



USER MANUAL

Doughty Spigot and Receiver Clamps



Original Instructions

Part No's:

T57215 - T58026

Loading Table

Rated Load with a Safety Factor of 8:1 WLL1 DGUV/BGV C1 for Lifting Load

Rated Load with a Safety Factor of 4:1 WLL2 2006/42/ES for Static Load

Part No.	Tube Diameter	Description	Finish	Accessory	WLL ¹ (Kg) Lifting	WLL ² (Kg) Static
T57215	Ø48-51mm	Doughty Little Tom Clamp	Polished	M12 Aluminium Spigot	N/A	N/A
T57216	Ø48-51mm	Doughty Little Tom Clamp	Black	M12 Aluminium Spigot	N/A	N/A
T57223	Ø48-51mm	Doughty TV Clamp	Polished	29mm Receiver	125Kg	250Kg
T57224	Ø48-51mm	Doughty TV Clamp	Black	29mm Receiver	125Kg	250Kg
T57225	Ø48-51mm	Doughty Big Ben Clamp	Polished	28mm Spigot	100Kg	200Kg
T5722501	Ø48-51mm	Doughty Big Ben Clamp	Black	28mm Spigot	100Kg	200Kg
T57227	Ø48-51mm	Doughty Articulated Big Ben Clamp	Polished	28mm Articulating Spigot	100Kg	200Kg
T57235	Ø48-51mm	Doughty TV Quick Clamp	Polished	29mm Receiver	100Kg	200Kg
T57236	Ø48-51mm	Doughty TV Quick Clamp	Black	29mm Receiver	100Kg	200Kg
T58018	Ø48-51mm	Doughty Slimline Big Ben Coupler Euro	Polished	M12 Female TV Spigot	100Kg	200Kg
T58026	Ø48-51mm	Doughty Slimline Little Tom Coupler	Polished	M12 Spigot	N/A	N/A

The Doughty Clamp range consists of various clamps used to lift loads or make structural connections. Couplers are used in the entertainment market. They can be used for permanent support structures in places of entertainment such as museums, event venues, theatres etc.

Lifting loads is inherently dangerous so Doughty Clamps are strictly for professional use only. Only competent persons are permitted to install and use Doughty Clamps. A competent person in this respect is an individual with relevant technical education, training and/or experience enabling him or her to perceive risks and to avoid hazards occurring during use of a product.

The load capacity differs depending on the model and the safety factor required. Clamps are suitable to fit steel and aluminium tubes of diameters ranging from 48mm to 51mm depending on the model. Couplers are marked with the working load limit corresponding to the 8:1 safety factor in order to meet the German standard for overhead lifting.

Most Clamps are available in Silver (polished aluminium) or black powder coating. Special attention has been taken to safety. Therefore the TUV test certificates indicate multiple working loads. Depending on the application or local applicable legislation max working load can be chosen.

Clamps can be judged as a lifting accessories under the EU machine Directive 2006/42/EC as well as German DGUV17 for lifting and holding loads above persons. They can also be used as a joining part in constructions.

All communications will be carefully considered for future printings of this manual and changes to our products. Some models of clamps are composed of different elements each with an individual Working Load. The lowest of the working loads determines the overall strength and thus shall be used as max working Load for the application.

When Doughty Clamps form part of a lifting machine or lifting system, the lifting machine or system shall be tested and marked with its WLL and appropriate certification issued. The resulting forces in the structure attached shall be verified before applying a load.



Warning

Check local legislation for the application of use and adapt the use where ever necessary.

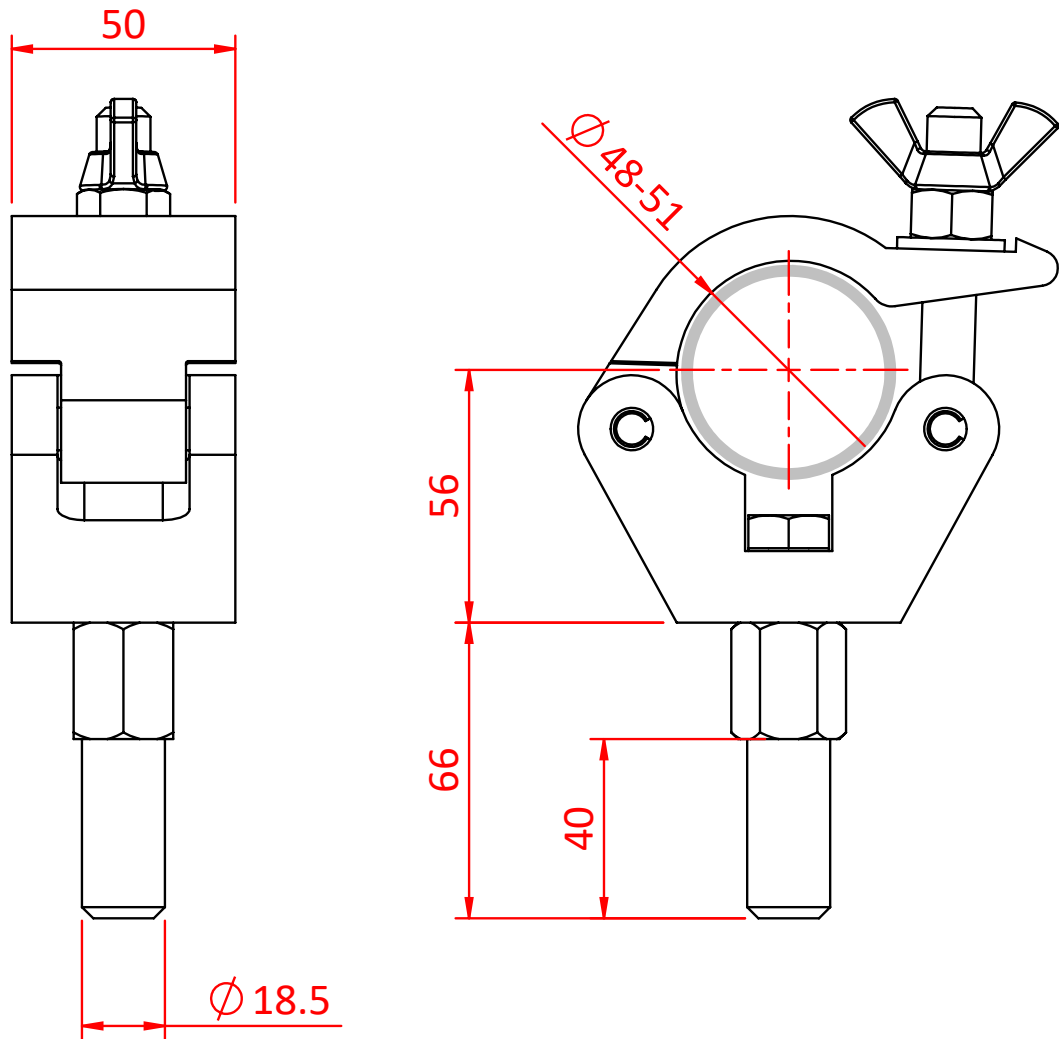
The intended use of Clamps is to be used as a lifting accessory to hang loads or create a connection between structural elements. Loads can be, but not limited to, lighting fixtures, video projectors, sound systems and stage sets. Structural elements can be pipes, trusses, tubular frame works or lifting brackets.

Any use other than that mentioned is considered to be a case of misuse. The user/operator and not the manufacturer shall be liable for any damage or injury resulting from such cases of misuse. The use of Clamps for scaffolding purposes under EN74 is explicitly excluded from the intended use.

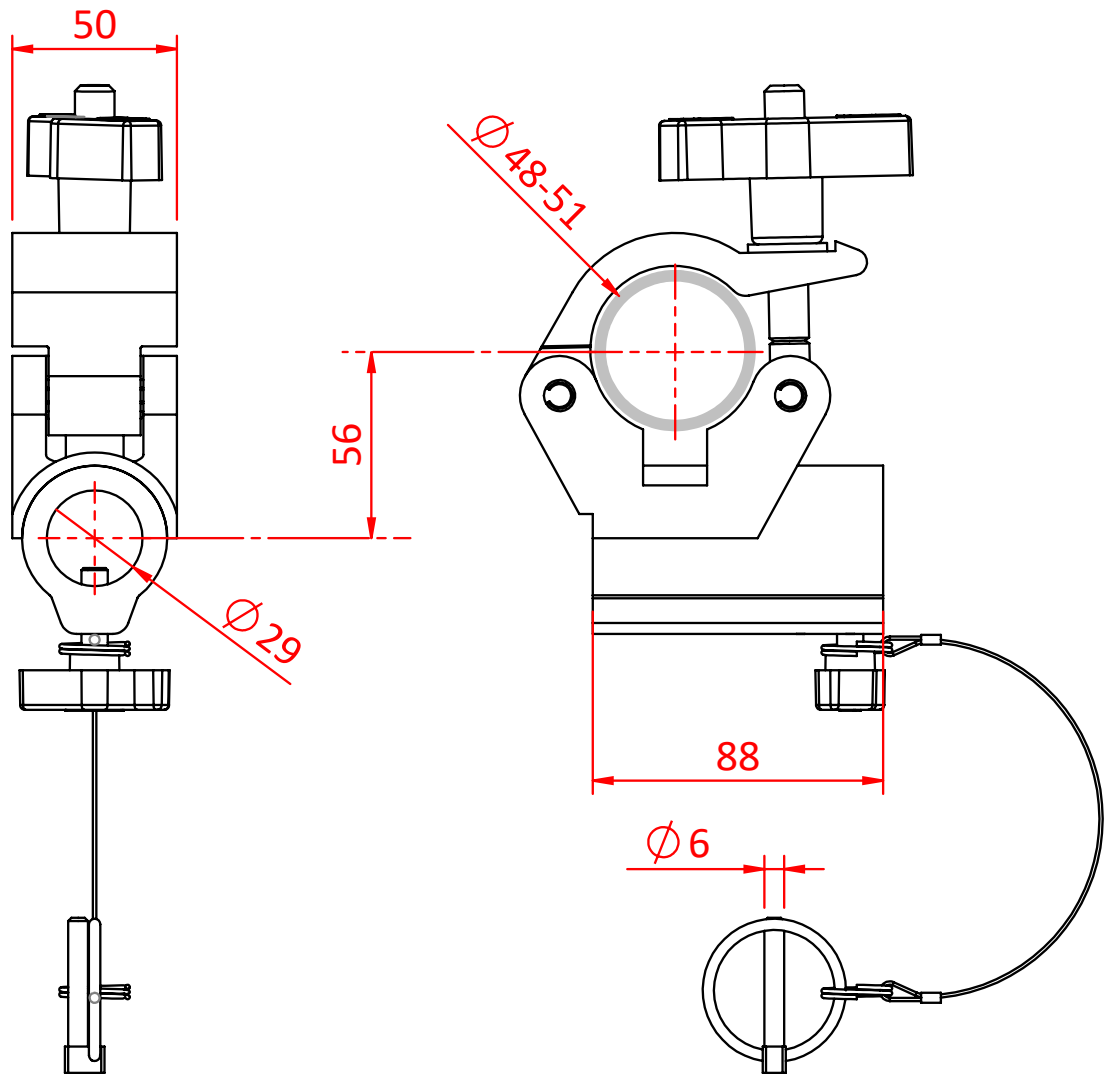
Limitations of use

- The Clamps can be operated in -20° Celsius up to +60° Celsius.
- When used permanently outdoors it is advised to use the versions with stainless steel hardware in order to avoid galvanic corrosion.
- For salt water environments, please use our All Weather Clamp range.
- Doughty Clamps shall only be used on steel or aluminium tubes or bars.
- When Doughty Clamps are used as part of an outdoor lifting system special factors such as ground condition and profile, wind loading, water accumulation on temporary structures and other criteria shall also be taken into account.
- When Clamps are used to secure equipment which is moved or suspended over areas where persons are present an M12 self-locking nut shall replace the standard nut and wingnut.
- The use of Clamps is the sole responsibility of the user.
- To use the Clamps the user must also observe the safety regulation, the assembly and disassembly instructions to be found in this manual.
- All persons who use and service this device have to be acquainted with this manual and must be informed about its potential hazards.
- It is also imperative to observe the local accident prevention regulations and/or occupational health and safety regulations.
- Care must be taken when used in conjunction with thin wall truss.
- The manufacturer is not liable for indirect consequential damage and financial loss. The manufacturer shall not be liable for any changes made to the device nor for any damage resulting from such changes.

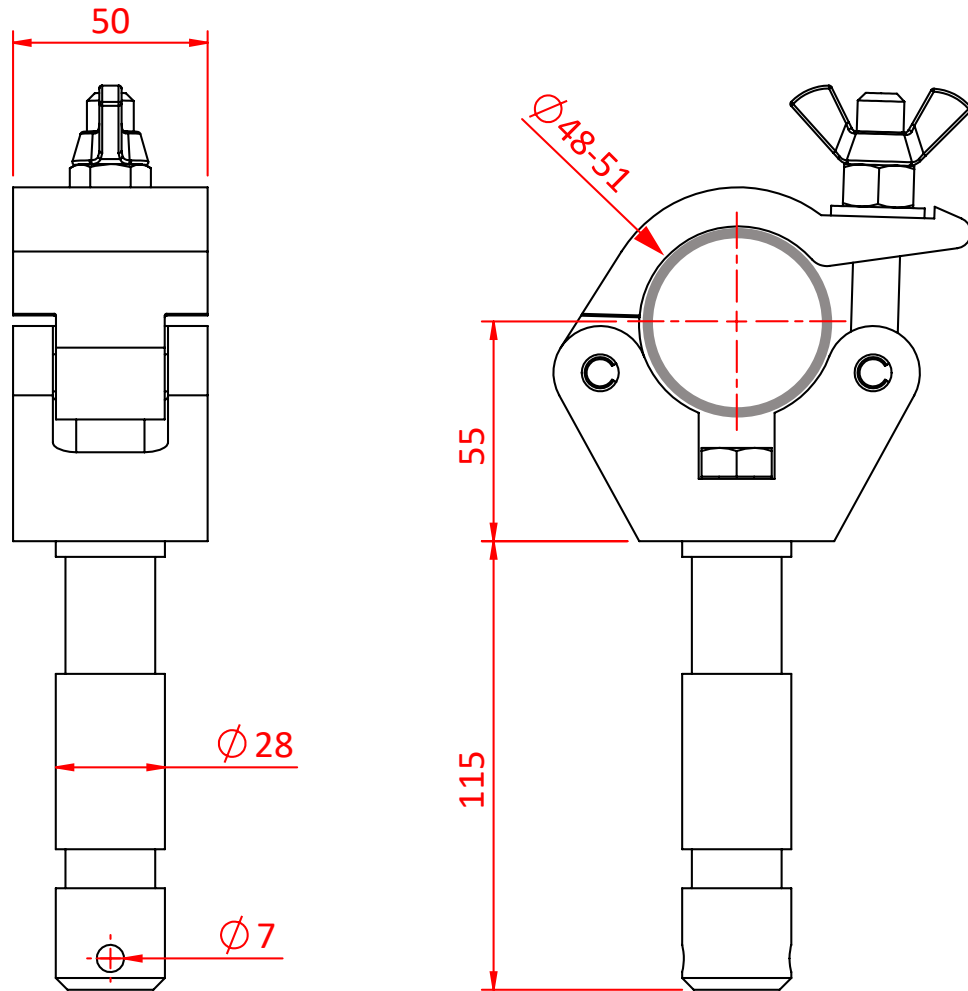
TYPICAL DOUGHTY LITTLE TOM CLAMP



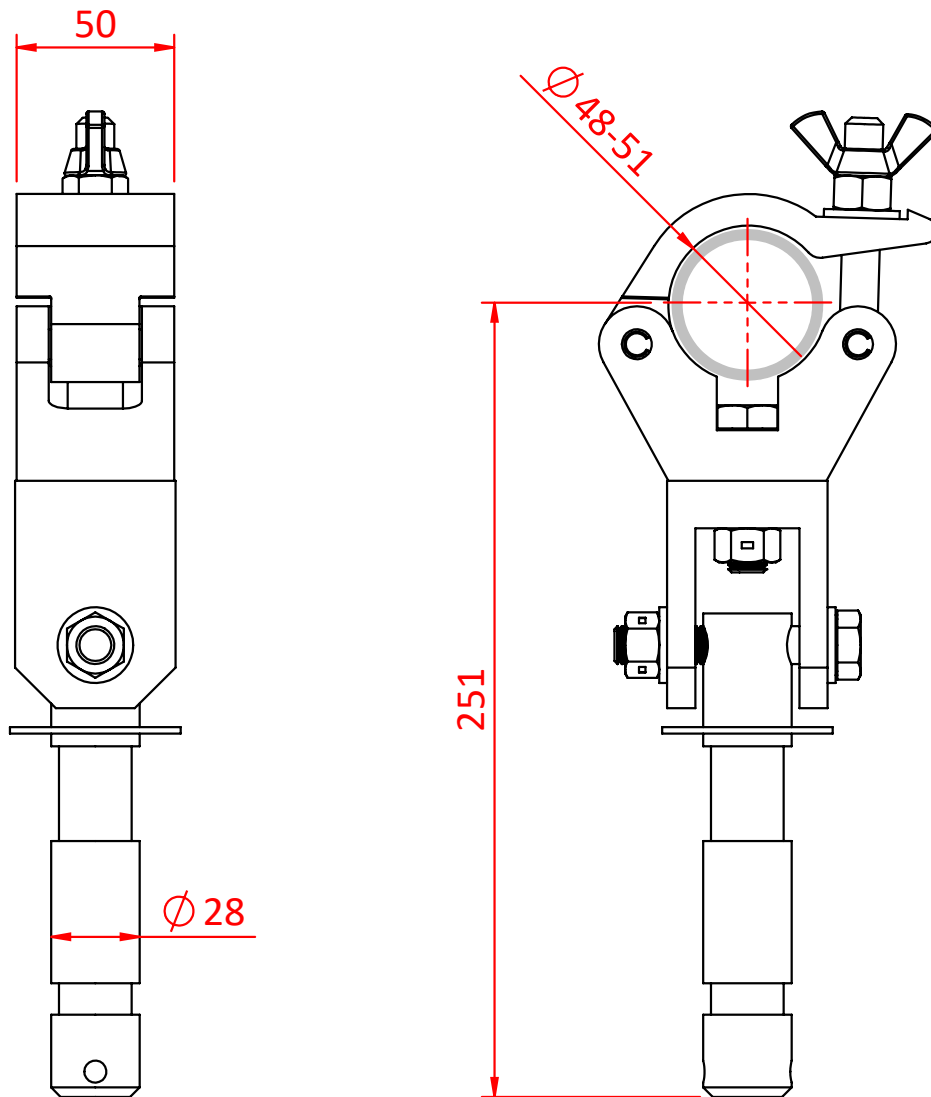
TYPICAL DOUGHTY TV CLAMP



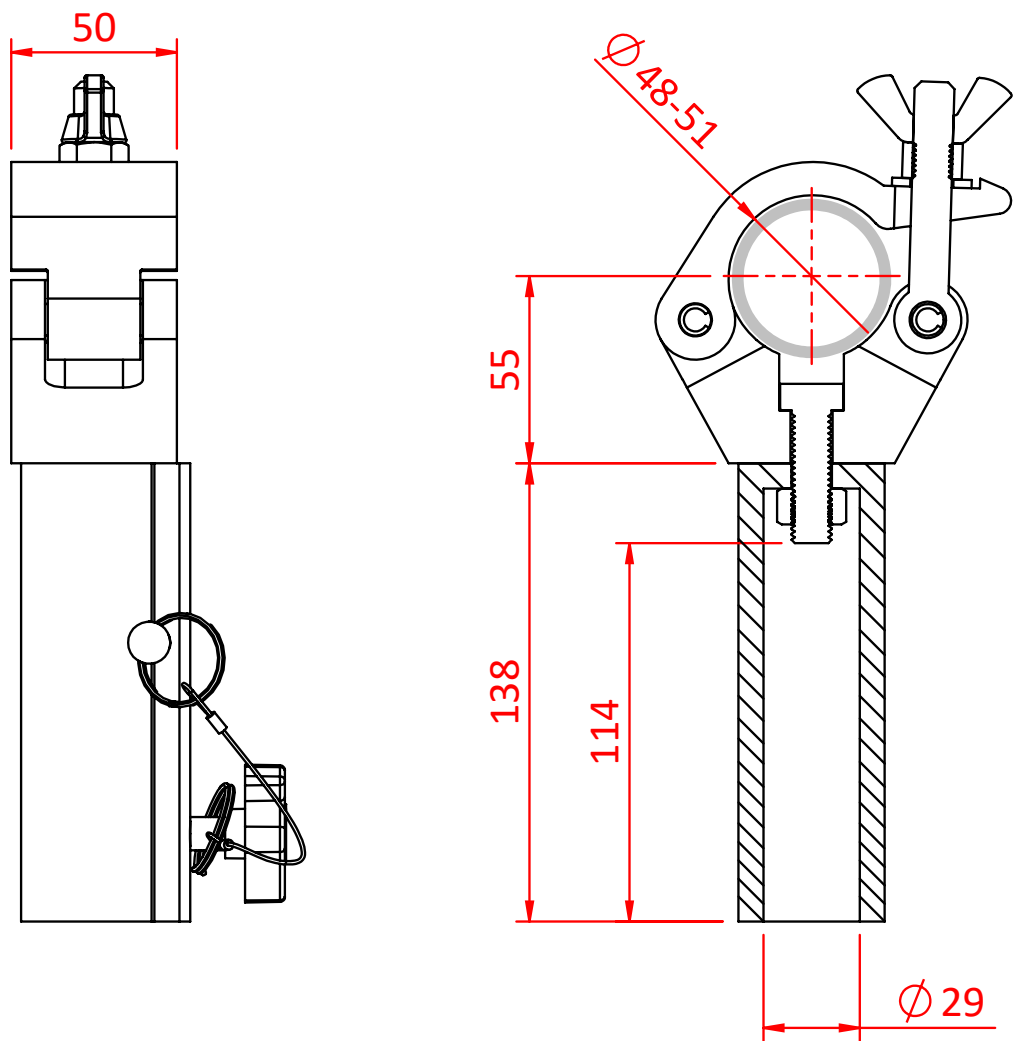
TYPICAL DOUGHTY BIG BEN CLAMP



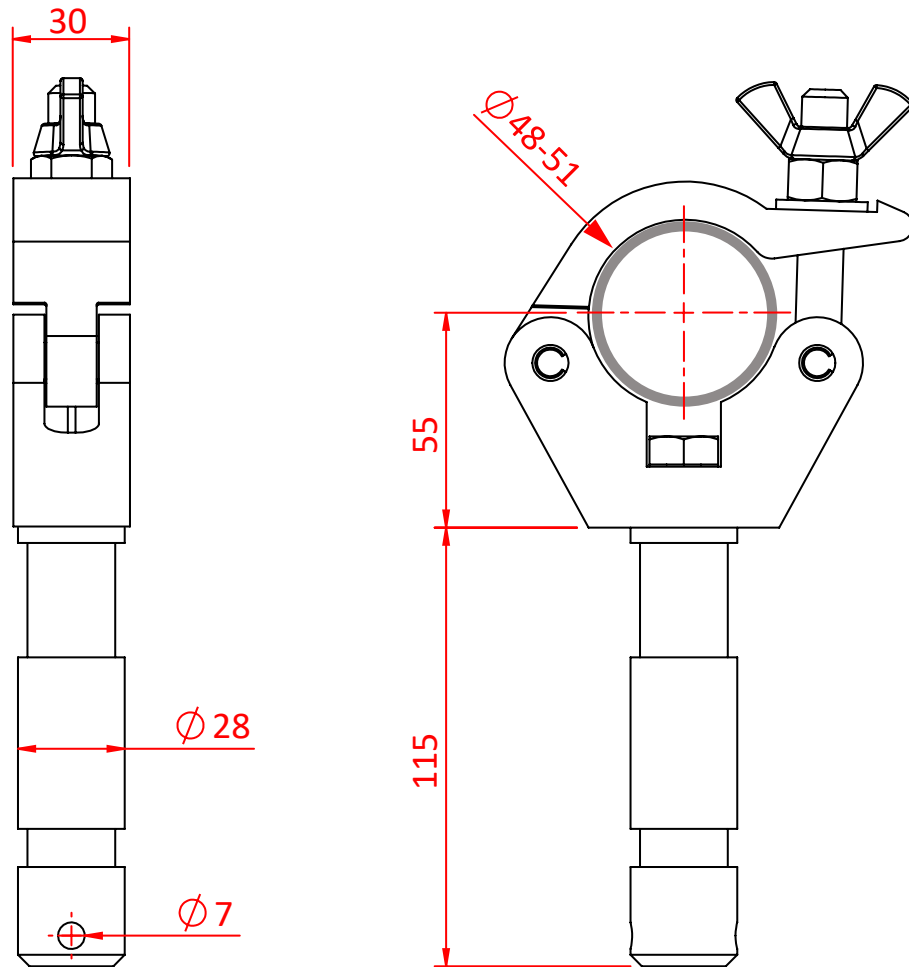
TYPICAL DOUGHTY ARTICULATED BIG BEN CLAMP



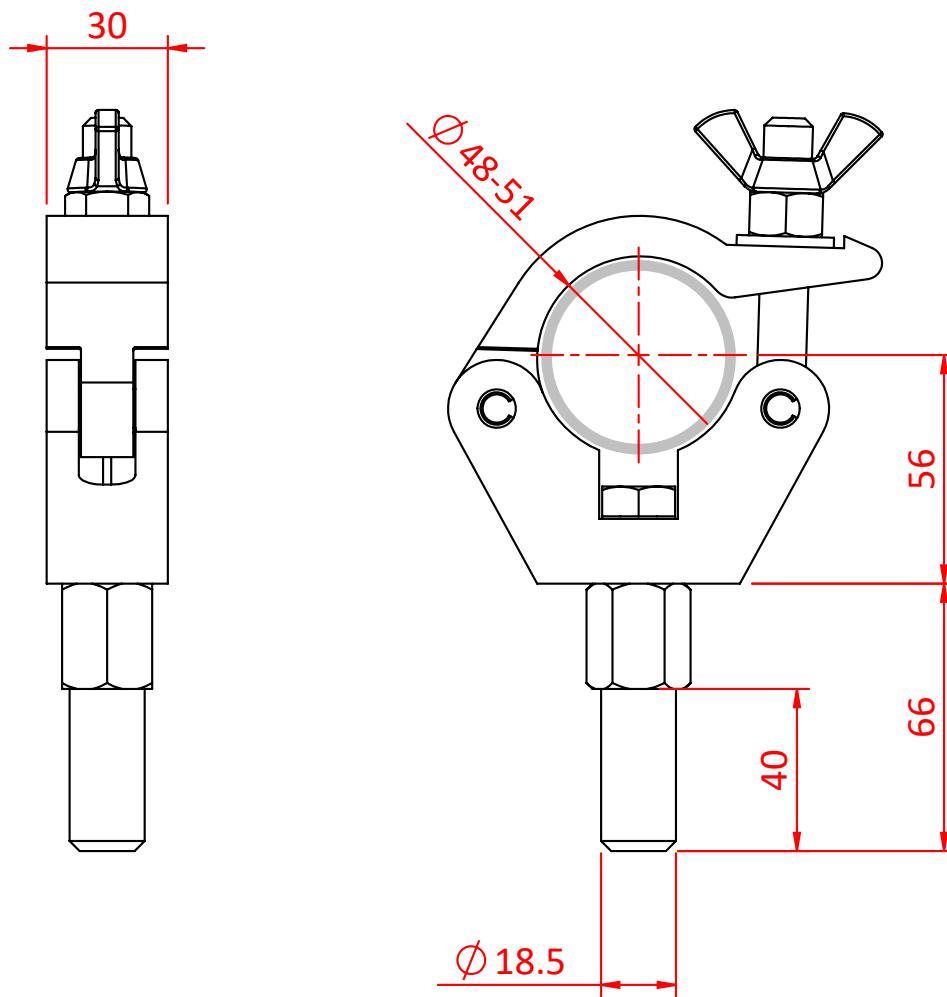
TYPICAL DOUGHTY TV QUICK CLAMP



TYPICAL DOUGHTY SLIMLINE BIG BEN COUPLER - EURO



TYPICAL DOUGHTY SLIMLINE LITTLE TOM COUPLER



TYPICAL DOUGHTY CLAMP LABEL

Part No (See Loading Table) — **T5xxxx - Ø48-51mm** — *Tube Diameter*

Works Order No — **Wo. 2021001**



Post Code — **BH24 1NZ, UK**

TUV Mark —   — *Read Instructions*

TUV Mark —  — *CE mark*
Year of Manufacture — **24** — *Year of Manufacture*

Working Load Limit (See Loading Table) — **WLL xxxkg**

The following modifications are allowed to be executed by third parties:

Painting:

- To paint a clamp, cover all bolts and nut with tape.
- Use blasting to roughen the surface and to degrease the clamp.
- Use a wet-paint or powder coating paint system to colour the part.

Safety Instructions:

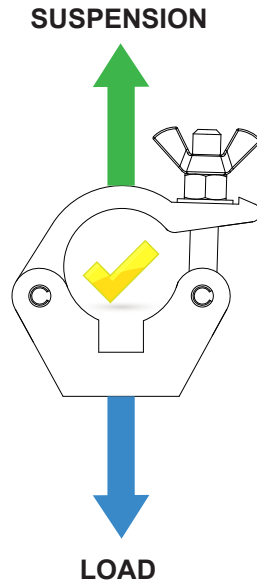
For health and safety reasons people assembling, disassembling, transporting, maintaining and cleaning Clamps should wear adequate Personal Protection Equipment such as, but not limited to: gloves, hard hats and safety shoes. In line with the use of PPE organisational measures may need to be implemented to keep the area beneath installations clear of personnel.

- Clamps shall be solely used for the range of pipe diameters as stated on the Clamps.
- Do not exceed the working load limit engraved on the Clamps.
- Make sure the resulting forces on the supporting structure are approved by a competent person.
- All loads imposed shall be considered. E.g. dynamic forces caused by the lifting machinery.
- Nuts and bolts shall be tightened by means of a tool in such a manner they cannot be released by man power.
- When loads are using electrical power, equip-potential bonding shall be put in place.
- Clamps shall be inspected by a competent person as often as required but with a minimum of once a year.
- Inspect equipment before every use. Damaged Clamps shall be taken out of service.
- Maintenance and repairs can be undertaken only by authorised personnel. If in any doubt contact the manufacturer.
- Do not throw Clamps.



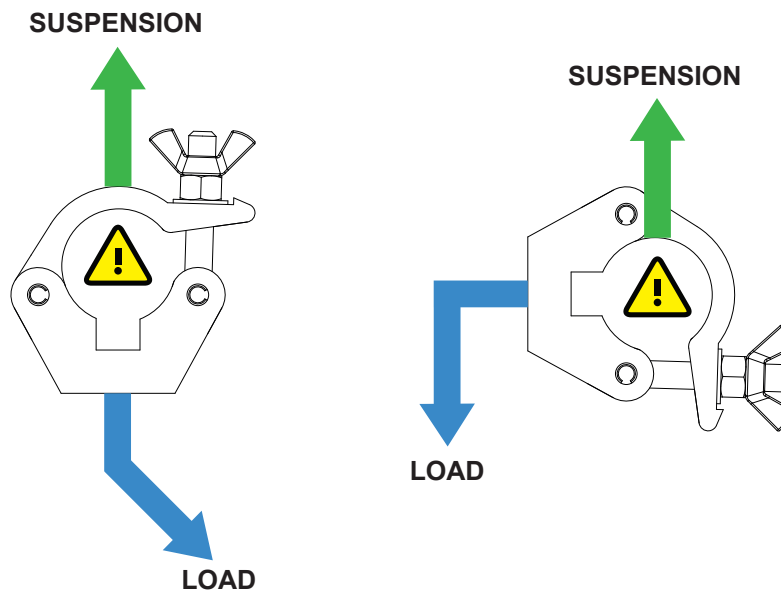
Warning

The working load engraved on the clamp is solely for a straight pull between the supporting pipe and connection point on the clamp.



Warning

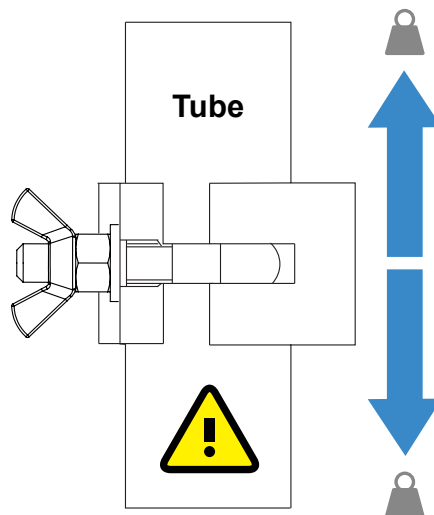
The methods of suspension that are shown below creates torsional forces, influencing the stability of the supporting structure and lowers the working load of the clamp. This needs to be checked by a competent person.





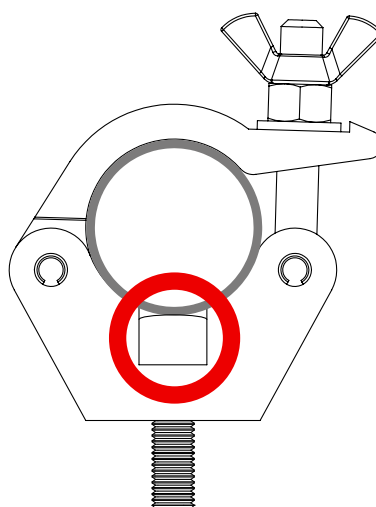
Warning

Using clamps where the direction of the load is parallel to the tube depends on, but not limited to, contact surface, material, friction resistance and the applied torque to the clamps wingnut/nut. This type of application significantly reduces the stated WLL and should be used with extreme caution.



Warning

Do not use fixings that, when tightened, will contact the tube or barrel on which the clamp is fixed, as highlighted below.



CLAMPS USED AS A LIFTING ACCESSORY:

2006/42/EC - Machinery Directive.

DGUV Rules 115-002 - Regulations for stages and studios (Formerly known as BGVc1)

DGUV Information 215-313 - Safety at productions and events for television, radio, film, theatre, exhibitions: Loads above persons (Formerly known as BGI 810-3)

BS7906-1:2005 - Lifting equipment for performance broadcast and similar applications. Part 1 specifications for the design and manufacture of above stage equipment.

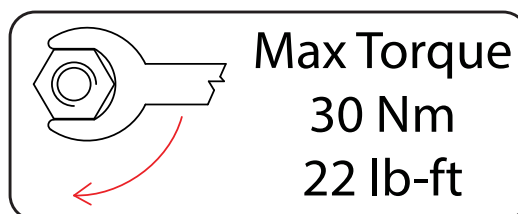
TRANSPORT AND STORAGE

- Due to the relatively high self-weight it is advised to keep storage bins as small as possible in such a manner they can be lifted by one person. Local legislation for maximum load to be lifted by persons shall be adhered to.
- Before Clamps are put into storage they shall be checked for defects. Defective Clamps shall be clearly marked and put aside in such a way they cannot be re-used.
- Put the lid and eye bolt together and hand tighten. This way bolts will not get lost during transport.
- Ensure the product is stored and kept in a dry, ventilated environment to avoid corrosion.
- Do not store aluminium Clamps in steel bins.
- Use appropriate packaging to prevent damage to parts and threads when transporting Clamps.

Big Ben and Articulated Big Ben Clamps consist of a 28mm spigot fixed to a Doughty Clamp. The articulated version allows the spigot to rotate through two axes. Big Ben Clamps are commonly fitted to a receiver mounted on a stand. Once the clamp has been inserted into the receiver and locked into place, the barrel or truss can be fitted into the clamps following the instructions below.

TV Doughty Clamps and TV Quick Clamps consist of a 29mm receiver fitted to a Doughty Clamp. Commonly TV clamps will be mounted onto a section of barrel or truss following the instructions below. The objects to be suspended will typically be fitted with a 28mm TV spigot which should be inserted into the receiver and secured with the Doughty knob. In the case of the TV Doughty Clamp, the sword pin should also be inserted into the receiver. The TV Quick clamp has a lynch pin which should be inserted into the hole provided in the spigot.

1. Open the lid of the clamp.
2. Fold the eye bolt and lid aside.
3. Hang the clamp in the desired position. Tighten the bolt before the load is fully supported
4. Tighten the wingnut/nut/bolt using tool only. Do not apply a torque greater than 30Nm/22lbft.
5. Use a secondary safety if legislation requires.



Warning

Over tightening the nut or bolt might lead to permanent deformation of the tubes to which they are attached.

COMMISSIONING

- Clamps are not intended to serve as a means to secure electrical bonding and any fixtures must be grounded in accordance with accepted electrical practices.
- Do not use Clamps in the immediate vicinity of pyrotechnics.
- If used in an outdoor environment, the support structure must be fitted with earth protection against lightning.
- Before applying a load check that all connections are properly made.
- Before lifting check that all connections are still correct.
- Check if all parts are in good order.

DISASSEMBLY INSTRUCTIONS

- Take the weight off the Clamps.
- Release the nut and fold the eye bolt aside.
- Open the lid and fold aside.
- Remove the load.
- Check if the Clamps are in good order.
- If not, mark them clearly and put aside.

Table 1	Inspection Level			Items to be Inspected					
	Initial	Regular	Periodic	Lid	Body	Eyebolt	Nut	Roll Pin	ID
Missing Parts	Y	Y	Y						Y
Holes	Y	Y	Y	Y	Y				
Abrasion	Y	Y	Y	Y	Y			Y	
Corrosion			Y	Y	Y	Y	Y	Y	
Deformation	Y	Y	Y	Y	Y	Y	Y	Y	
Excessive Wear		Y	Y		Y	Y	Y	Y	
Cracks	Y	Y	Y	Y	Y	Y	Y	Y	

INITIAL INSPECTIONS - When first acquired, whether they are new or used, Clamps should be inspected in accordance with Table 1 and a record of the inspection maintained.

REGULAR INSPECTIONS - Regular visual inspections should be carried out in accordance with Table 1. Regular inspections should be performed by a competent person and should be carried out prior to each incident of use.

PERIODIC INSPECTIONS - Periodic visual inspections should be carried out in accordance with Table 1 and a record of the inspections maintained. Periodic inspections should be performed by a competent person and should be conducted at least once each year or in accordance with an inspection routine established by a qualified person. Clamps which are subject to any accident must be inspected according to the requirements per periodic inspection and in accordance with Table 1.

INSPECTION FREQUENCY

CLAMPS IN REGULAR SERVICE - Clamps in regular service should be subjected to regular and periodic inspections.

PERMANENT INSTALLATIONS, STATIONARY - Periodic inspections should be carried out on all Clamps that are permanently installed in a stationary (not moving) configuration. The frequency of inspections should be determined on the basis of the prevalent conditions.

PERMANENT INSTALLATIONS, MOVING - Periodic inspections should be carried out every three months, or in accordance with an inspection routine established by a qualified person, on all Clamps that are installed in a permanent configuration where movement of the truss system is an integral part of use.

RECORDS - Records of initial inspections and periodic inspections should be kept by the owner for each Clamp and should be signed and dated by the person carrying out the inspections.



Safety Instructions

Although under normal use and environmental circumstances, Clamps need little maintenance, for safety reasons, all parts must be checked regularly for damage, cracks and corrosion.

NOTICE

Doughty Clamps shall be checked in compliance with the local law by a competent person. Checking shall take place as often as required but at a minimum of once a year. If in doubt contact the manufacturer.

- Approved personnel must carry out a visual and functional test before every useage.
- Check all components for damage and corrosion. Damaged and corroded parts shall be exchanged with like for like approved replacement parts.
- Burrs and sharp edges shall be removed using fine sandpaper or a file. DO NOT use any mechanical abrasive machine to remove sharp edges from the Clamps.
- Maintenance and repairs must only be carried out by a competent person. If in doubt, contact the manufacturer.
- Only use hot water and soap to remove dirt from Doughty Clamps – DO NOT use abrasive fluids.
- Do not re-zinc plate steel parts.
- Approved personnel must carry out more detailed inspection and testing of the product on a regular basis depending on the usage of the product.
- Written records should be kept from the date the product was put into operation.



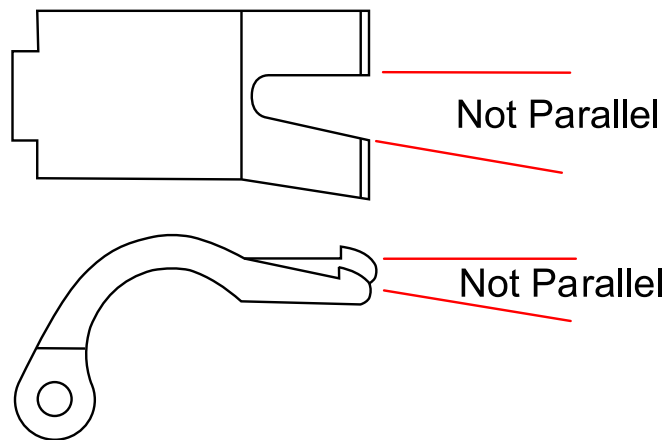
Warning

- The installer/operator must read and understand the User Manual before using the equipment.
- Operators shall be adequately instructed and fully understand the safe use of the equipment before use.
- Failure to carry out maintenance as necessary, including the replacement of parts to the correct standard could render this equipment unsafe and the manufacturer cannot accept any responsibility in this respect.
- DO NOT modify the equipment as this could lead to a critical failure.
- DO NOT use this equipment for a purpose that it is not intended. This could lead to a failure of the equipment and a risk of falling objects.

The following faults could be an indication of overload or misuse. Remove those clamps from service.

- Deformation of the lid (see diagram).
- Nuts which cannot be turned by hand.
- Eyebolts which do not swivel properly.
- Lids which do not swivel properly.
- Clamp does not fit around the pipe.

Typical Deformation Examples



REPAIRS AND REPLACEMENT OF PARTS

If the Doughty Clamp is damaged, contact the manufacturer.

DISPOSAL

Products that are no longer needed can be scrapped. Preferably remove all steel parts, store part separately before offering them to a scrapping company. The following alloys are used:

- Aluminium ENAW 6082
- Steel 8.8
- Stainless 304

WARRANTY

- For a period of 12 months we undertake to repair, free of charge any damage attributable to faulty materials or workmanship, provided that the appliance is forwarded, freight paid, to our works or one of the Doughty appointed service agents.
- The guarantee-period begins on the day of the delivery, proven by a purchase receipt like an invoice or delivery note or their copies.
- The guarantee only is applicable for new equipment.
- The guarantee does not cover damage due to transport damage, negligent handling, overload or parts subject to normal wear and tear. Nor damages that originate from a case of misuse because of non-observance the instructions in this manual.
- The fitting of non-original replacement parts or modifications of design by third parties invalidates the guarantee.
- Guarantee repairs do not renew nor extend the guarantee-period.
- In case of a claim under the guarantee or spare part requirements please contact your Doughty service agent.
- The manufacturer is not liable for indirect consequential damage or financial loss.
- The manufacturer is not liable for any changes made to the clamp or for any damage resulting from such changes.



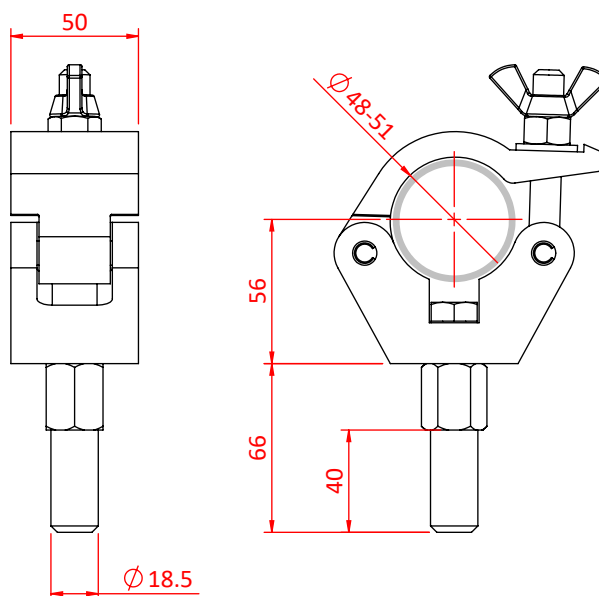
Product Data Sheet

Doughty Little Tom Clamp



A standard half coupler fitted with a Ø18.5mm Spigot.	
Part Nos	T57215 - Polished T57216 - Powder Painted Satin Black
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8 Spigot - AW6082 T6 Aluminium
Max Tightening Torque	30Nm
WLL	Not rated
Weight	0.70Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



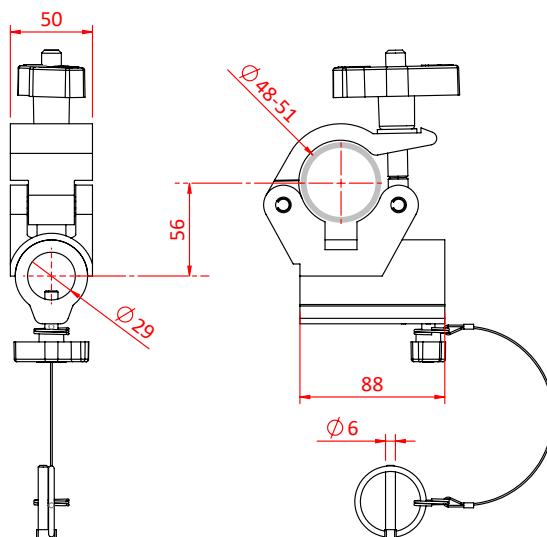
Product Data Sheet

Doughty TV Clamp



A standard half coupler fitted with a 29mm Receiver. A lynch pin is supplied for secondary locking.	
Part Nos	T57223 - Polished T57224 - Powder Painted Satin Black
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Eyebolt Assy - Grade 8.8
Max Tightening Torque	30Nm
Fixings	Ø29mm Receiver
WLL	250Kg
Weight	0.93Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



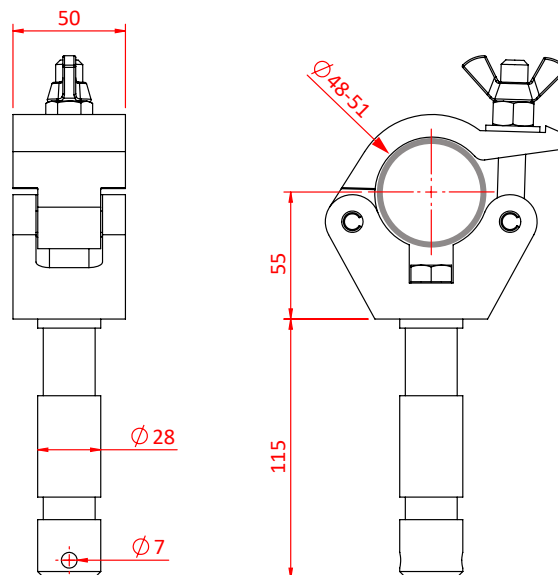
Product Data Sheet

Doughty Big Ben Clamp



A standard half coupler fitted with a Ø28mm Spigot.	
Part Nos	T57225 - Polished T5722501 - Powder Painted Satin Black
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8 Spigot - AW6082 T6 Aluminium
Max Tightening Torque	30Nm
WLL	200Kg
Weight	0.86Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm

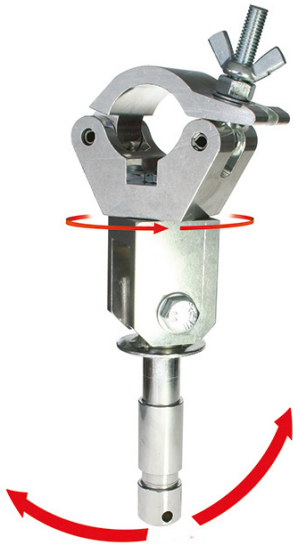


Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



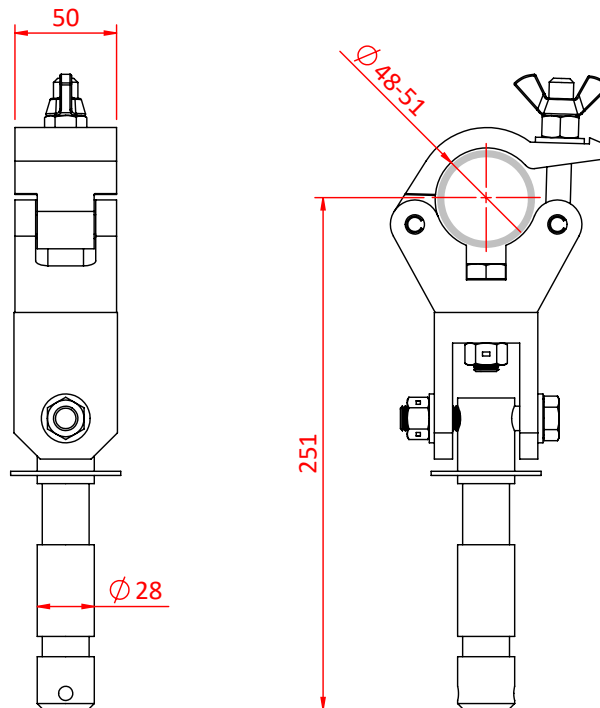
Product Data Sheet

Articulated Big Ben Clamp



A half coupler fitted with an articulating Ø28mm Spigot.	
Part Nos	T57227 - Polished
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8 Spigot - Stainless Steel
Max Tightening	30Nm
WLL	200Kg
Weight	1.77Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
 +44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



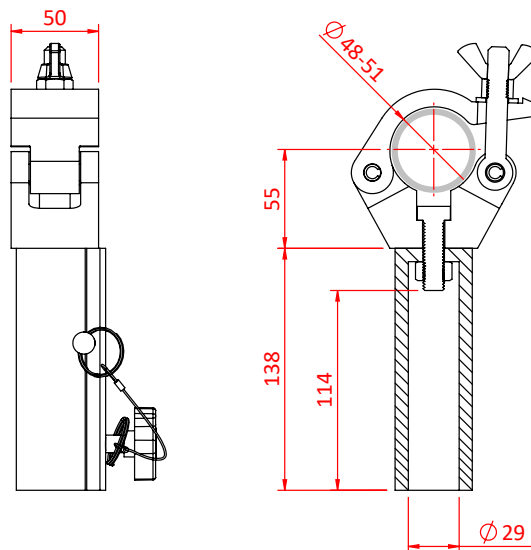
Product Data Sheet

Doughty TV Quick Clamp



A standard half coupler fitted with a Ø29mm Receiver.	
Part Nos	T57235 - Polished T57236 - Powder Painted Satin Black
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8
Max Tightening Torque	30Nm
WLL	200Kg
Weight	1.22Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



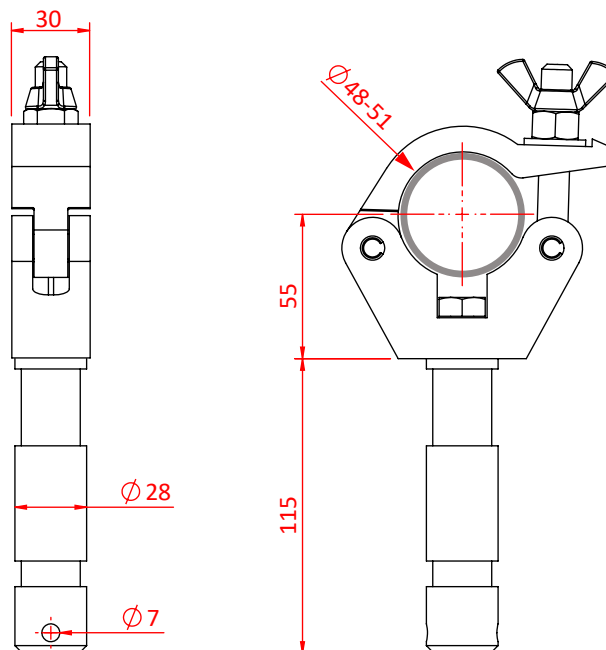
Product Data Sheet

Slimline Big Ben Clamp



A slimline half coupler fitted with Ø28mm spigot.	
Part Nos	T58018 - Polished
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8 Spigot - AW6082 T6 Aluminium
Max Tightening Torque	30Nm
WLL	200Kg
Weight	0.48Kg
Factor of Safety	5:1
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk



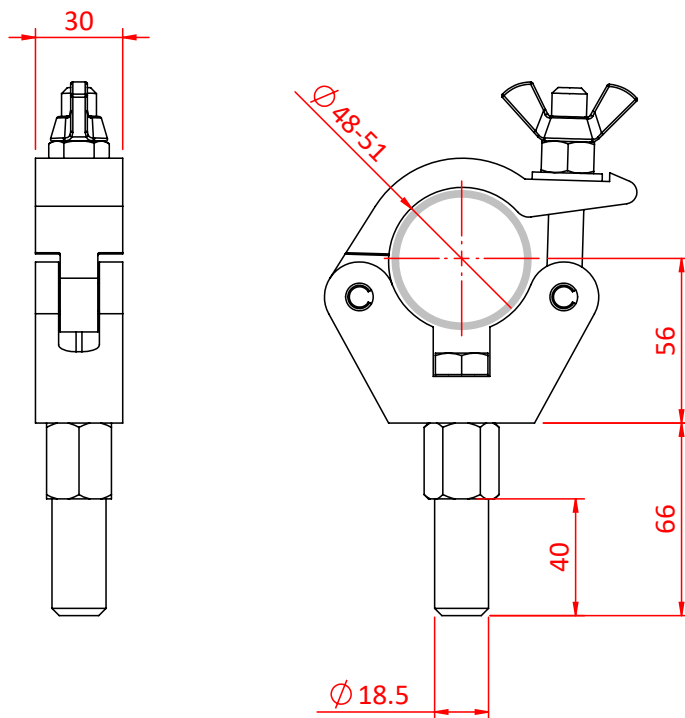
Product Data Sheet

Slimline Doughty Little Tom Clamp



A Slimline Half Coupler fitted with a Ø18.5mm Spigot.	
Part Nos	T58026 - Polished
Tube Diameter	Ø48 - 51mm
Materials	Main Body - AW6082 T6 Aluminium Roll Pins - Stainless Steel Fixings & Eyebolt Assy - Grade 8.8 Spigot - AW6082 T6 Aluminium
Max Tightening	30Nm
WLL	Not Rated
Weight	0.44Kg
Approval	TÜV Approved

Dimensions in mm



Doughty Engineering Ltd - Crow Arch Lane, Ringwood, Hampshire, BH24 1NZ, UK
+44 (0) 1425 478961, sales@doughty-engineering.co.uk - www.doughty-engineering.co.uk

Inspection List

ITEM	FAULT	REPAIR	DATE	SIGNATURE



Engineering Ltd

EC-DECLARATION OF CONFORMITY

According to the Machinery Directive 2006/42/EEC Annex II

Doughty Engineering Ltd

Crow Arch Lane
Ringwood
Hampshire
BH24 1NZ

Herewith declares that:

T57223, T57224, T57225, T5722501, T57227, T57235, T57236 & T58018

Doughty Spigot and Receiver Clamps

Are in compliance with the following harmonized standards/standards/regulations.

Machinery Directive 2006/42/EEC annex II

- Machinery Directive 2006/42/EC;
- BS EN 12100:2010 – Safety of Machinery – General Principles for Design – Risk Assessment and Risk Reduction.
- BS 7906-1:2005 - Lifting Equipment for Performance, Broadcast and Similar Applications;
- DGUV 17 – Regulations for Stages and Studios
- DGUV Information 215-313

Signed for and behalf of **Doughty Engineering Ltd**

Name **Dan Phillips**

A handwritten signature in black ink, appearing to read "DP", is written over the name Dan Phillips.

Position **Company Director** being the person responsible appointed by the manufacturer.

Company Registration No. London 972614

Registered Office: Crow Arch Lane, Ringwood, Hants, BH24 1NZ

Directors: J.C.G. Chiverton. S.C. Wright. D. Phillips. D.M. Chorley



Doughty Engineering Ltd

Crow Arch Lane

Ringwood

Hampshire

BH24 1NZ

Telephone: +44 (0) 1425 478961

Email: sales@doughty-engineering.co.uk

Website: www.doughty-engineering.co.uk

Note: Whilst every effort has been made to ensure that the information contained within this manual is correct, Doughty Engineering does not accept any liability for errors or omissions. Specifications and technical data are intended for guidance purposes only and may vary.