



Fangtooth Inc  
11970 Mayfield  
Livonia, MI 48150  
(248) 798-4877  
www.fang2th.com



## PRODUCT OVERVIEW

"Automation solutions with teeth"



## Fangtooth Linear Motion Systems and Mechanical Drive Solutions

Ball Screws & Screw Jacks

Electro-Mechanical Rod Style Cylinders

Servo & Industrial Gearboxes

Guided Rack FANGaxis

Linear Actuators – Gantries  
[ FINGLIDE ]

Automated SwitchFORKS



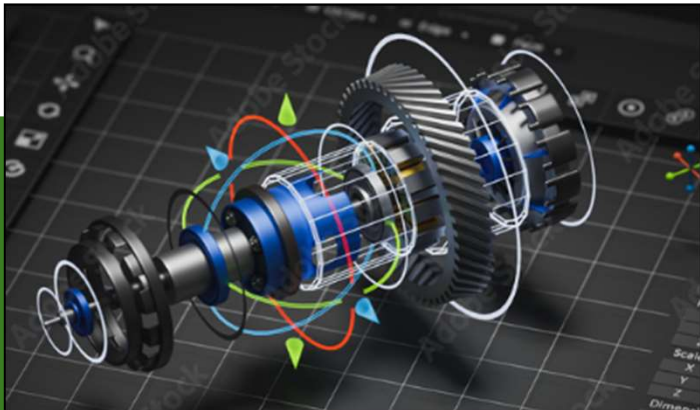
**Our  
Specialty!  
CUSTOM  
ENGINEERED  
PRODUCTS/SYSTEMS**



# Fangtooth Linear Motion Systems and Mechanical Drive Solutions

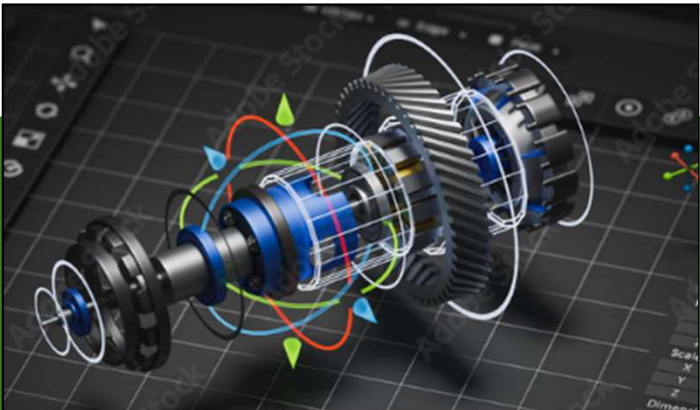
[www.fangtooth-linear.com](http://www.fangtooth-linear.com)

## Company Overview



### ASK an Engineer

Request a virtual or in person consultation with one of our engineers to review your specific requirements



### Product & System Sizing

Receive detailed sizing report with the Fangtooth CALCasd tools and reporting methods showing service factors, loads, fatigue life and torque requirements.

Automation Ideas with Teeth

INSPIRE GREAT AUTOMATION

248.798.4877  
[www.fangtooth-linear.com](http://www.fangtooth-linear.com)

APPLICATION SIZING INFORMATION

File: 24GEN0222\_CALCasd  
CALCulated Application Sizing Data  
Customer: GEN Date

Page 1/1

Note: application will require Max Belt Force of 398.4 lbs  
is rated for running force of 1250 lbs

**Input Data BELT & PULLEY**

Moving weight	589.676 [kg]	Additional force	0.000 [N]
Diameter of pinion(s)	89.130 [mm]	Additional torque	0.00 [Nm]
Moment of inertia (pinion)	0.0026780 [kgm <sup>2</sup> ]	Axis slope	0.000 [°]
Efficiency	0.920 [-]	Counterbalance (relative)	0.000 [-]
Coefficient of friction	0.150 [-]	Counterforce (hyd./pneum.)	0.000 [-]

**Gearing Data**

Input data for gear 1

Name/type		Moment of inertia	0.1300000 [kgm <sup>2</sup> ]
Translation ratio	8.00	Efficiency	0.900

**Drive Data**

Maximum value of moving weight 589.676 [kg]  
Ratio J ext / J motor 9.3

Resulting moments of inertia 0.0183536 [kgm<sup>2</sup>]

**motion profile on the motor side**

Cycle time	7.000 [s]	Maximum acceleration	538.538 [rad/s <sup>2</sup> ]
max. torque (with motor inertia)	18.83 [Nm]	max. torque (without motor inertia)	17.77 [Nm]
effective torque (with motor inertia)	4.90 [Nm]	effective torque (without motor inertia)	4.68 [Nm]
maximum	1726.76 [1/min]	Average speed	410.53 [1/min]

**Motion Profile**

Phase type / direction	Distance [m]	Time [s]	Accel. [m/s <sup>2</sup> ]	Start speed [m/s]	End speed [m/s]	Total mass [kg]	Proc. force [N]
Acceleration/Forward	0.169	0.336	3.000	0.000	1.007	589.676	0.000
Constant/Forward	1.338	1.328	0.000	1.007	1.007	589.676	0.000
Deceleration/Forward	0.169	0.336	-3.000	1.007	0.000	589.676	0.000
Dwell/Forward	0.000	5.000	0.000	0.000	0.000	589.676	0.000

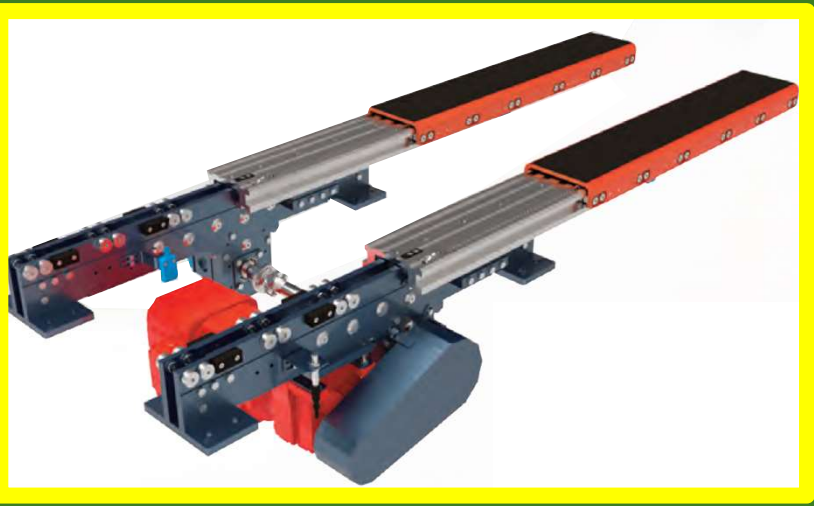
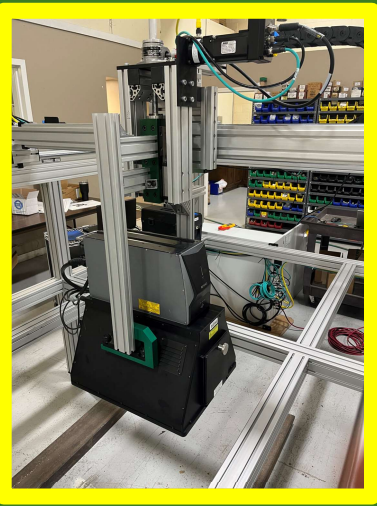
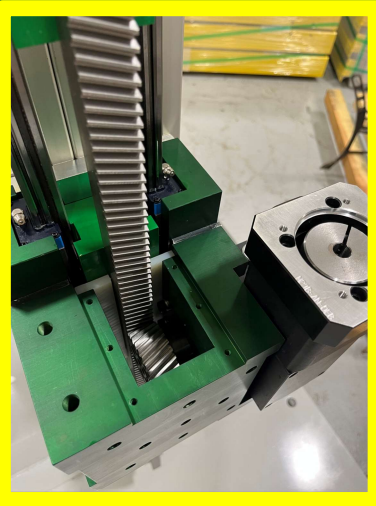


**Our Specialty!**

**CUSTOM  
ENGINEERED  
PRODUCTS/SYSTEMS**

FANGTOOTH ENGINEERS COMBINE MANY FANGTOOTH PRODUCTS INTO CUSTOM SOLUTIONS CREATING A VALUE RARELY SEEN IN MOTION CONTROL SYSTEMS SAVING ENGINEERING COSTS


- Bespoke Mounting & Adaption
- Custom Engineered SYSTEMS
- Custom Engineered COMPONENTS
- Custom CAD concepts
- Online CAD Library
- Strategic Control Panels
- Fabricated Steel Structures
- Extruded Aluminum Structures
- CALCasd – Calc Application Sizing Data sheets to determine L10 Life's, Torque/Load Requirements & Motor Needs (Speed / Torque / Precision)



GOTO [www.f2fast.com](http://www.f2fast.com)  
AND CHECK OUR  
Ball Screw Inventory

Other Configured Products  
Are Available with Delivery  
2-4 weeks





hardened  
steel  
inserts

Precision  
Ball Screws

- 

Rolled Flange Unit  
“F2RFU”a
- 

High Rigidity  
Rolled Double (nut)  
“F2RDF”
- 

High Speed  
Rolled Square Lead  
“F2RSQ”
- 

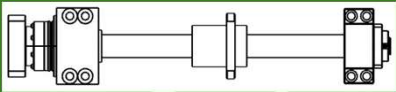
Rolled Toy Miniature  
“F2RTY”
- 

Pillow Block  
End Supports
- 

Flanged  
End Supports

LEFT HAND THREAD AVAILABLE

PERFECT MOTOT MOUNT  
SYSTEM





“R” Series Rolled Ball Screw


Standard Metric  
16mm DIA  
To 100mm DIA




Perfect Motor Mount High  
Speed "O" Series

5


YEAR  
WARRANTY




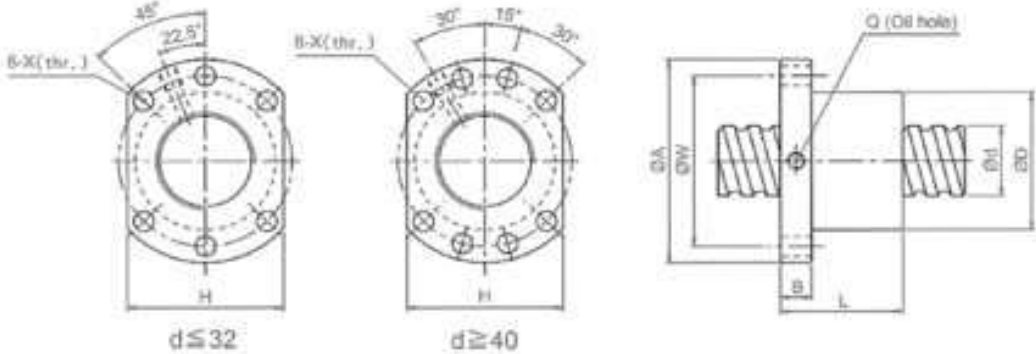
Our  
Specialty!  
CUSTOM  
ENGINEERED  
PRODUCTS



REF: F2BS-50001-F2RFU\_DATASHEET  
BALL SCREW – FLANGED UNIT  
Series: F2RFU









Units: mm

	Basic Model	Ball Circle Dia [d]	Lead	[D]	[A]	[B]	[L]	[W]	[X]	[H]	[Q]	[C <sub>tip</sub> ]	[C <sub>p</sub> ]
	F2RFU1605-4	16 mm	5 mm	28	48	10	50	38	5.5	40	M6	1720 lbs	3946 lbs
	F2RFU1610-3	16 mm	10 mm	28	48	10	47	38	5.5	40	M6	1590 lbs	2754 lbs
	F2RFU2005-4	20 mm	5 mm	36	58	10	51	47	6.6	44	M6	2492 lbs	5248 lbs
	F2RFU2010-3	20 mm	10 mm	36	58	10	57	47	6.6	40	M6	1841 lbs	3704 lbs
	F2RFU2505-4	25 mm	5 mm	40	62	10	51	51	6.6	48	M6	2822 lbs	6858 lbs
	F2RFU2510-4	25 mm	10 mm	40	62	10	85	51	9.0	48	M6	4287 lbs	8549 lbs
	F2RFU3205-4	32 mm	5 mm	50	80	12	52	65	9.0	62	M6	3197 lbs	9151 lbs
	F2RFU3210-4	32 mm	10 mm	50	80	12	85	65	9.0	62	M8	7475 lbs	15810 lbs
	F2RFU4005-4	40 mm	5 mm	63	93	12	55	78	9.0	70	M8	3550 lbs	11753 lbs
	F2RFU4010-4	40 mm	10 mm	63	93	14	93	78	9.0	70	M8	8622 lbs	20992 lbs
	F2RFU5005-4	50 mm	5 mm	75	110	14	55	93	11.0	85	M8	3815 lbs	14912 lbs
	F2RFU5010-4	50 mm	10 mm	75	110	15	93	93	11.0	85	M8	9812 lbs	27563 lbs
	F2RFU5020-4	50 mm	20 mm	75	110	16	138	93	11.0	85	M8	10240 lbs	31591 lbs
	F2RFU6310-4	63 mm	10 mm	90	125	18	98	108	11.0	95	M8	11179 lbs	35280 lbs
	F2RFU6320-4	63 mm	20 mm	95	135	20	149	115	13.5	100	M8	16698 lbs	52589 lbs
	F2RFU8010-4	80 mm	10 mm	105	145	20	98	125	13.5	110	M8	12392 lbs	46967 lbs
	F2RFU8020-4	80 mm	20 mm	125	165	25	154	145	13.5	130	M8	18709 lbs	68123 lbs
	F2RFU10020-4	100 mm	20 mm	150	202	30	180	170	17.5	155	M8	20771 lbs	86399 lbs



Designated ship Fangtooth fast items  
see [www.f2fast.com](http://www.f2fast.com)

INSPIRE GREAT AUTOMATION




“R” Series  
Rollad Ball Screw

PH 248.798.4877 MAIL [sales@fang2th.com](mailto:sales@fang2th.com)  
[www.fangtooth-linear.com](http://www.fangtooth-linear.com)




Servo Gearboxes &  
Industrial Gear Reducers


- Ultra Light  
Ultra Quiet




GhostDrive  
“GhD”
- Ultra Quiet




IronDrive  
“FeD”
- Up to  
175,000 in-lbs




HeavyDrive  
“HvD”
- Ultra Light




Conveyor Series  
“CvK”
- Ultra Light



SideCAR Series  
“CaR”
- Standard Steel  
400 Series  
Stainless Option




Spiral Bevel  
“SpB”
- 300 Stainless




IP69 Worm SS  
“69K”

- OTHER PRODUCTS AVAILABLE
- GEARMOTORS
  - BRAKEMOTORS
  - INLINE PLANETARY
  - HYPOID

SHIPS FAST







Servo Worm Gearbox “GhD”  
Ghost Drive Series

5 YEAR WARRANTY

Ultra Light  
Ultra Quiet

SHIPS FAST






Servo Worm Gearbox “FeD”  
IronDrive Series

5 YEAR WARRANTY


Ultra Quiet

5 YEAR WARRANTY

Up to  
175,000 in-lbs




Servo & Nema Worm Gearbox  
“HvD” Heavy Series




IEC/Servo/Nema Gearmoto  
“CaR” SideCAR Series

Ultra Light

SHIPS FAST







Nema Worm Gearbox “CvK”  
Conveyor Series

Ultra Light

SHIPS FAST






Spiral Bevel “SpB” Series

400 Stainless Available with  
5 Year Warranty

Standard Options  
Are Available with Delivery  
2-4 weeks

FANGTOOTH

Fast




BALLSCREWS  
GEARBOXES

SHIPS FAST

SCREWJACKS  
MOVITRIX


AUTOMATION



IP69” Worm “69K”  
Stainless Series

5 YEAR WARRANTY


300 Stainless



ASK ABOUT  
  
CUSTOM  
ENGINEERED  
PRODUCTS

FANGTOOTH

Fast



BALLSCREWS  
GEARBOXES

SHIPS FAST

SCREWJACKS  
MOVITRIX

AUTOMATION





# Fangtooth Inc

## Linear Actuators / Gantries / Systems

[www.fangtooth-linear.com](http://www.fangtooth-linear.com)  
[www.f2fast.com](http://www.f2fast.com)

### Origin Series

Single & Dual Linear Guides  
HIGH RIGIDITY



Ball Screw &  
Belt Driven

### Origin Series “W” & “N”

Widths 60mm, 80mm, 120mm, 160mm  
Payloads Up to 3100 lbs  
TRAVEL: Ball Screw Up to 3000mm (10ft), Belt to 5850mm (19ft)

### Matrix Series

Integrated Guides  
ULTRA LIGHT



Ball Screw

SHIPS  
FAST



### Matrix Series



Synchronous Reverse

### Matrix Series “MLU” & “MTU”

Widths 52mm, 80mm, 120mm  
Payloads Up to 143 lbs  
TRAVEL: Up to 1250mm (4ft)



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### Epoch Series

Single & Dual Linear Guides  
ECONOMY



Ball Screw &  
Belt Driven

SHIPS  
FAST



### Epoch Series “WEX” & “NEX”

Widths 110mm, 170mm, 220mm  
Payloads Up to 440 lbs  
TRAVEL: Ball Screw Up to 2400mm (8ft), Belt to 4800mm (16ft)

### Movitrix Series

CAM & Linear Guided



Belt Driven  
Unguided Options

SHIPS  
FAST



### Movitrix Series “MVX-B” & “MVX-C” & “MVX-LG”

Widths 28mm, 40mm, 80mm, 105mm, 164mm  
Payloads Up to 6000 lbs  
TRAVEL: Up to 30m+ (100ft+)

### FangBOT Series

Multi-Axis Systems

Standard &  
Custom Solutions

Cable Track Included



**Movitrix “M2BT-XX”  
FangBOT “F2BT-XX”**



**Movitrix ”M2BT-XY”  
FangBOT “F2BT-XY”**



**Movitrix ”M2BT-XZ”  
FangBOT “F2BT-XZ”**



**Movitrix ”M3BT-XYZ”  
FangBOT “F2BT-XYZ”**

# Fangtooth Inc [ BIG-E and BIG-A ]

## Electro-Mechanical Rod Style Actuators

[www.fangtooth-linear.com](http://www.fangtooth-linear.com)  
[www.f2fast.com](http://www.f2fast.com)



BIG-E and BIG-A  
Electro-Mechanical  
Rod Style Actuators

**"EF" Force Series**  
8500 lbs Continuous



**EF Series**  
2.2 m/s Max  
Strokes from 50 mm  
to 1000 mm Stroke

**"EM" Motorized Series**  
650 lbs Continuous

Stepper & Brushless  
Options & Drives



**EM Series**  
1.5 m/s Max  
Strokes from 50 mm  
to 500 mm Stroke

**"ETHU20" High Thrust**  
4400 lbs Continuous



Compact Planetary  
Roller Screw

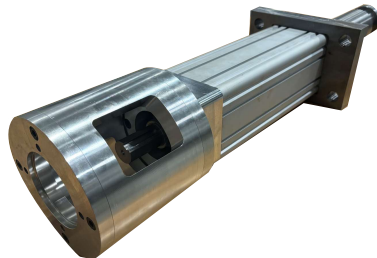
**ETHU Series**  
0.42 m/s Max  
Strokes from 50 mm  
to 800 mm Stroke

**"ETU" Matrix Guided Rod**  
1800 lbs Continuous



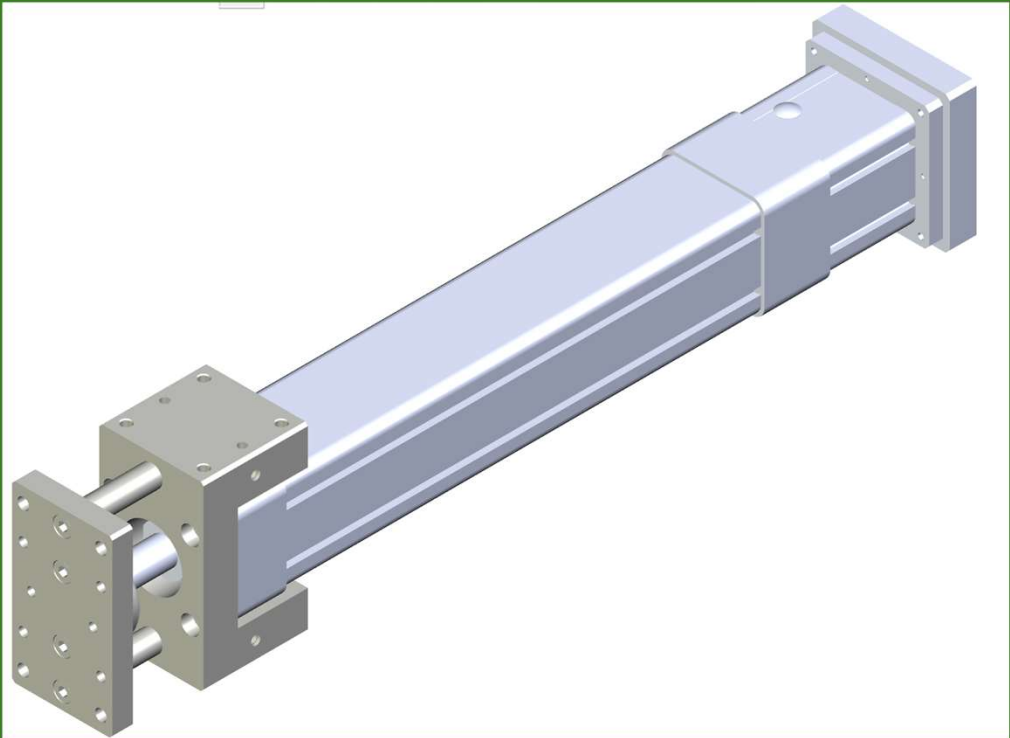
**ETU Series**  
1.2 m/s Max  
Strokes from 50 mm  
to 800 mm Stroke

**"BIG-A" Automotive Duty**  
12000 lbs Continuous  
60000 lbs Max

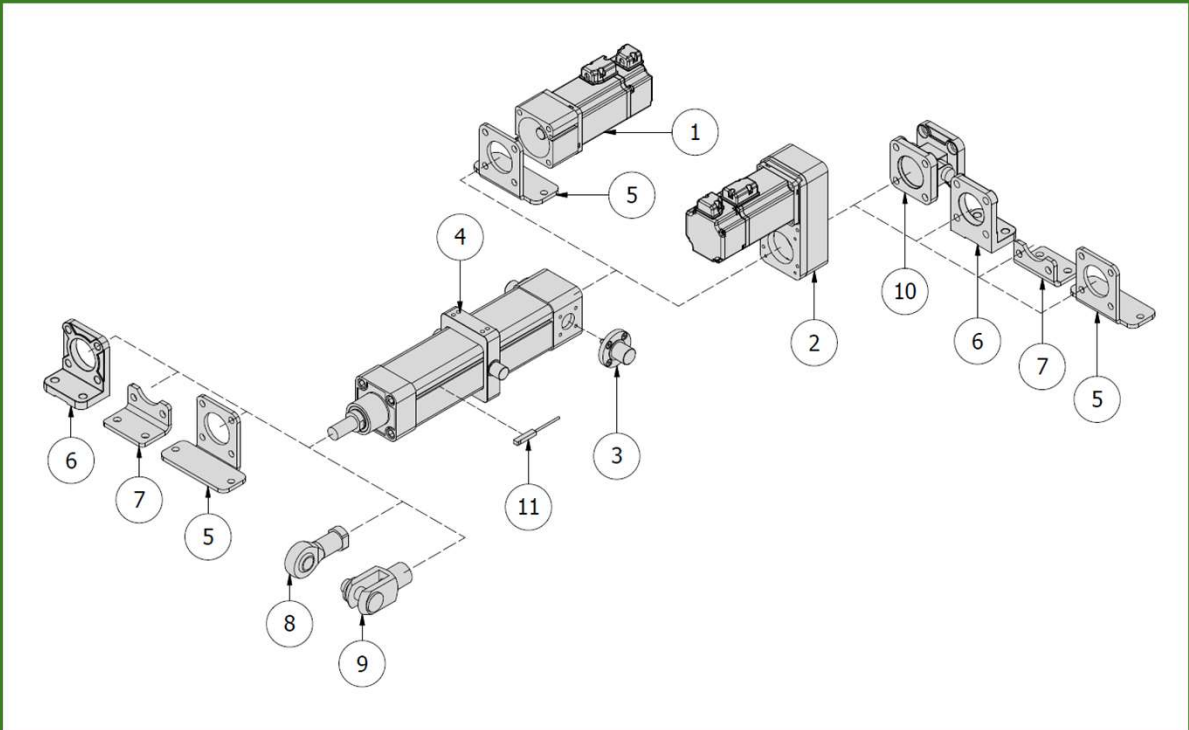


**BIG-A Series**  
1 m/s Max  
Strokes from 50 mm  
to 2000 mm Stroke

## H-Guide Assemblies Available



## Accessories





Neptune Planetary Lift  
Lift Up To 19 Tons



19+ Tons



Triton Ball Screw Lift  
Lift Up To 5 Tons



5 Tons



fangOPEN Standard  
Rack Axis

800 lbs



fangMAX Heavy Rack Axis

2500 lbs



Screw Jack COMBIKITS

20 Tons

If the standard doesn't  
meet your requirement

Ask us anyway.  
We always have a way!



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Specialty!  
CUSTOM  
ENGINEERED  
PRODUCTS



Standard Screw Jack Options - IN STOCK  
Additonal Available with Delivery  
2-4 weeks

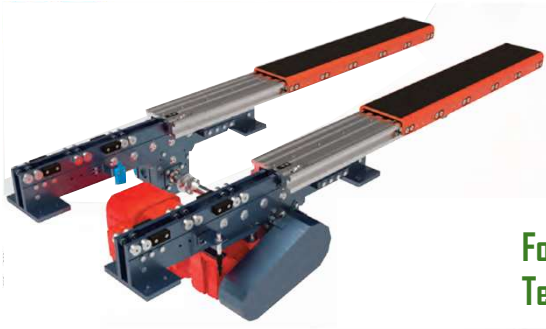


# Fangtooth Inc

## Automated SwitchFORKS

A1

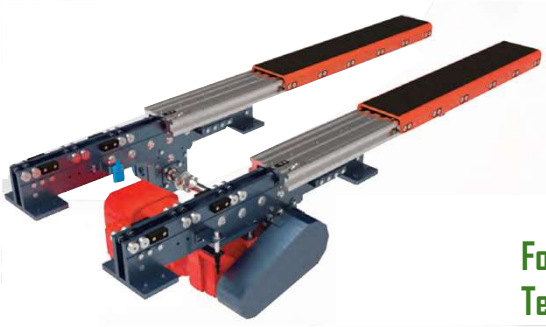
FANGTOOTH SWITCHFORK  
ASF-A1 SERIES "A-II-TELE01"  
STANDARD LOAD



Fork Set = II Forks  
Telescopic Depth = 1

T1

FANGTOOTH SWITCHFORK  
ASF-T1 SERIES "T-II-TELE01"  
HEAVY LOAD



Fork Set = II Forks  
Telescopic Depth = 1

Z2

FANGTOOTH SWITCHFORK  
ASF-Z2 SERIES "Z-II-TELE02"  
STANDARD LOAD



Fork Set = II Forks  
Telescopic Depth = 2

R3

FANGTOOTH SWITCHFORK  
ASF-R3 SERIES "R-II-TELE03"  
STANDARD LOAD



Fork Set = II Forks  
Telescopic Depth = 3

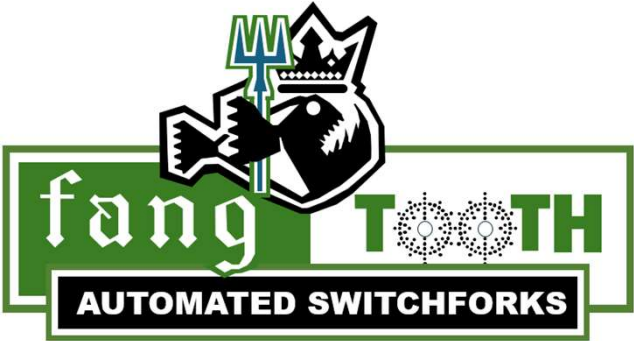
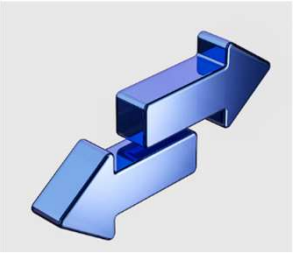
X

FANGTOOTH SWITCHFORK  
ASF-X SERIES  
SCISSOR LIFT



Combination Scissor Lift  
Automated Switch Forks  
Standard Option

BI-DIRECTIONAL



### “A1” Series

Up to 1500 kg = 3300 lbs  
Stokes Up to 2100 mm = 6.9 feet  
Short Stroke Deflections as low as 12mm weight dependent  
Long Stroke Deflections as low as 23mm- 64mm weight dependent

### “T1” Series

Up to 4000 kg = 8800 lbs  
Stokes Up to 2900 mm = 9.5 feet  
Short Stroke Deflections as low as 4mm weight dependent  
Long Stroke Deflections as low as 9mm- 36mm weight dependent

### “Z2” Series

Up to 2000 kg = 4400 lbs  
Stokes Up to 3300 mm = 10.8 feet  
Short Stroke Deflections as low as 12mm weight dependent  
Long Stroke Deflections as low as 24mm- 55mm weight dependent

### “R3” Series

Up to 1200 kg = 2645 lbs  
Stokes Up to 3750 mm = 12.3 feet  
Short Stroke Deflections as low as 8mm weight dependent  
Long Stroke Deflections as low as 27mm- 62mm weight dependent

**If the standard doesn’t meet your requirement**

**Ask us anyway.  
We always have a way!**