LANCER® Series automatic Stud Driver

LANCER-1®
with Centering Guide with #10-AL Gage

LANCER-2®
with Posi-Load with Machine Load

The LANCER® Series:
- Smaller, lighter design
- Increased durability
- Cartridge design for easy maintenance

Cartridge Design for easy Maintenance

The **LANCER® Series** incorporates a unique cartridge design. By simply unscrewing the Assembly Cap, all internal parts may be literally poured out onto the workbench. This eliminates time consuming and costly repairs, as well as the need to keep expensive quantities of replacement tools on hand. All parts are made of special alloy steel, heat treated to optimum levels and are independently replaceable.

Power Source

With the **exception of impact and impulse drive tools**, all other power tools are acceptable as long as you stay within the recommended RPM range and torque limits listed here

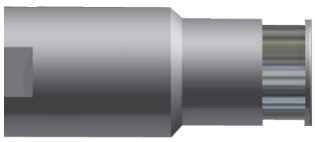
RPM and Torque Chart	
LANCER-1®	**LANCER-2®**
Maximum Torque Chart	
16.3 Nm	**47 Nm**
RPM	
Min. 50 / Max. 1500	**Min. 50 / Max. 1000**

LANCER® Series Performance-Options

Centering Guide
- use when studs are pre-started into workpiece

Posi-Load Stud Retainer
- for semi-automatic (hand loading) of stud into stud driver
- may also be used for machine loading of stud

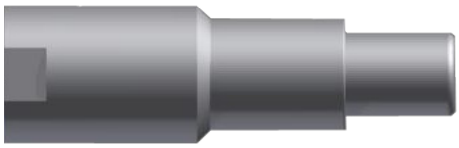
ML Machine-Load Stud Retainer
- for fully automatic pre-loading of stud into stud driver
- NOT recommended for pre-loading by hand



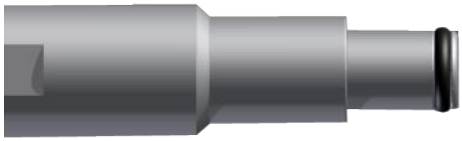
#10 Gage
- for adjustable stud projection height
- Studs must be pre-started into workpiece
- trips tool into "non-drive, free wheeling" mode when face of gage touches workpiece
- NOT recommended when driving studs to torque

#10 AL Auto-Load Gage
- for adjustable stud projection height
- for semi-automatic (hand loading) of stud into stud driver
- trips tool into "non-drive, free wheeling" mode when face of gage touches workpiece
- may also be used as stud retention with longer studs

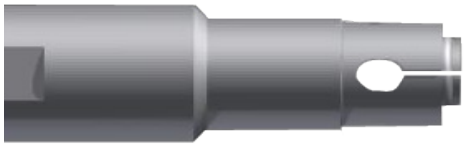
#10 ML Machine-Load Gage
- for fully automatic pre-loading of longer studs into stud driver
- may also be used as stud retention with longer studs, provides superior concentricity
- NOT recommended for pre-loading by hand



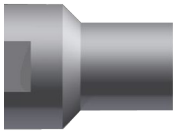
#11 thru #15 Gage
- for adjustable stud projection for longer studs or stud projections (see chart page 4)



#10 AL thru #15 AL
- use same as #10 AL Gage, but for longer studs or stud projections (see chart page 4)
- **- SPECIAL TO ORDER -**



#11 ML thru #15 ML
- use same as #10 ML Gage, but for longer studs or stud projections (see chart page 4)
- **- SPECIAL TO ORDER -**

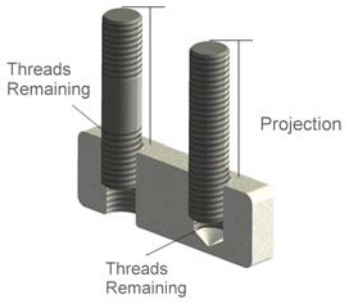


#1 open Gage
- use same as #10 Gage on studs with extremely short stud projections.

Projection Height Application

Driving Studs to Projection Height

Stud is not driven to the bottom of the tapped hole, threads are still visible above the surface of the workpiece.



The LANCER® stud driver can be used in two different ways to drive a stud to projection height:

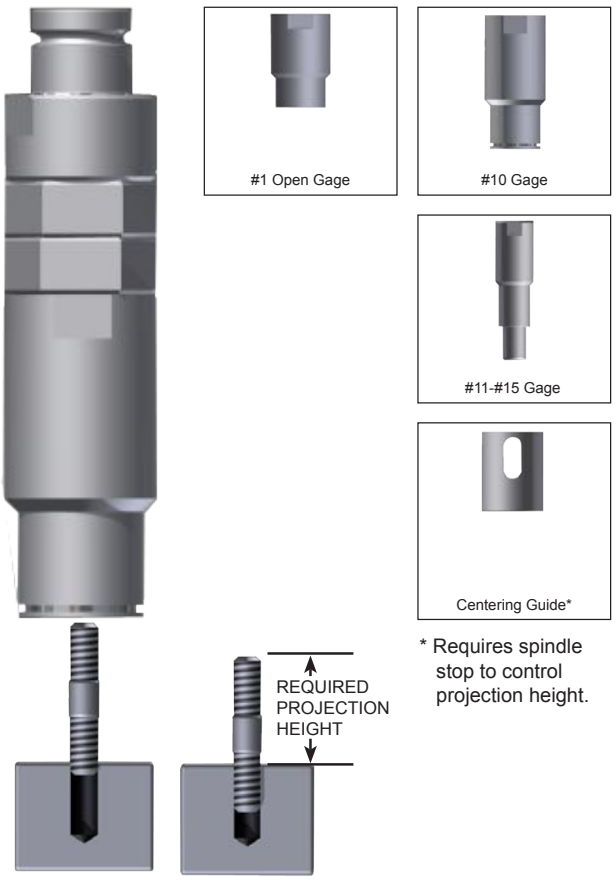
1. Height controlled by Gage on Stud Driver

The first method is to equip the stud driver with a trip gage that makes contact with the workpiece and limits the axial travel of the stud driver. Trip gages come in a variety of styles and sizes. Please see page 2 and 5.

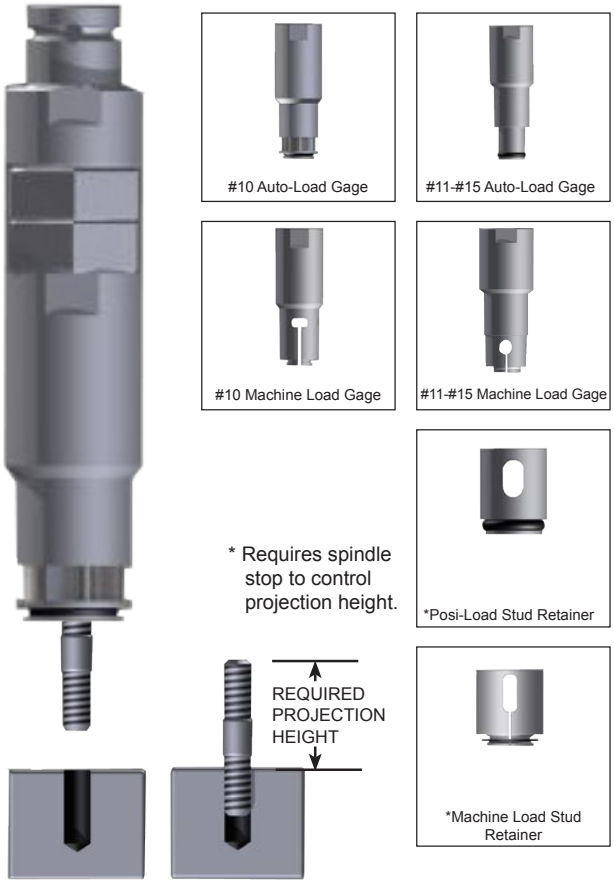
2. Height controlled by Spindle Stop

The second method is referred to as spindle stop. In a spindle stop application the projection height of the stud is controlled by limiting the axial travel of the drive spindle. In a spindle stop application the stud driver can be used without a gage. If a gage is used as a guide or holding device for pre-loading the stud into the driver, **it should not be allowed to touch the workpiece.**

Performance Options for Hand-Starting stud:



Performance Options for Pre-Loading stud:



Projection Height Range

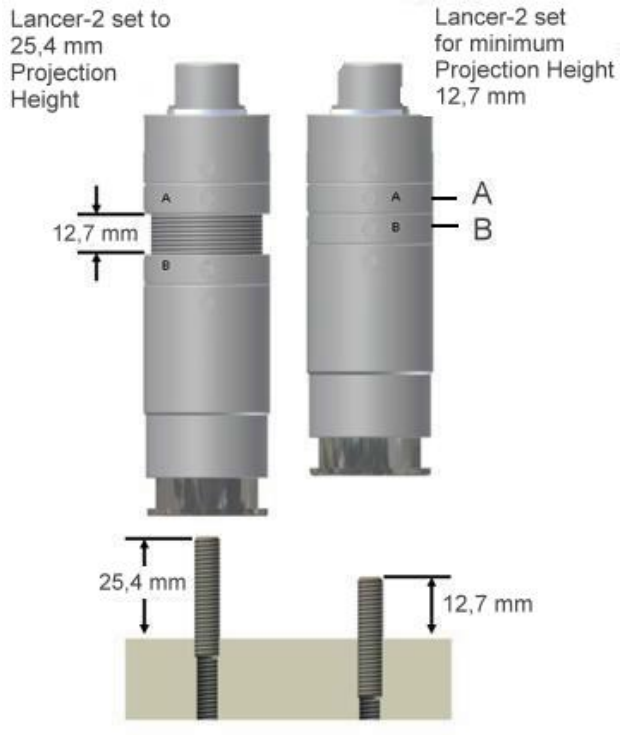
		LANCER-1® only	LANCER-1® and LANCER-2®		LANCER-2® only	Gages
Stud Size		**M4, M5**	**M6, M7, 1/4"**	**M8, 5/16"**	**M10 3/8", 7/16"**	
Stud Projection Millimeters	MIN	7.9	10.3	12.7	12.7	# 1 open Gage
	MAX	11.9	13.3	19.0	15.9	
	MIN	10.3	12.7	15.1	15.1	# 10 Gage
	MAX	41.2	43.6	46.0	46.0	
	MIN	14.1	16.5	18.9	18.9	# 10AL Gage
	MAX	45.1	47.4	49.8	49.8	
	MIN	20.6	23.0	25.4	-	**LANCER-1** #10 ML Gage
	MAX	51.5	53.9	56.3	-	
	MIN	-	20.9	23.3	23.3	**LANCER-2** #10 ML Gage
	MAX	-	51.8	54.2	54.2	
	MIN	39.7	42.0	44.4	44.4	#11 Gage #11 AL Gage #11 ML Gage
	MAX	70.6	73.0	75.4	75.4	

For longer or shorter projection requirements, consult us for special options or tool modifications.

Projection Height Adjustment

Tool shown is a LANCER-2®equipped with a #10 Gage.
Increasing the distance between lock rings "A" and "B" will produce a corresponding increase in the set projection height.

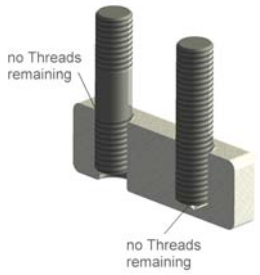
Example:



Torque Applications

Torque Applications

Stud is driven to the bottom of the hole or until the shoulder is flush with the workpiece to a predetermined projection height

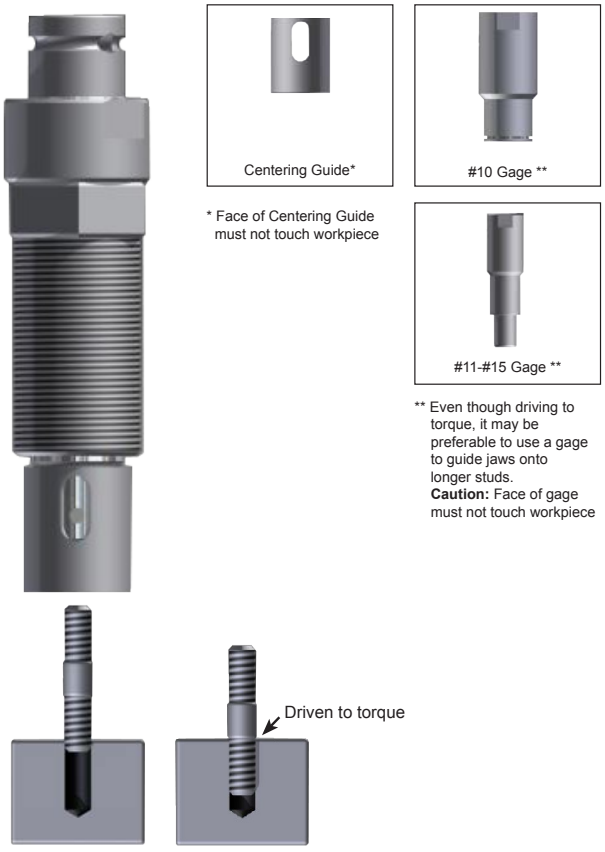


If a LANCER® is used on a torque application, the power source must have a torque control feature.

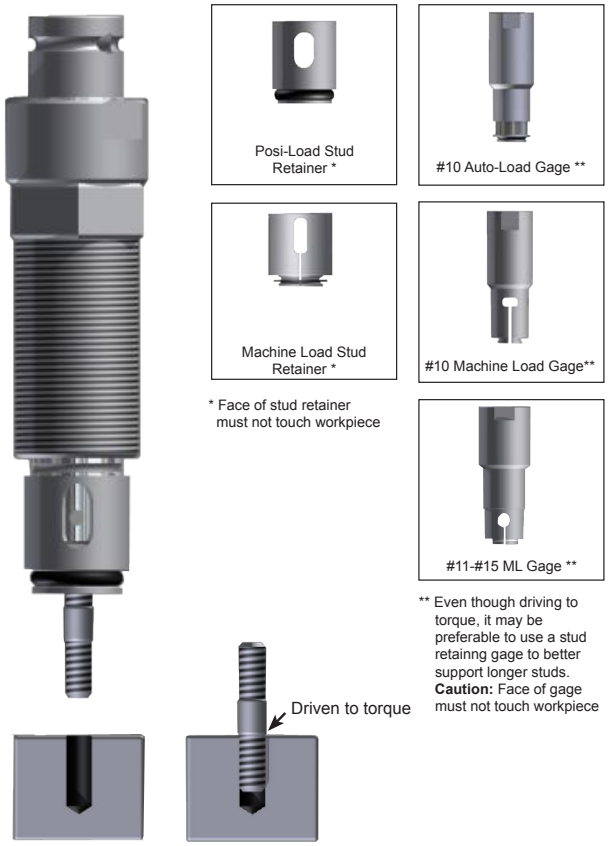
Torque control must be achieved by one of the following methods:
- Controlling the stall torque of the power tool.
- Electronically monitoring and controlling the torque.
- Mechanically interrupting the power source at the desired level.

When used on a torque application care should be taken to insure that all rotational force is eliminated before the LANCER® is removed from the stud. Failure to do this could result in damage to the stud or stud driver. This could also cause the jaws to lock onto the stud thus preventing easy removal of the **LANCER®** at the end of the drive cycle.

Options for Hand-Starting Studs:



Options for Pre-Loading Studs:



**Even though driving to torque it may be preferable to use a gage to guide jaws onto longer studs.
Caution: Face of gage must not touch workpiece.

TTSL® Spring Loaded Spindle Adaptor

Absorbs excessive spindle travel while maintaining axial pressure between spindle and drive tool.

- Allows axial float without sacrificing concentricity

- Adapts easily to all types of spindles.

Note:
At no time during the drive cycle should the **TTSL®** spring be completely compressed.

The **TTSL®** spring should not be used to continue the advancement of the stud drivers after the spindle drive mechanism has been halted.

Spindle advancement formula

For proper Spindle Feed & RPM, use this helpful formula:

Metric Threads

$$\frac{\text{Thread Pitch} \times \text{RPM.} \times 1{,}1}{60} = \text{Millimeters of spindle advancement per second}$$

Inch Threads

$$\frac{\frac{1}{\text{Thread Pitch}} \times \text{RPM.} \times 1{,}1}{60} = \text{Inch of spindle advancement per second}$$

LANCER-1® with TTSL-1®

Multiple and/or Automatic Stud Driving

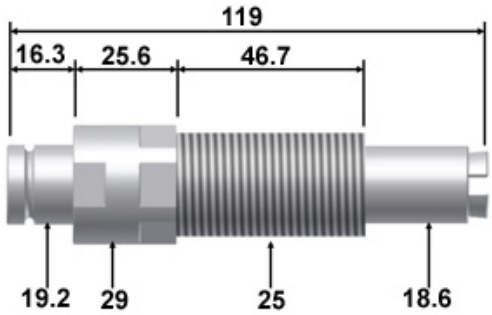
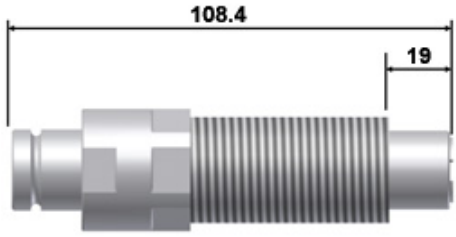
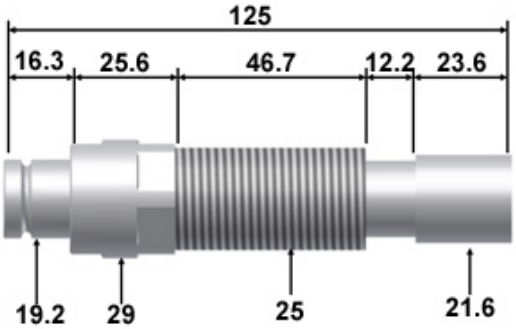
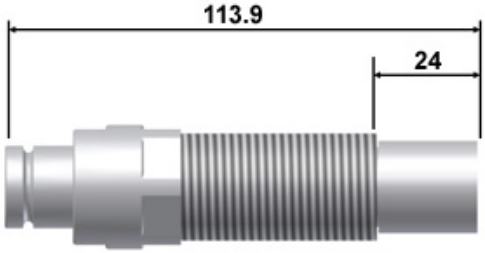
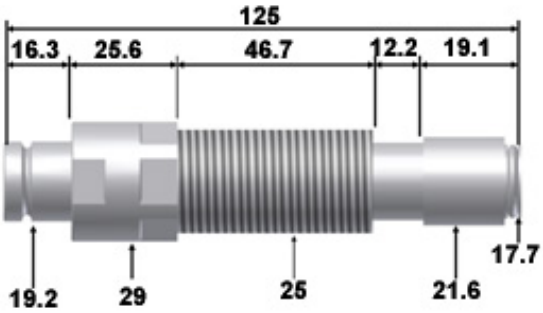
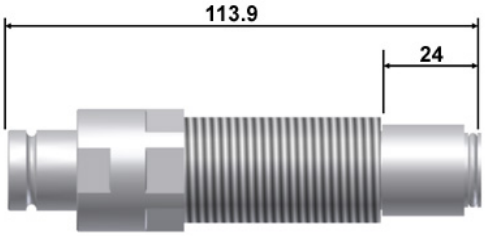
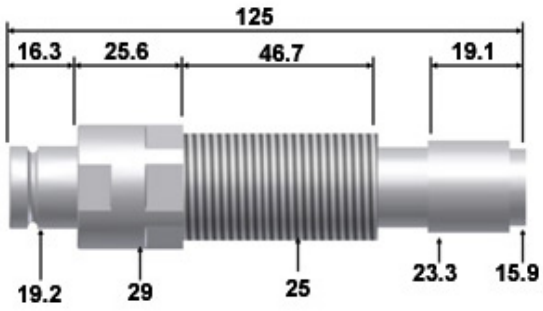
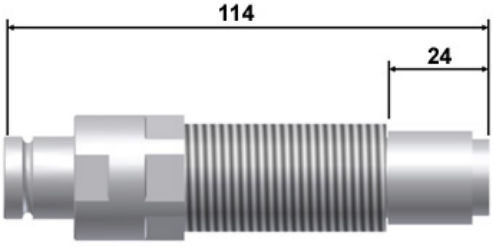
In all stud-driving applications it is necessary to coordinate the axial advancement of the spindle with the RPM and the thread pitch of the stud.

When the stud drivers are used on automatic or multiple spindle applications it becomes necessary to add a **TTSL®** between the stud drivers and the spindle to obtain the same result.

When the **TTSL®** is installed you simply allow the spindle to advance 10% faster than the stud is capable of screwing into the workpiece. The extra 10% will be absorbed by the **TTSL®** and the spring pressure of the **TTSL®** will assure that the stud driver remains loaded onto the stud. This greatly reduces the time needed to successfully setup and fine tune the machinery, and it significantly reduces the risk of tool failure or breakage.

LANCER-1® Dimensions

all dimensions are in millimeters

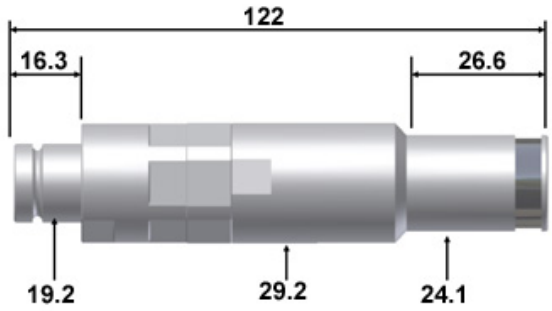
Jaws open, unloaded		Jaws closed, loaded
	**less Gage**	
	**with Centering Guide**	
	**with Posi-Load**	
	**with Machine-Load**	

LANCER-1® Dimensions

all dimensions are in millimeters

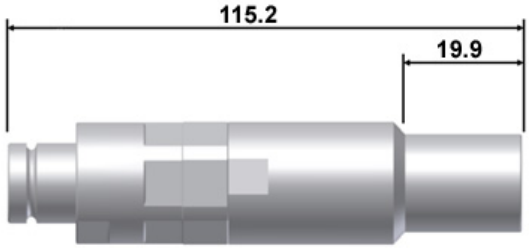
Jaws open, unloaded

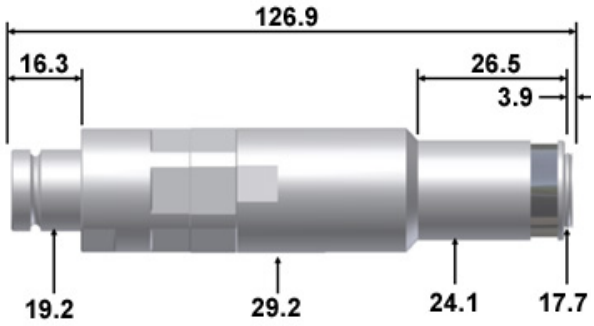
Jaws closed, loaded



with #10 Gage

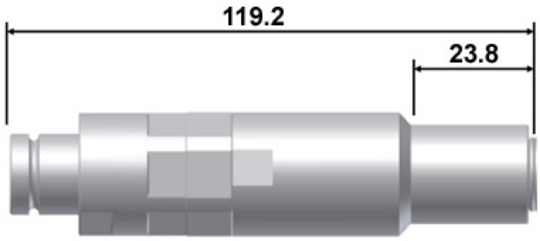
set at minimum projection

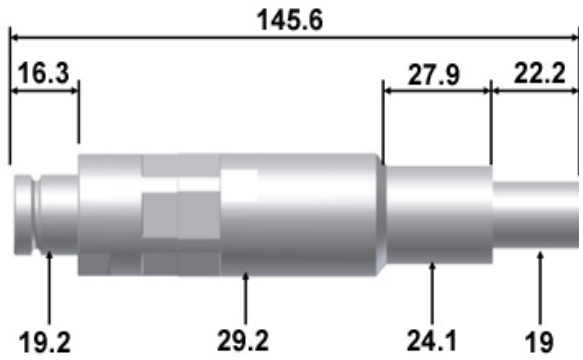




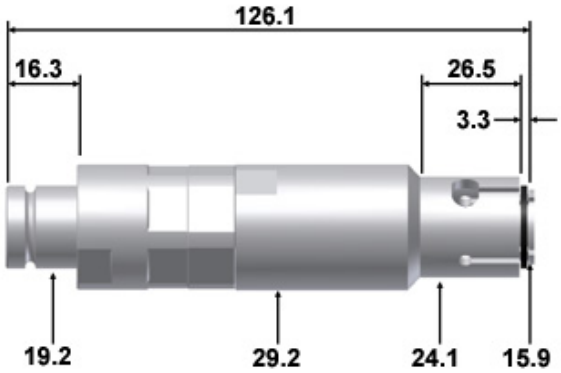
with #10 AL Gage

set at minimum projection



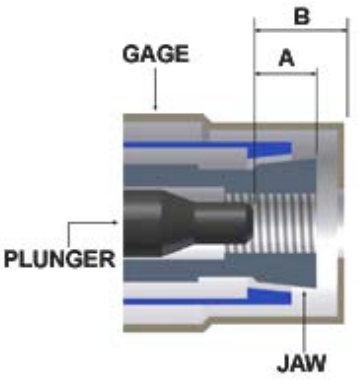


with #11 Gage set at minimum projection, loaded or unloaded
#11-AL Auto-Load Gage same dimensions
#11-ML Machine-Load Gage same dimension



with #10-ML Machine-Load Gage
set at minimum projection, loaded or unloaded

LANCER-1® Stud Engagement



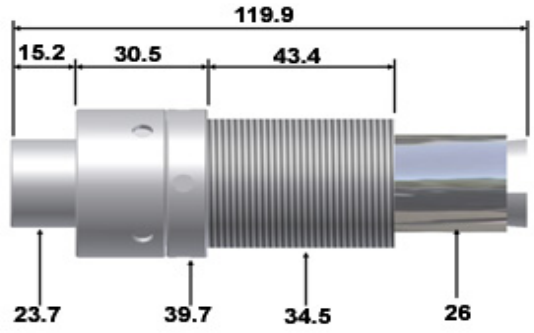
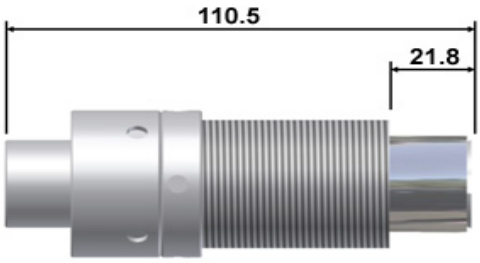
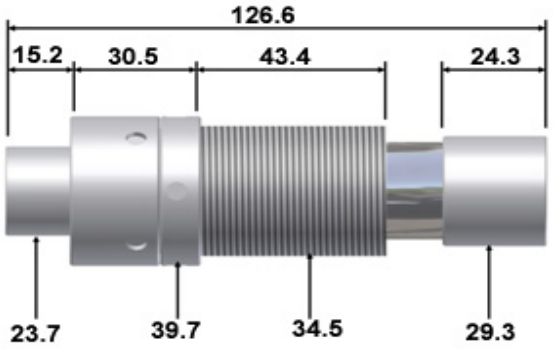
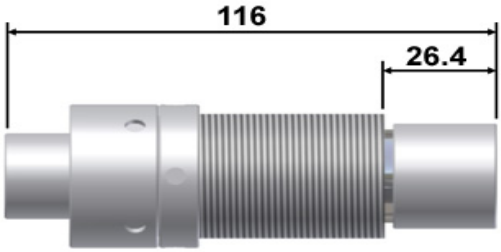
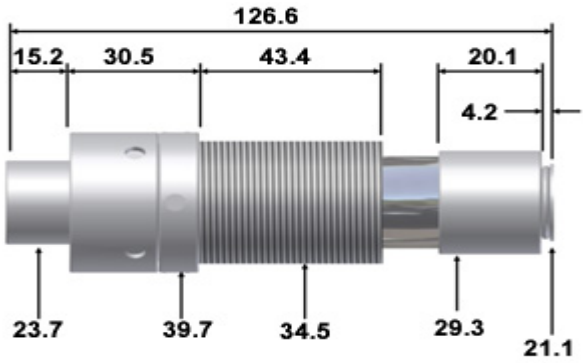
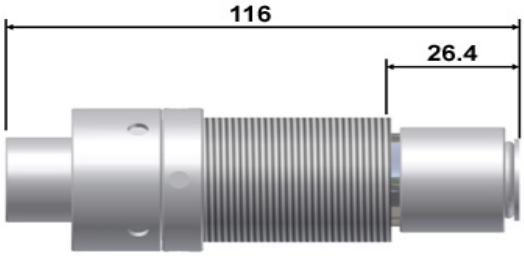
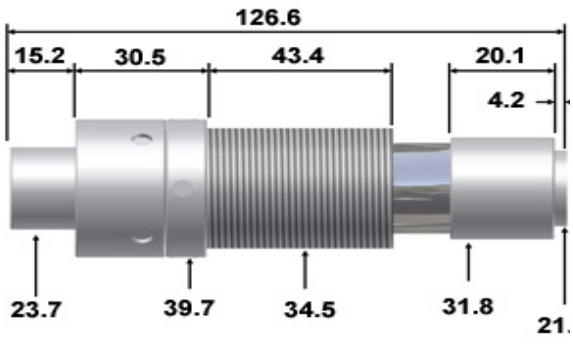
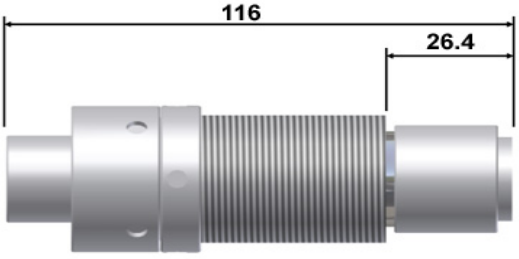
A: Thread Grip
This figure equals the distance from the end of the jaws to the tip of the plunger.

B: Total Stud Engagement In Fully Loaded Position
This figure equals the distance from the face of the tool to the tip of the plunger.

Stud Size		M4, M5	M6, M7, 1/4“	M8, 5/16“
A		7.1 mm	9.5 mm	12 mm
B	Centering Guide	10.3 mm	15.9 mm	18.3 mm
	Posi-Load Stud Retainer	10.3 mm	15.9 mm	18.3 mm
	Machine-Load Stud Retainer	on request	15.9 mm	18.3 mm
	#10 Gage set at minimum projection	14.3 mm	16.7 mm	19 mm
	#10 AL Auto-Load Gage set at minimum projection	18.3 mm	20.6 mm	23 mm
	#10 ML Machine-Load Gage set at minimum projection	24.6 mm	27 mm	29.4 mm
	#11 Gage **#11-AL Auto-Load Gage** **#11-ML Machine-Load Gage** set at minimum projection	44.5 mm	46.8 mm	49.2 mm

LANCER-2® Dimensions

all dimensions are in millimeters

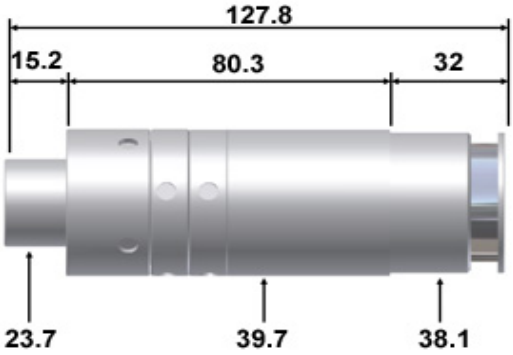
Jaws open, unloaded		Jaws closed, loaded
	**less Gage**	
	**with Centering Guide**	
	**with Posi-Load**	
	**with Machine-Load**	

URBAN SCHRAUBSYSTEME

LANCER-2® Dimensions

all dimensions are in millimeters

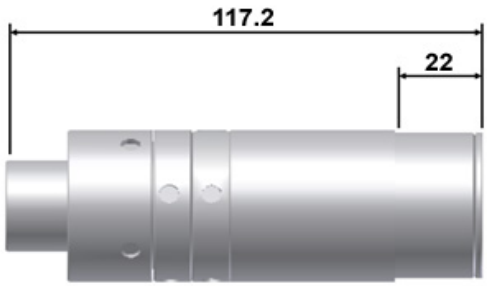
Jaws open, unloaded

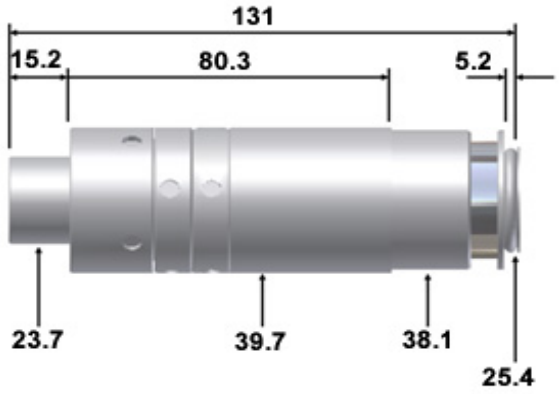


with #10 Gage

set at minimum projection

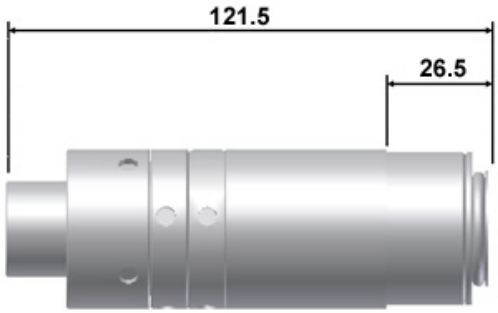
Jaws closed, loaded

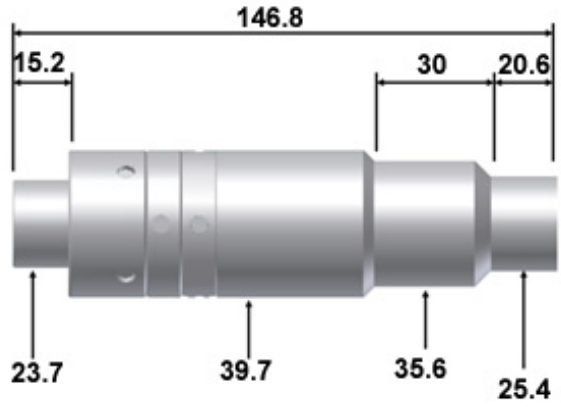




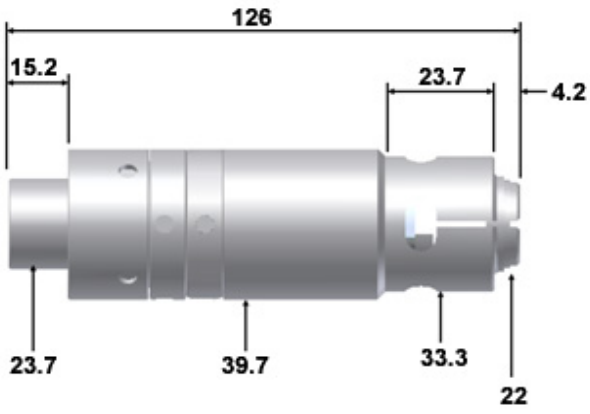
with #10 AL Gage

set at minimum projection



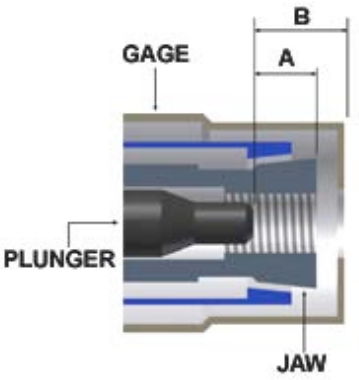


with #11 Gage set at minimum projection, loaded or unloaded
#11-AL Auto-Load Gage same dimensions
#11-ML Machine-Load Gage same dimension



with #10-ML Machine-Load Gage
set at minimum projection, loaded or unloaded

LANCER-2® Stud Engagement



A: Thread Grip
This figure equals the distance from the end of the jaws to the tip of the plunger.

B: Total Stud Engagement In Fully Loaded Position
This figure equals the distance from the face of the tool to the tip of the plunger.

Stud Size		M6, M7, 1/4“	M8, M10, 5/16“, 3/8“, 7/16“
A		9.5 mm	12 mm
B	**Centering Guide**	15 mm	17.5 mm
	Posi-Load Stud Retainer	15 mm	17.5 mm
	Machine-Load Stud Retainer	15 mm	17.5 mm
	#10 Gage set at minimum projection	16.7 mm	19 mm
	#10 AL Auto-Load Gage set at minimum projection	20.6 mm	23 mm
	#10 ML Machine-Load Gage set at minimum projection	25.4 mm	27.8 mm
	#11 Gage **#11-AL Auto-Load Gage** **#11-ML Machine-Load Gage** set at minimum projection	46.8 mm	49.2 mm

LANCER® Stud Driver – Ordering Information

Tool Size	Stud Size *(Choose one)*		Gages *(Choose one)*	Female Adaption *(Choose one)*
Lancer-1	8-32 10-24 10-32 1/4"-20 1/4"-28 5/16"-18 5/16"-24	M4 x 0.7 M5 x 0.8 M6 x 1.00 M7 x 1.00 M8 x 1.25 M8 x 1.00	Centering Guide Posi-Load Machine-Load* #10 Gage #10 AL Gage #10 ML Gage* #11 - #15 Gage #11 – #15-ML Gage* #1 open Gage	M14 x 1.00 Thread 3/8" Square 3/8"-24 Thread 1/2"-20 Thread 5/8"-16 Thread 1/2" Round
Lancer-2	1/4"-20 1/4"-28 5/16"-18 3/8"-16 3/8"-24 7/16"-14 7/16"-20	M6 x 1.00 M7 x 1.00 M8 x 1.25 M8 x 1.00 M10 x 1.50 M10 x 1.25		M14 x 1.00 Thread M16 x 1.00 Thread 3/8"-24 Thread 1/2"-20 Thread 5/8"-16 Thread 3/8" Square 1/2" Round 5/8" Round

* **all Machine Load (ML) Types must be fitted to your stud. Therefore sample studs must be sent with purchase order.**

Ordering Process:

1. Choose a tool size depending from Torque, Stud Size and Clearance.
2. Choose a Stud Size.
3. Choose a Gage (page 2).
4. Choose a Drive Size (see above Chart).

We have specialized in stud driving and offer many years of experience in this field. We encourage you to contact us before proceeding with any new applications involving our tools. If you are nor sure to select the correct tool for your application, please fill our online contact form. We will be happy to quote to you the tool for your job.

Please include sample studs with your inquiry or purchase order if possible.

Automatic / Multiple Spindles

For enhanced performance always use a **TTSL® Spindle Adaptor** with **LANCER®** Stud Drivers.

Important:

Do not use LANCER® Stud Drivers with Impact Wrenches.

Patents: U.S. Patents: 4,470,329 4,476,749, 4,513,643 4,819,519 5,119,700 worldwide