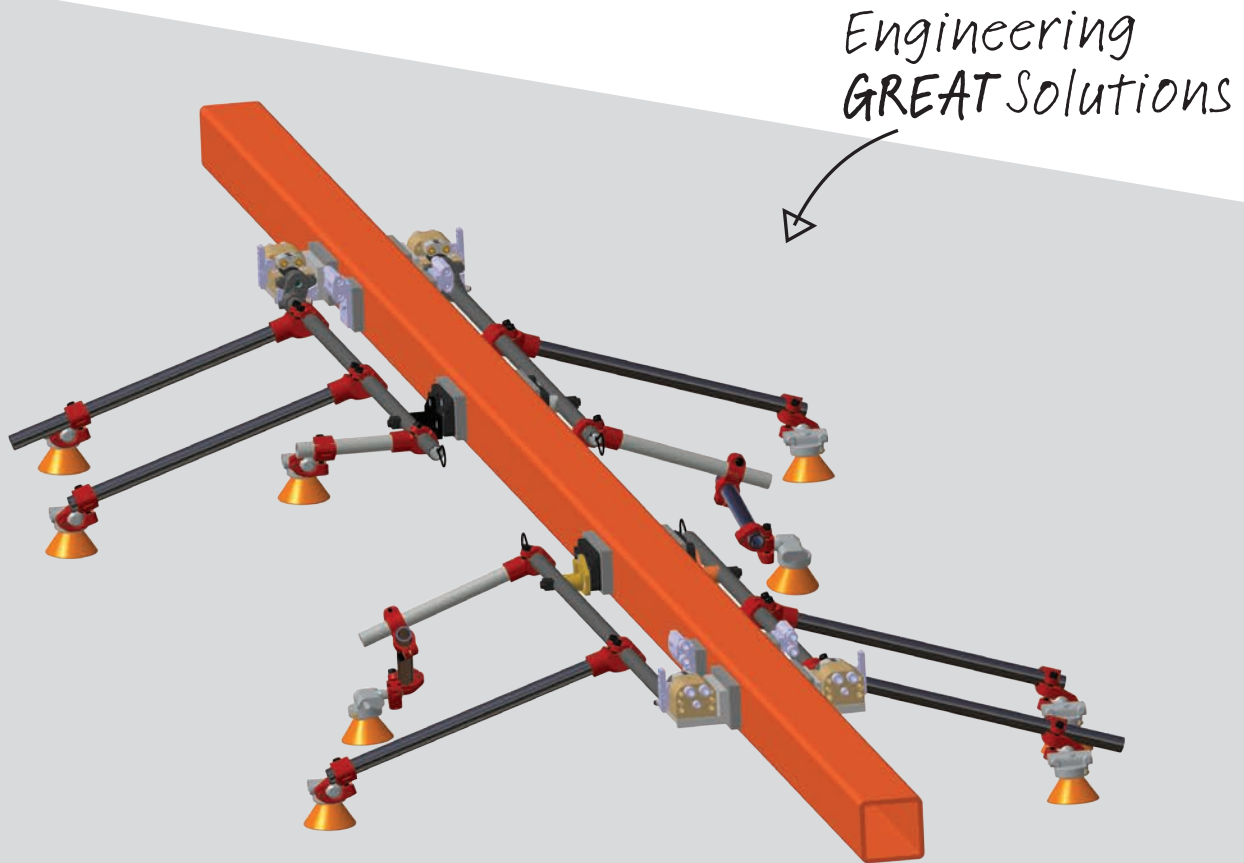


# Featherweight Tooling



**Lightweight, fast,  
easy and quick  
to adjust**





# Engineering GREAT solutions

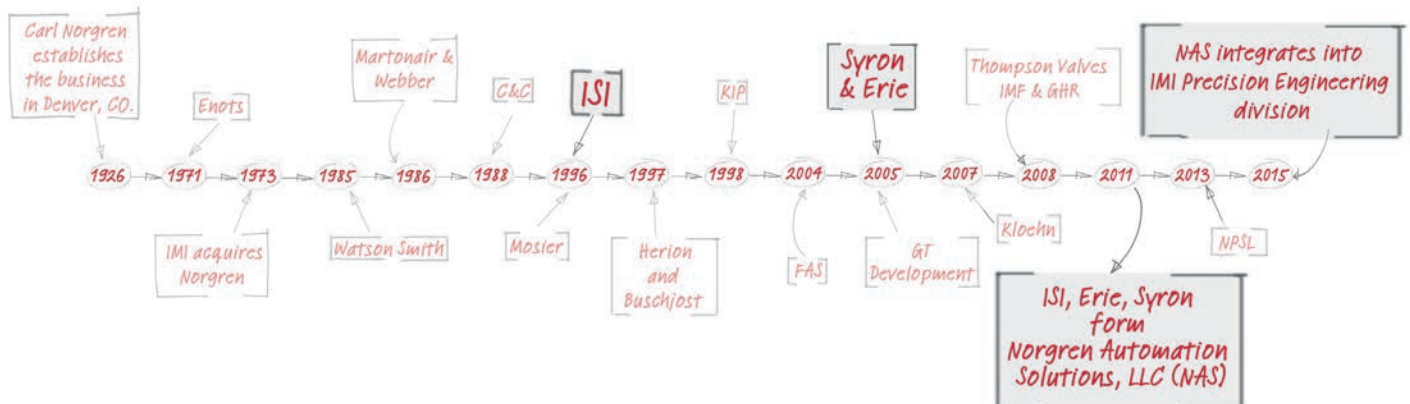
*We deliver **GREAT** solutions for our customers tackling the world's most demanding engineering challenges.*

**IMI Precision Engineering** is a world leader in motion and fluid control technologies. Wherever precision, speed and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of our customers' equipment.

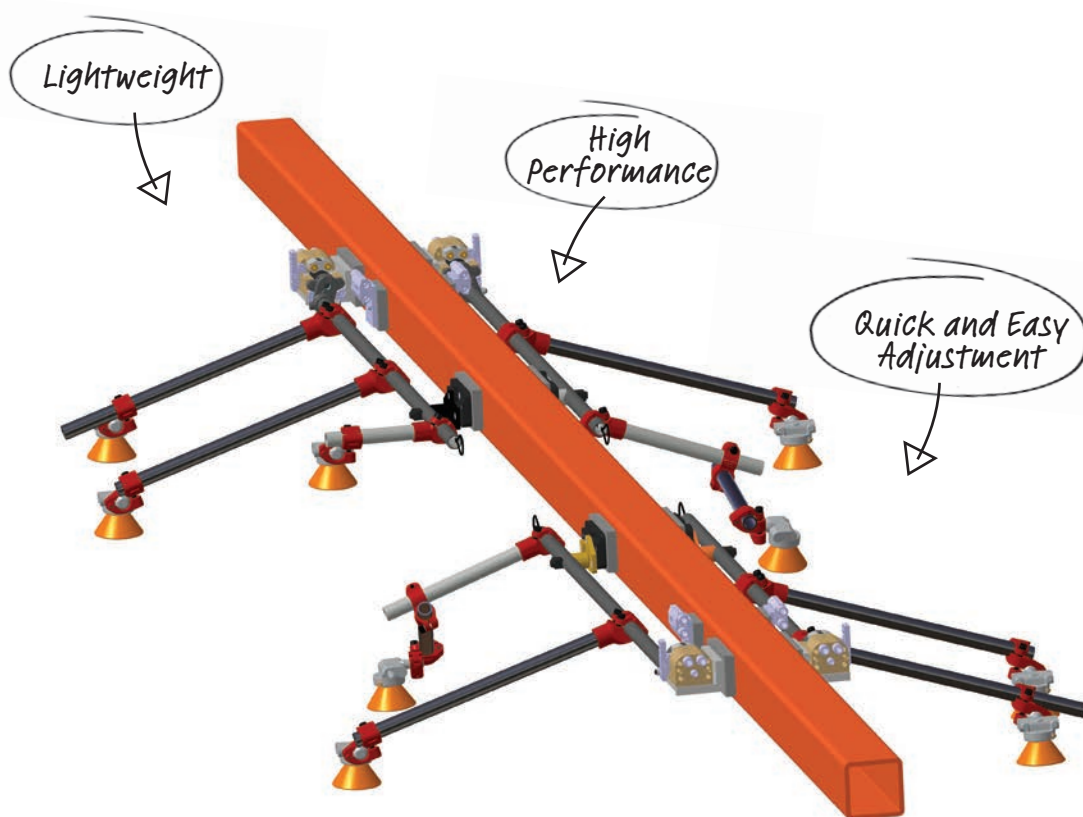
Part of IMI plc, (listed on the London Stock Exchange since 1966), IMI Precision Engineering has \$1,214m in sales generated from a sales and service network in 75 countries, as well as manufacturing capabilities in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil. We support this with our global centers of technical excellence and facilities for CFD design and R&D testing. We employ a dedicated team of field engineers, sector specialists and key account managers – all committed to providing excellent service to our customers.

As a business, we aim to **UNDERSTAND** our customers' challenges. We then **CONNECT** our products, people and expertise in order to **DELIVER** exceptional service and solutions. Together these actions **IMPROVE** the performance of our customers' machinery.

We call this Engineering Great. We deliver it to customers through a world-class portfolio of high performance products, and strong partnerships for problem-solving utilizing our global network of support.



# FEATHERWEIGHT TOOLING



The new IMI Norgren Featherweight Tooling is up to 70% lighter than the traditional tooling, making it easier, faster and more ergonomic to adjust during change over. The decrease in tooling weight can also increase the robot's capacity to move at a much faster speed or handle more cups. It can be used for a wide range of applications including Crossbar and Tandem press lines.

# Fast Find Guide

## FEATHERWEIGHT TOOLING

Bracket Arms



FW-04

T Clamp



FW-08

Ball Clamp



FW-09

Aluminum Tube



FW-10

Steel Tube



FW-12

**Featherweight single bolt bracket arm**  
**50% weight reduction with aircraft aluminum**  
**1.00" clamp to 1.00" aluminum stem**



#### Order information:

**LWBS10EXXX**

Single

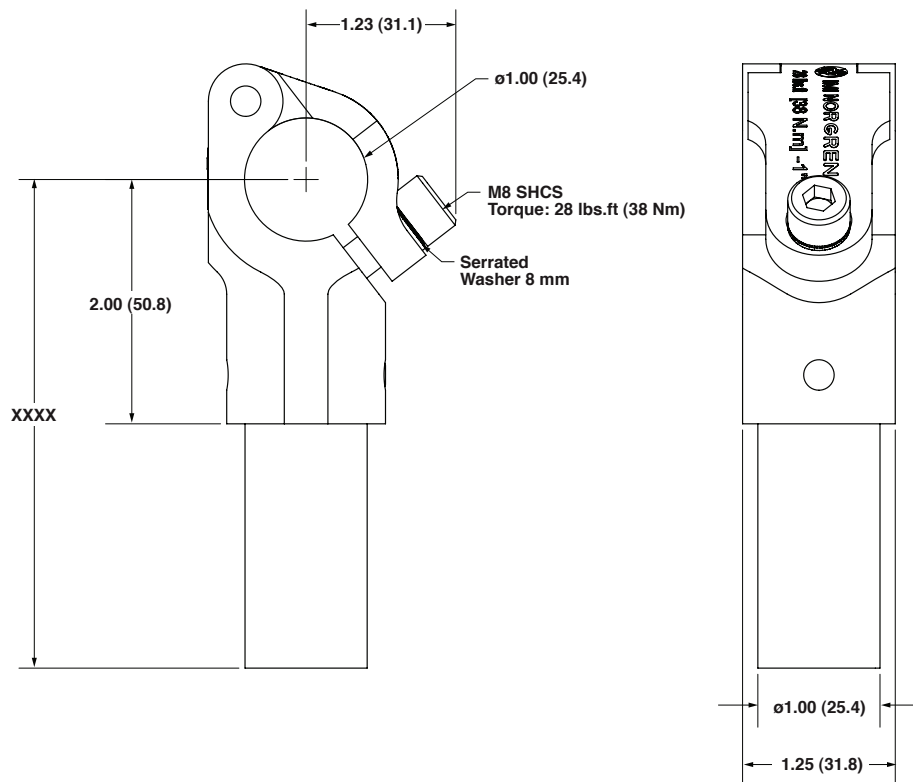
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800	0800

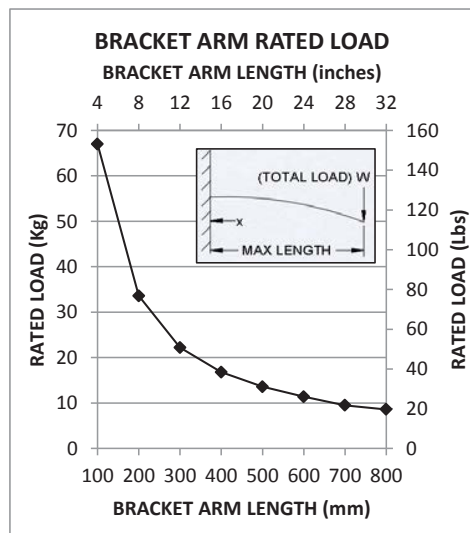
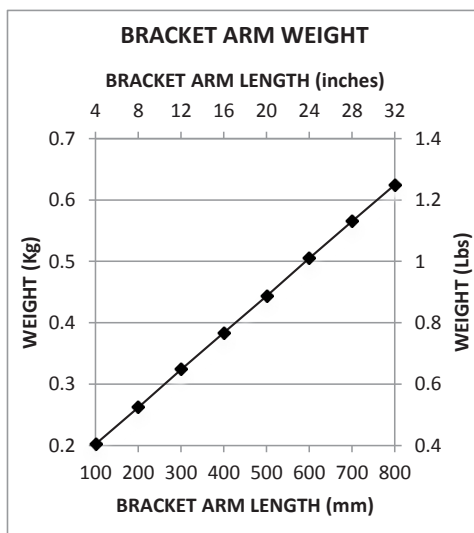
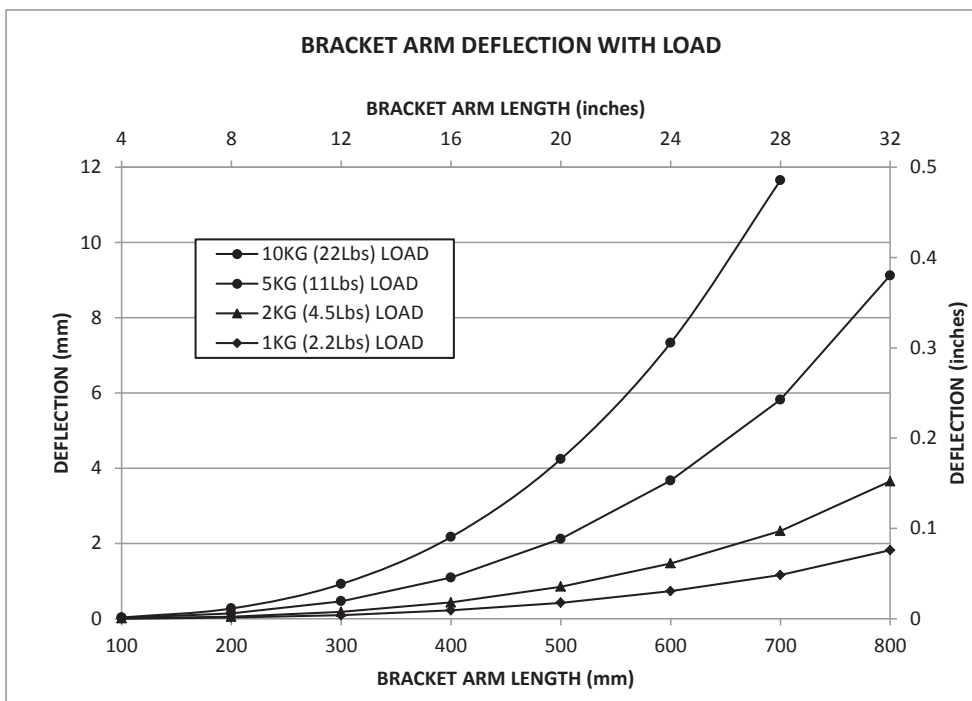
\*Lengths available: 100 to 800 in 25 mm increments.



#### Application notes

Load limits of 50 lbs-ft (67.5 Nm) recommended for 1.00" bracket arms.





**Featherweight double bolt bracket arm**  
Should be used for longer and heavier applications  
1.00" clamp to 1.00" steel stem



#### Order information:

**LWBD10EXXX**

Double

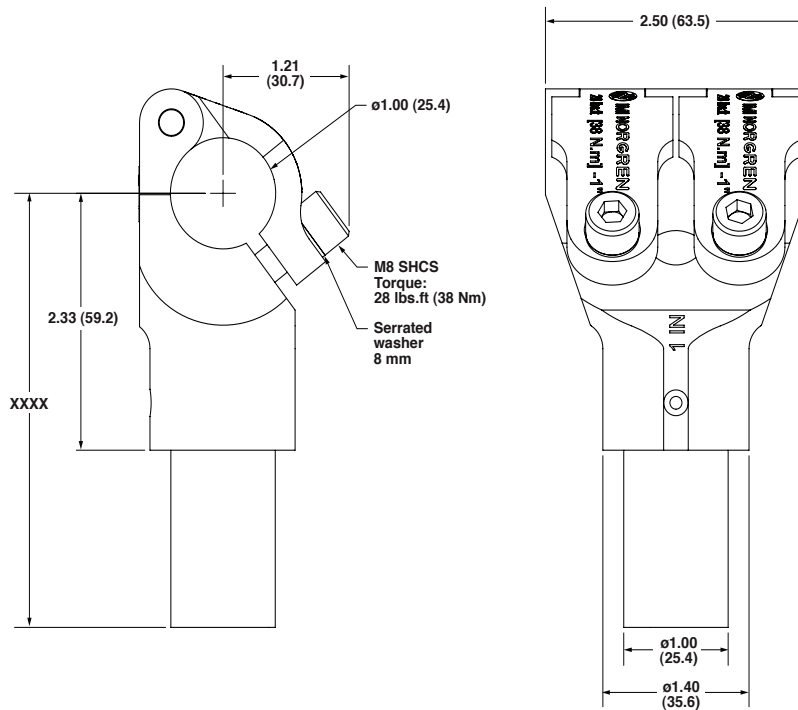
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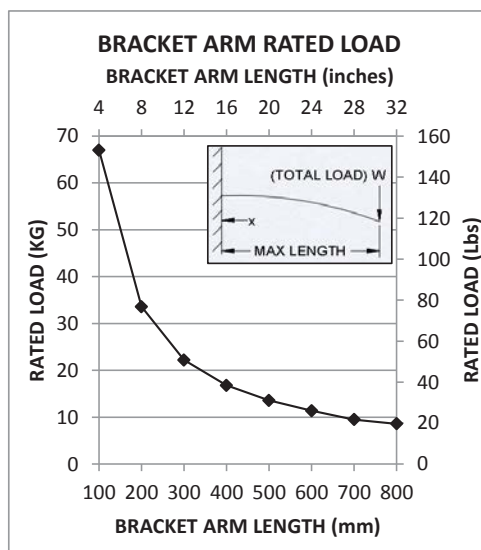
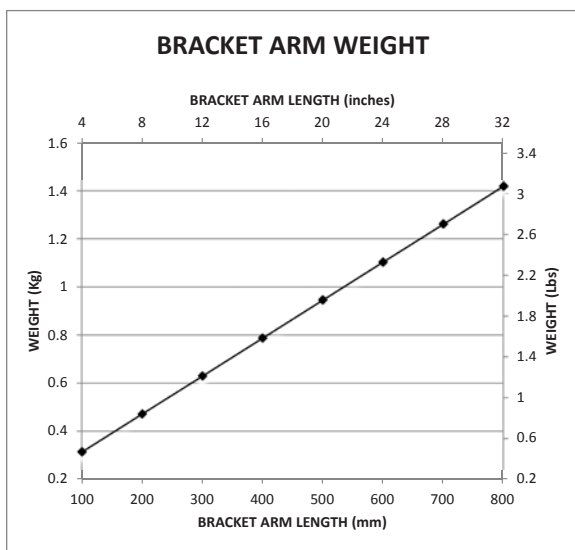
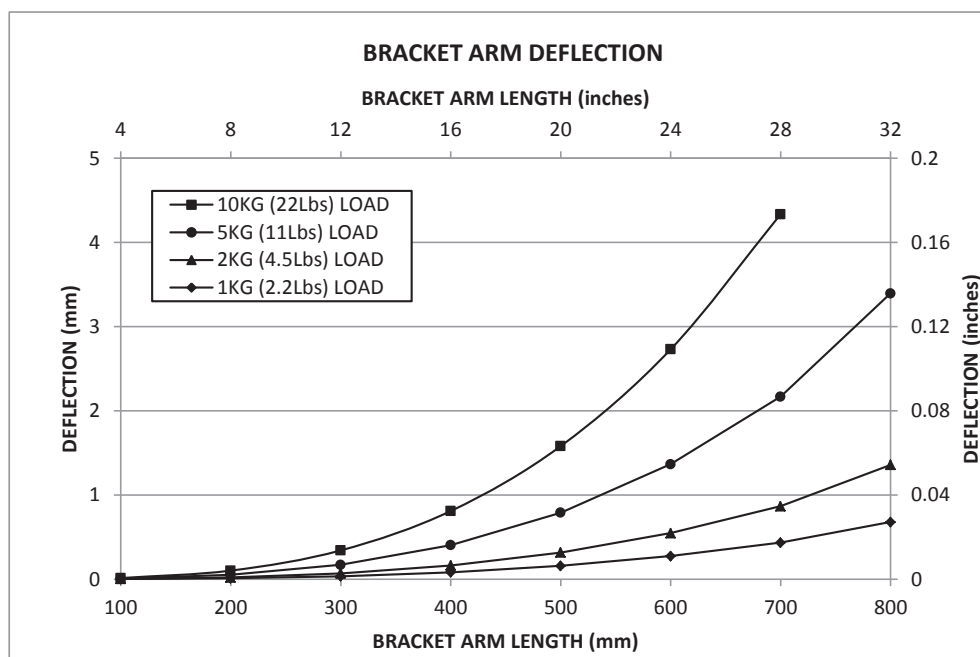
\*Lengths available: 100 to 800 in 25 mm increments.



#### Application notes

Load limits of 50 lbs-ft (67.5Nm) recommended for 1.00" bracket arms.

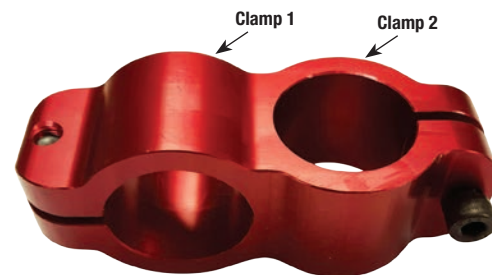






Light Weight Tooling T-Clamps provide a transition from one tube to another.

Tubes are clamped 90° to each other.



### Order information:

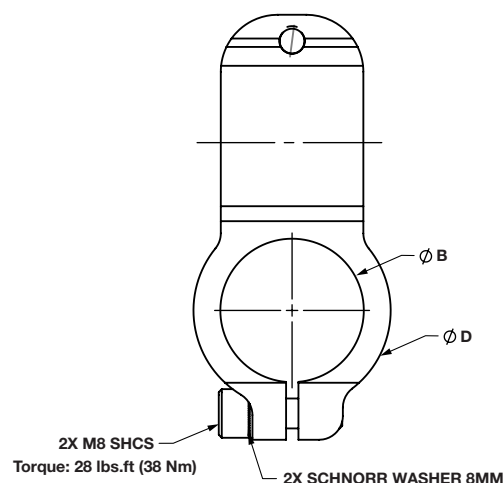
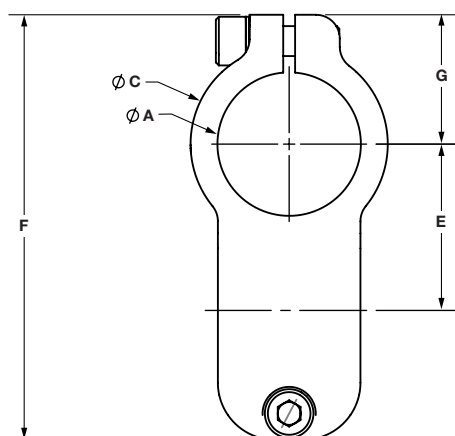
LWTC XXX XXX

Clamp 1 Description	Code	Clamp 2 Description	Code
1.00"	10E	1.00"	10E
1.50"	15E	1.50"	15E
25mm	25M	25mm	25M
40mm	40M	40mm	40M

### Application notes

Load limits of 100 ft-lbs [135 Nm] recommended for 1.50" and 40mm clamps

Load limits of 50 ft-lbs [67.5 Nm] recommended for 1.00" and 25mm clamps



### Standard parts

CATALOG #	LWTC10E10E	LWTC10E15E	LWTC15E15E	LWTC25M25M	LWTC25M40M	LWTC40M40M
"A"	1.00 (25.4)	1.50 (38.1)	1.50 (38.1)	.984 (25)	1.57 (40)	1.57 (40)
"B"	1.00 (25.4)	1.00 (25.4)	1.50 (38.1)	.984 (25)	.984 (25)	1.57 (40)
"C"	1.40 (35.6)	2.08 (52.8)	2.08 (52.8)	1.40 (35.6)	2.08 (52.8)	2.08 (52.8)
"D"	1.40 (35.6)	1.40 (35.6)	2.08 (52.8)	1.40 (35.6)	1.40 (35.6)	2.08 (52.8)
"E"	1.16 (29.5)	1.50 (38.1)	1.75 (44.5)	1.16 (29.5)	1.50 (38.1)	1.75 (44.45)
"F"	3.36 (85.3)	3.96 (100.6)	4.47 (113.5)	3.36 (85.3)	3.96 (100.6)	4.47 (113.5)
"G"	1.10 (27.9)	1.36 (34.5)	1.36 (34.5)	1.10 (27.9)	1.36 (34.5)	1.36 (34.5)
Weight	.19 lbs 86 gm	.36 lbs 163 gm	.56 lbs 252 gm	.19 lbs 86 gm	.34 lbs 152 gm	.44 lbs 199 gm

**Featherweight ball camp**  
Less weight than ultra arm series clamps  
Use in applications where ball position rotation is not required  
1.00" diameter tube to 1.125" ball

**Order information:**

LWBC10EXXXX

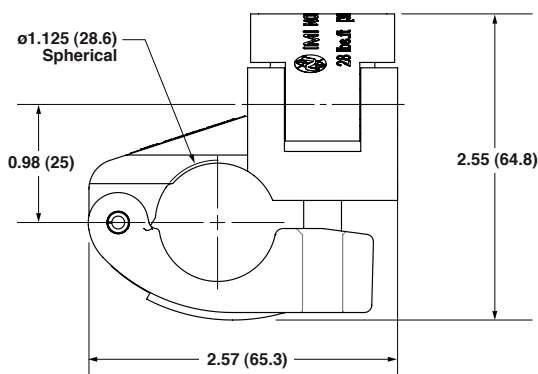
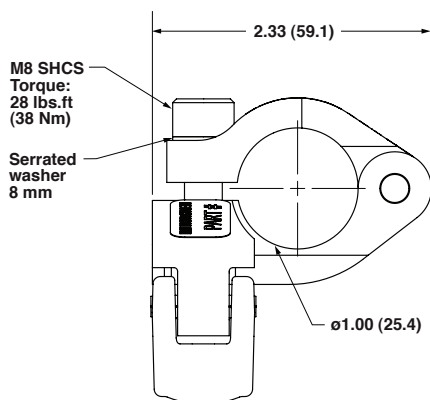
Length (mm)	Code
25	0025



FEATHERWEIGHT TOOLING

**Application notes**

Load limits of 50 lbs-ft (67.5 Nm) recommended for 1.00" ball clamp.  
Weight 0.35 lbs. (0.16 Kg)



## Featherweight aluminum tubing 1.00" diameter



### Order information:

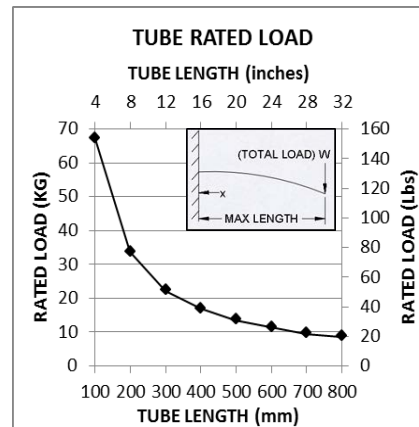
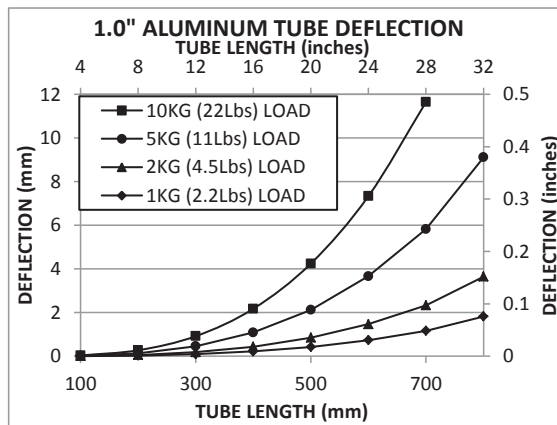
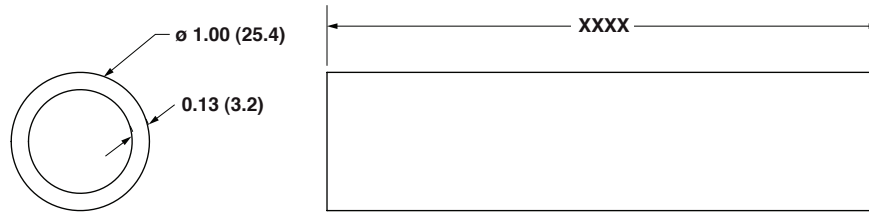
LWTA10EXXXX

Length*	Code
100	0100
XXXX	XXXX
3650	3650

\*Lengths available: 100 mm to 3650 mm in 25 mm increments

### Application notes

Tubes weight 0.03 lbs/in (589 g/m)



Featherweight aluminum tubing  
1.50" diameter



Order information:

LWTA15EXXXX

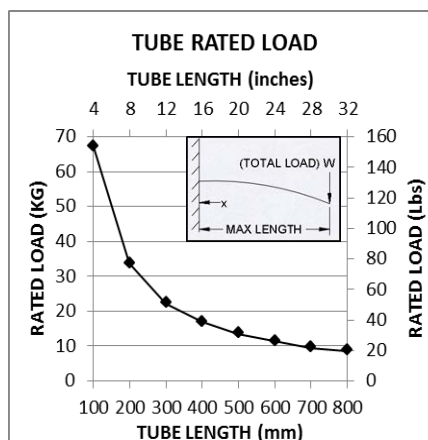
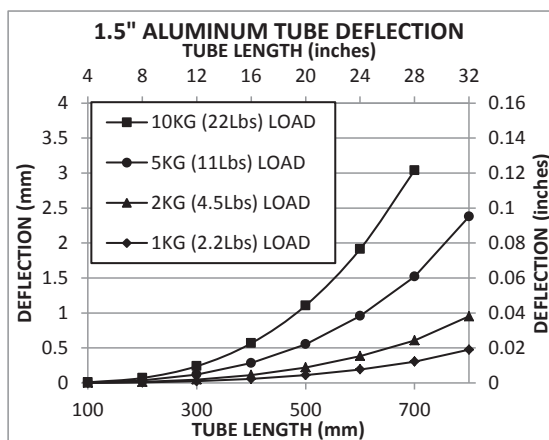
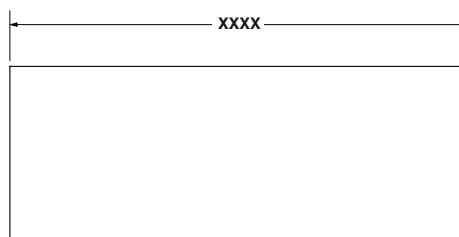
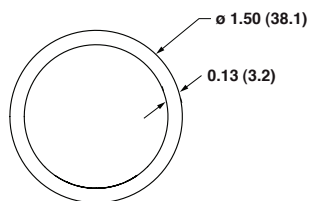
Length*	Code
100	0100
XXXX	XXXX
3650	3650

\*Lengths available: 100 mm to 3650 mm in 25 mm increments



Application notes

Tubes weight 0.05 lbs/in (928 g/m)



## Featherweight steel tubing 1.00" diameter



### Order information:

LWTS10EXXX

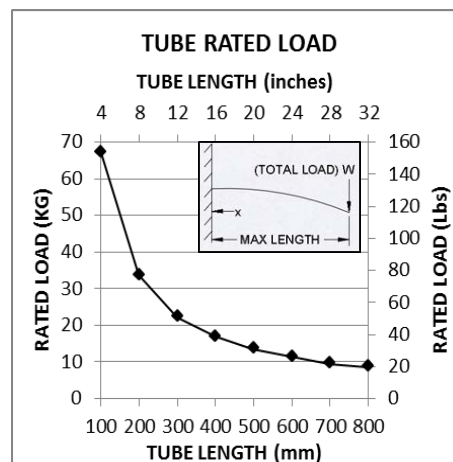
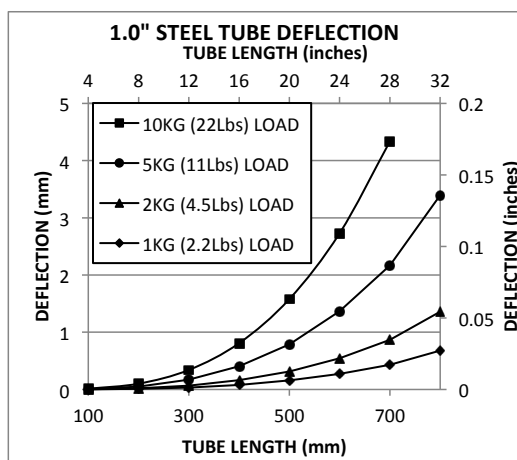
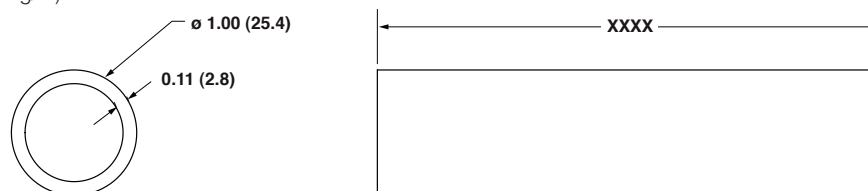
Length*	Code
100	0100
XXXX	XXXX
3650	3650



\*Lengths available: 100 mm to 3650 mm in 25 mm increments

### Application notes

Tubes weight 0.09 lbs/in (1607 g/m)



## Warning

These products are intended for use in industrial systems only. Do not use these products where pressures and temperatures can exceed those listed under Specifications.

Before using these products with fluids other than those specified, for nonindustrial applications, life-support systems, or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided. System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products, or posted on the Norgren website under "Downloads." System designers should also provide for all OSHA requirements including Title 29 CFR 1910.147 Lockout/Tagout.

It should be recognized that warnings are valid for any product, regardless of manufacturer, and are not restricted to products manufactured by Norgren. Norgren's reputation for product quality and performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our products in a reasonable and safe manner.

**Proposition 65:** These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.

## Warranty

Items sold by Norgren are warranted to be free from defects in materials and workmanship for a period of two years\* from the date of invoice, provided said items are used according to Norgren's recommended usages. NORGREN'S LIABILITY IS LIMITED TO THE REPAIR OF, REFUND OF PURCHASE PRICE PAID FOR, OR REPLACEMENT IN KIND OF, AT NORGREN'S SOLE OPTION, ANY ITEMS PROVED DEFECTIVE, PROVIDED THE ALLEGEDLY DEFECTIVE ITEMS ARE RETURNED TO NORGREN PREPAID. THE WARRANTIES EXPRESSED ABOVE ARE IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, EXCEPT AS STATED HEREIN.

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Norgren reserves the right to discontinue manufacture of any product or change product materials, design, or specifications.

# Featherweight Tooling

1.800.272.4511

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