.

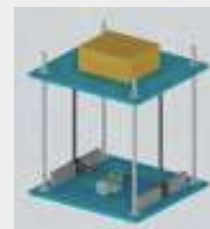
## HOUSING SECTION

The sliding parts used on the chain facilitate smooth storage in a compact chain case.

## SIMPLE AND EASY MAINTENANCE

### FEATURES

#### HIGH SPEED



MAX SPEED  
1,000 MM/SEC

#### MULTI-POINT STOPPING



DUTY FACTOR  
100%ED

#### LONGER LIFE



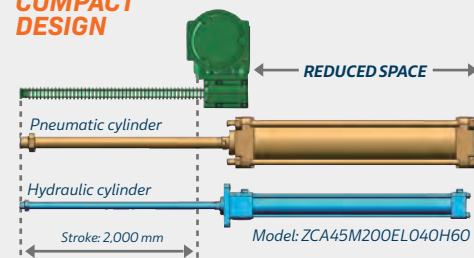
EXPECTED TRAVEL  
DISTANCE 4,000 KM

#### INSTALLS IN ANY DIRECTION



NO LIMIT ON  
INSTALL DIRECTION

#### COMPACT DESIGN



UP TO 90% SMALLER  
THAN THE STROKE

# APPLICATIONS

- HS High Speed
- HF High Frequency
- C Compact
- HP High Precision
- E Economical

## COMPACT DESIGN IDEAL FOR LOW HEIGHT APPLICATION AND SAVING SPACE

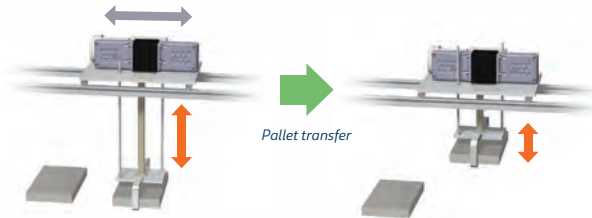
The compact structure of the ZIP CHAIN ACTUATOR® enables various installation options – including lifting, horizontal, and suspending installation. Use for a wide range of applications requiring linear operation.

### PALLET TRANSFER DEVICE HS HF C

#### Benefit:

- > Can be installed in the small space on the ceiling side
- > Reduces the cycle time for conveyance by allowing for lifting at high speed

Workpieces are raised and lowered for transferring, using an arm powered by the Zip Chain Actuator.

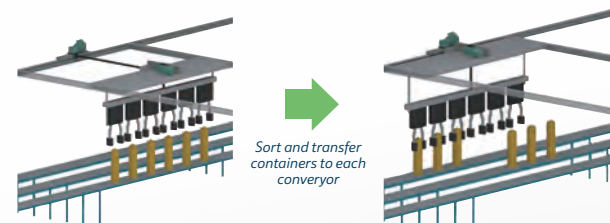


### CONTAINER SORTING EQUIPMENT HS C

#### Benefit:

- > Horizontal and suspending installation are possible without protruding parts, enabling a lower height layout
- > Accurate multi-point stopping even with horizontal transfers

Zip Chain Actuators can be used to move traversers horizontally and to raise or lower chucking units vertically.

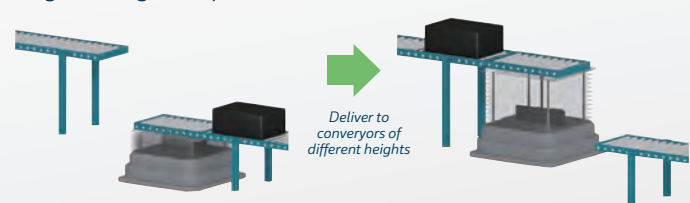


### AGV (AUTOMATED GUIDED VEHICLE) HP C

#### Benefit:

- > Lift unit can be accommodated compactly in the AGV
- > Height can be adjusted according to the conveyer height of the next process

Workpieces are transferred between conveyors at different heights using the Zip Chain Actuator mounted on AGV.

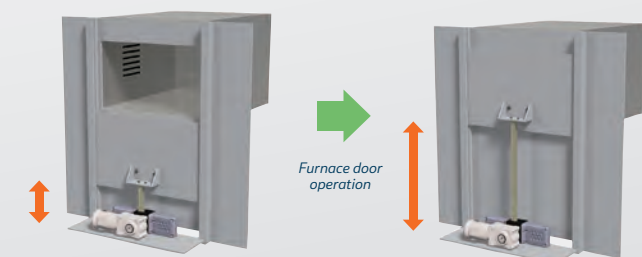


### FURNACE DOOR HS C E

#### Benefit:

- > Can be installed without protruding from equipment
- > Higher speed operation prevents temperatures inside the furnace from changing

Zip Chain Actuators can be used to push up and close furnace doors.



# MODEL

# ZCA 35 N 050 E L - J1

SERIES

SIZE

DRIVE SECTION

STROKE

MOUNTING

SHAFT ARRANGEMENT

OPTIONS

## SIZE

25	35	45
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## DRIVE SECTION

N	With No Drive Section
M	With Integrated Hypoid Gear Motor*
K	With Integrate TERVO Hypoid Reducer for Servo Motors*

## STROKE

Sizes	25		35			45		
Code	030	050	050	075	100	100	150	200
Allowable stroke (mm)	300	500	500	750	1000	1000	1500	2000

## MOUNTING

	E		D*
Lifting Installation	Horizontal Installation		Suspending Installation (MTO)

## SHAFT ARRANGEMENT

L: Input shaft	R: Input shaft on opposite side	T: Dual Input shaft*

## OPTIONS

Bellows*	
J1: For lifting, suspending	J2: For horizontal

## DRIVE SECTION

M	K
With Integrated Hypoid Gear Motor*	With Integrated TERVO Hypoid Reducer for Servo Motors*

\*Made-to-order options

## ATTACHABLE OPTIONS

Upper Mounting Base	Lower Mounting Base

# SPECIFICATIONS AND ENVIRONMENTAL REQUIREMENTS

ZCA main unit		ZCA25N	ZCA35N	ZCA45N
Drive section	Material	Forged steel		
	Coating Color	Black, Munsell N2.0 equivalent		
Housing section	Material	Polyacetal		Iron
	Coating Color	Purple grey Munsell 0.8P6.3/3.0 equivalent (molded)		Black, Munsell N2.0 equivalent
Chain	Material	Iron		
	Lubricant	Shell Alvania EP Grease 2 [Showa Shell Sekiyu K. K.] * This grease is applied before shipment.		
Environmental requirements	Operating temperature	0 to 60°C		
	Relative humidity	85% or less (no condensation)		
	Ambient atmosphere	Typical rain-free indoor environment with dust levels kept at a general factory level.		
	Installation direction	ZCA can be installed with any direction, be sure to mount a linear guide in the direction of travel. A mounting base is required to suspending installation.		

## CHARACTERISTICS

### WITHOUT BELLOWS

Model		Allowable stroke <sup>*1</sup> mm	Allowable thrust <sup>*2</sup> N {kgf}		Input shaft				Maximum speed		Zip Chain travel distance per input shaft rotation mm	Approximate mass		
					Allowable torque N·m {kgf·m}		Allowable OHL N {kgf}		Thrust direction mm/sec	Input shaft rotation (r/min)		Input shaft Standard/reverse shaft	Input shaft Dual shafts	Suspending Installation
ZCA25N	030	300	400	{40.8}	9.41	{0.96}	638	{65}	1000	630	95.3	1.9	2.0	2.5
	050	500	300	{33.6}								2.5	2.6	3.1
ZCA35N	050	500	1000	{102}	34.7	{3.53}	946	{96.4}	1000	420	142.9	5.1	5.5	6.0
	075	750										6.5	7.0	7.5
	100	1000										600	{61.2}	7.5
ZCA45N	100	1000	2000	{204}	116.6	{11.9}	2065	{210.5}	500	125	240	21	21	22
	150	1500										25	25	27
	200	2000										1200	{122.5}	30

### WITH BELLOWS\*

Model		Allowable stroke <sup>*1</sup> mm	Allowable thrust <sup>*2</sup> N {kgf}		Input shaft				Maximum speed		Zip Chain travel distance per input shaft rotation mm	Approximate mass		
					Allowable torque N·m {kgf·m}		Allowable OHL N {kgf}		Thrust direction mm/sec	Input shaft rotation (r/min)		Input shaft Standard/reverse shaft	Input shaft Dual shafts	Suspending Installation
ZCA25N	030	300	400	{40.8}	9.41	{0.96}	638	{65}	1000	630	95.3	2.5	2.6	3.1
	050	500	300	{30.6}								3.1	3.2	3.7
ZCA35N	050	500	1000	{102}	34.7	{3.53}	946	{96.4}	1000	420	142.9	5.5	6.0	6.5
	075	750										7.0	7.5	8.0
	100	1000										431	{44}	8.0
ZCA45N	100	1000	2000	{204}	116.6	{11.9}	2065	{210.5}	500	125	240	22	22	23
	150	1500										27	27	28
	200	2000										900	{91.8}	32

\*1 Use the unit within the allowable stroke range. Also, be sure to always attach a linear guide in the direction of travel.

\*2 Values are obtained when operated at a maximum acceleration of 0.35 G (upper limit) with the end fitting attached. These values are applicable regardless of the type of installation (vertical, horizontal, suspending).

\*Made-to-order options

## MORE INNOVATIVE SOLUTIONS FROM TSUBAKI

**SEALED JOINT  
CHAIN OPTIONS**



**BACKSTOPS &  
OVERRUNNING  
CLUTCHES**



**STEEL CABLE  
CARRIERS**



**ZIP CHAIN  
LIFTER®**



**SMART TOOTH  
SPROCKETS®**



**TITAN® SERIES  
CHAINS**



## EXCELLENCE THROUGH INNOVATION SINCE 1917

*For over 100 years, Tsubaki has developed and manufactured the highest-quality products for power transmission and motion control. With a vast network of global production facilities, R&D resources and sales offices, Tsubaki remains committed to providing innovative solutions to customers' problems for the next 100 years.*



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