



# QTS-75-RGB+W

## FOR ALUMINIUM AND STEEL HULLS

- \* The **QTS-75-RGB+W** underwater light insert uses a high impact **borosilicate glass** lens (Test Pressure 100 bar). The beam angle is 120 degrees.
- \* Never feel trapped by this fixture. The **LED BALL** has universal adjustment. The **LED BALL** is designed to accept white, Blue and RGB+W configurations and can be easily removed for servicing without the hassle of hauling your boat.
- \* The **QTS-75-RGB+W** The power supply to the driver is 110-240 vac and has DMX control as standard. We can offer a bespoke design service tailored for each individual hull.
- \* The **QTS-75** has Lloyd's Register Approval and ABS Design Appraisal.
- \* The **QTS-75** is suitable for welding into steel and aluminium hulls using our two types of inserts which have been machined so they can be welded flush to the hull plating at appropriate positions.

 **Maintenance**  
Inside the Hull

 **Control**  
DMX

 **Driver**  
Remote

 **Lens and Pressure Test**  
Borosilicate Glass- 100 bar

 **Power**  
110-240 VAC - 144 watts

 **Installation**  
Weld-in



**Hull Material**   
Aluminium / Steel

**Boat Size**   
30 -200 meters

**Lumens**   
N/A

**Kelvin**   
N/A

**Beam Angle**   
120 Deg

**IPX8**  
Underwater



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THE QT-LED RANGE IS DESIGNED AND MANUFACTURED BY UNDERWATER LIGHTS LTD IN THE U.K.

Type-QTS-75-RGB+W Issue 'A', Date-1-10-2019



# QTS-75-RGB+W

## Mounting

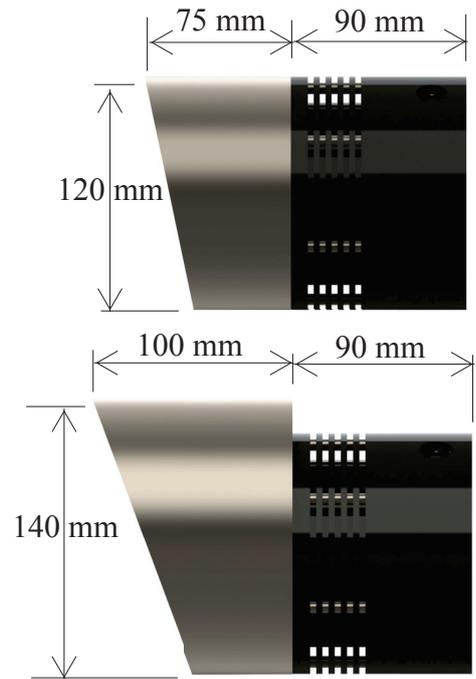
Hull Material	Aluminium & Steel
Boat size	30 meters to 200 meters
Spacing	1.5- 2.5meters for Transom & 2.5 to 6meters for P & S)
Beam Angle	120°
Installation Angles	Flush to shell plating

## Physical

Lengths and diameters see opposite	
Removal Space Required	100mm 4"
Total weight	SS: 10 - 12.7kg (21 - 28lbs) ALU: 8.2-9.1kg (18 - 20lbs)
Driver Dimensions (L x W x H)	9" x 4.9" x 3.5" (220 x 120 x 90mm)
Cable Lengths	3meters (13ft) to 12 meters
Material-Weld in	5083 Aluminium / 316L Stainless Steel
Glass Lens	Borosilicate Glass Lens

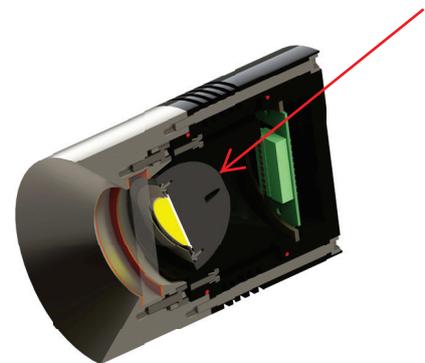
## Technical

Lumens	NA
Kelvin	NA
Typical LED Life Expectancy	40,000 hrs
Min-Max Operating Voltage	110 - 240V AC
Current / Amp draw	1.4A - 0.7A
Driver Type	External
Driver Output	4 Channel @0.7A
Driver wattage	144 WATTS
Control Option	DMX
Bonding	Welded



Material and Part numbers for RGB+W		
Material	Diameter 120 mm	Diameter 140 mm
316L S.S.	QTS-75-3120-RGB+W	QTS-75-3140-RGB+W
5083 ALU	QTS-75-6120-RGB+W	QTS-75-6140-RGB+W

## Universal Ball Adjustment



Your Local Dealer

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The Great Dunton Forge, London Road  
Dunton Green, Sevenoaks, Kent TN13 2TD UK  
T: +44 (0) 1732 455753 • F: +44 (0) 1732 743233  
E: uwl@underwaterlights.com

[www.underwaterlights.com](http://www.underwaterlights.com)

VAT NO: 556 4425 31

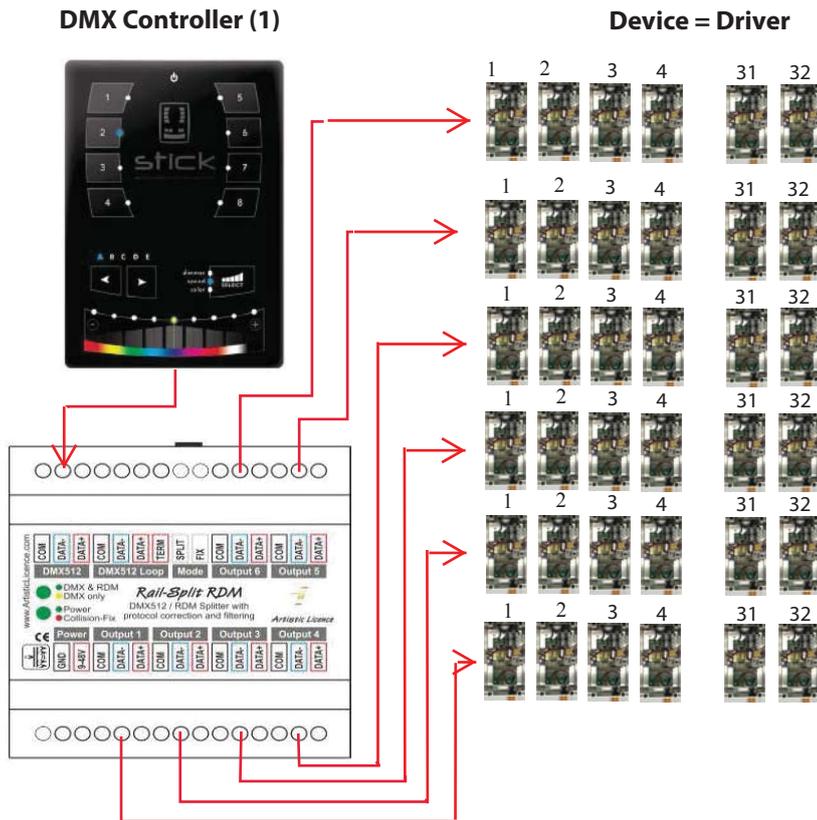
Registered in England No: 2348038



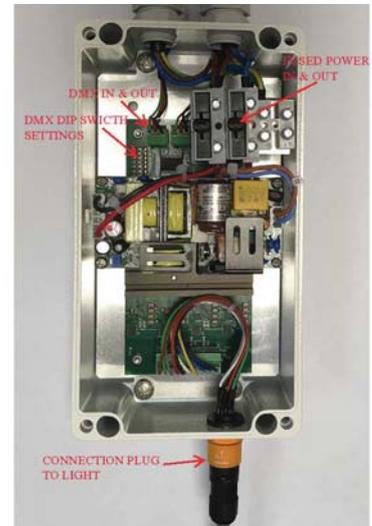
# DMX AND LIGHT CONNECTION

## ELECTRICAL INFORMATION

- \* Shown below is a simple connection diagram for the DMX Controller (1), the six channel SPLITTER (2), Four channel DRIVER (3) also shown as 'Device' and the RGB+W underwater lights (4).
- \* **Single light connection-** Every light has six meters of cable and a IP 68 plug ready to plug into the drivers aluminium driver enclosure which has a IP 68 socket for plug and play. A longer cable can be used if needed
- \* **DMX connection-** All DRIVERS (3) are connected in series to a six channel SPLITTER (2). Each channel can have 32 DRIVERS connected but we recommended to use ALL channels to reduce the number of drivers per channel to avoid the possibility of capacitance and magnetic interference in the cable.
- \* The DMX controller (1) is connected to the six channel SPLITTER (2).
- \* **DMX cable -** Shown below is the recommended DMX 120 ohm impedance cable specification. The termination resistance is 120 ohm. This cable must be used for connecting the Devices, Splitter and DMX controller. Cable lengths from driver to light - standard 3m and 6m. Can be extended to 24 meters (80ft)
- \* **Four channel DMX driver-** Shown installed into an IP 66 enclosure (**dimensions 220 x 120 x 90mm**)



**Four channel DMX driver (3)**  
**One for each light**  
**Power supply- 110-240vac - 144 watts**



<p>Tourflex DataSafe 4B                  Two Pair LSOH 1000v                  Insulated DMX Cable</p> <p>Product Code:                  TFDS4BEU</p>	<p>Used in permanent installations to transport two independent universes of DMX / RDM.</p> <p>Data Pairs: 0.35mm<sup>2</sup> - 20 strands of 0.15mm oxygen-free tinned copper conductors</p> <p>Data Pair Colour: P1 - White &amp; Black, P2 - Red &amp; Green</p> <p>Overall Diameter: 7.2mm (+/- 0.1mm)</p> <p>Weight per 1m: 60 grams / 2.12 ounces</p> <p>Operating Temperature: -30°C to +75°C</p> <p>Minimum Bend Radius: 8 x O.D.</p>
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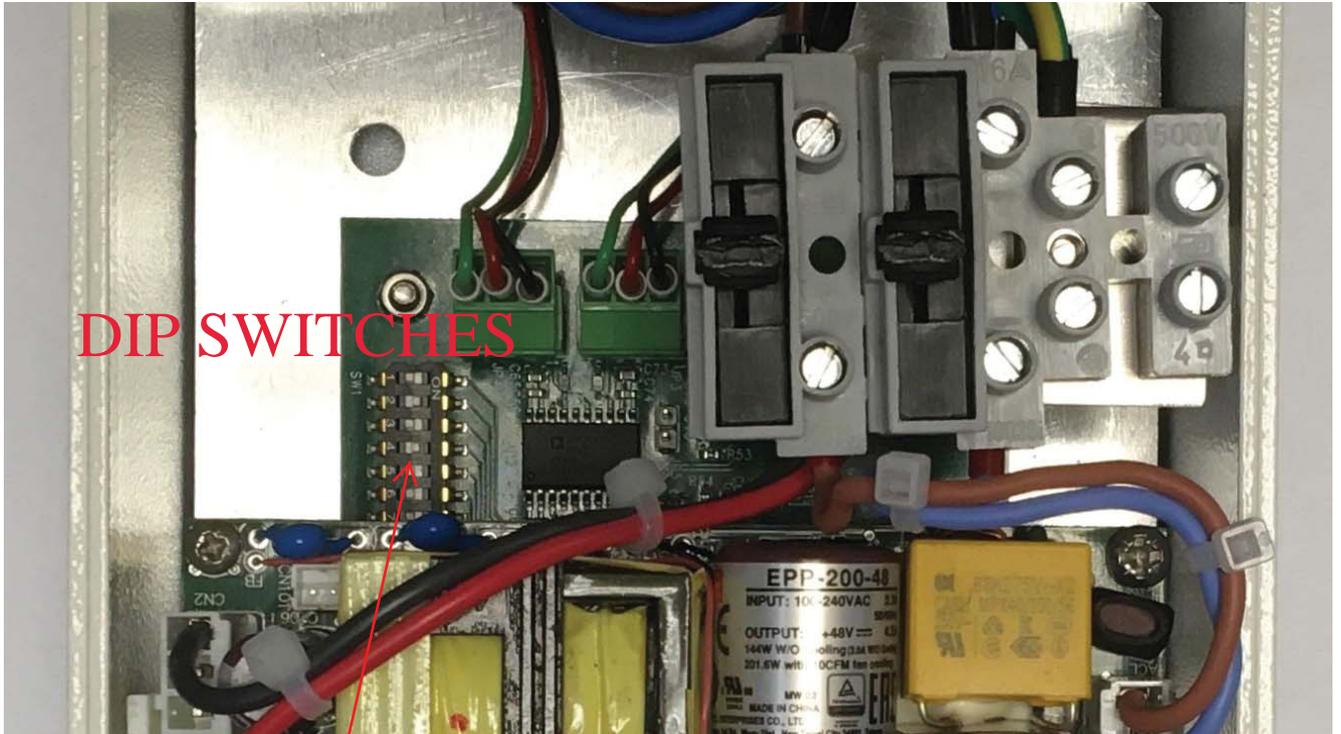


Underwater light (4)

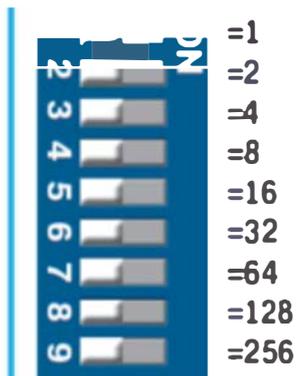


# underwater lights limited

The art of superyacht lighting

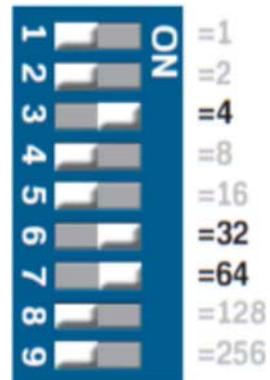


DMX address



Add values of 'ON'  
for DMX address

e.g.



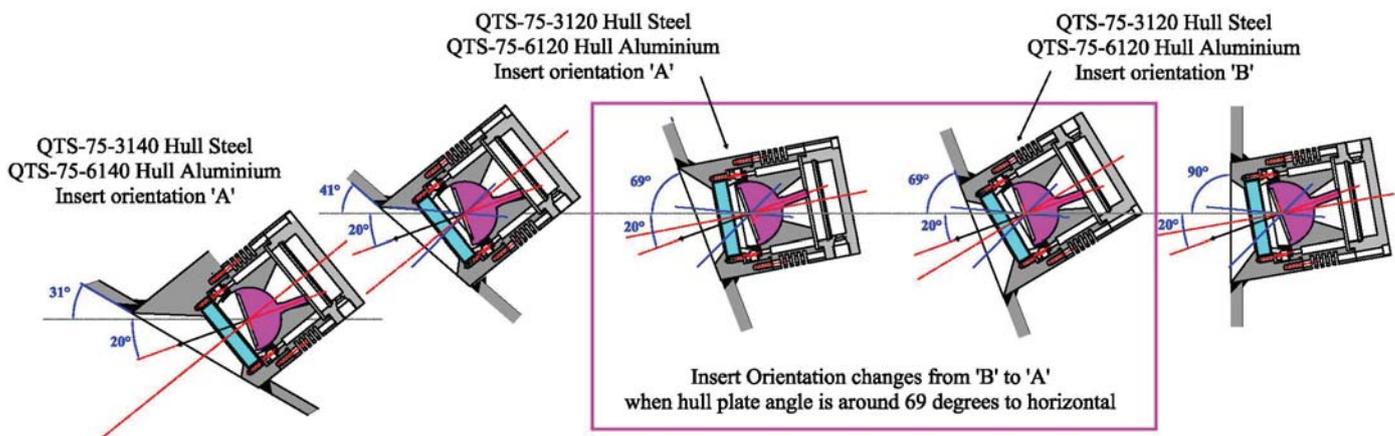
4 32 + 64 = 100  
D X address 100

# QtLED QTS-75

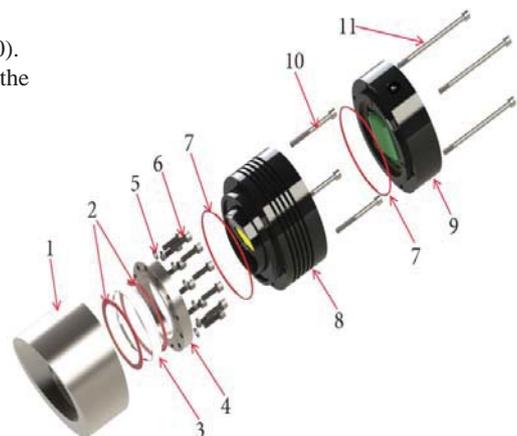
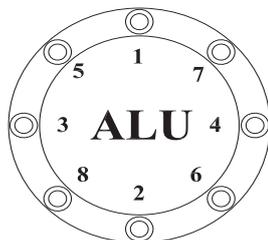
## Installation information



**\*DESCRIPTION** - The QTS-75 range is a submersible through hull marine light with a universal 30 degree ball adjustment. There are two types of insert which have been machined so they can be welded flush to the hull plating at the appropriate locations. Final adjustment of the beam angle to the horizontal is carried out from inside the hull. See instructional picture below.



**\* LED PROJECTOR FITTING INSTRUCTIONS**-The LED heat sink (8) with the 'O' ring (7) fitted is inserted into the insert (1) and bolted to the insert (1) with bolts (10). The LED ball can then be adjusted. The cover (9) with the 'O' ring fitted is inserted to the LED heat sink (8) and bolted up using bolts (11) securing all parts to the insert (1).



**\* LENS FITTING INSTRUCTIONS**-Remove the blanking plate and check the insert (1) lens landing surfaces are clean and apply a suitable silicone grease to the gaskets (2). Fit the lens (3), gaskets (2) and lens retaining ring (4). Hand tighten the cap head bolts (6) and spring washer (5) making sure the lens retaining ring (4) is square. Torque the bolts to 7 Nm (4.5ft/lbs) in the sequence shown below, check the ring again and re-torque the screws again to the same setting.

**\*DRIVER INSTALLATION INSTRUCTION** - The driver must be located at least 60 cm above tank top with good ventilation and the maximum ambient temperature should not exceed 40C. The underwater light is fitted with six meters of cable and a IP 68 plug that fits into the driver enclosure socket. For cabinet installation see separate sheets.



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# QtLED QTS-75 INSERT INSTALL

\*The QTS-75 insert range of underwater lights are a dedicated LED light unlike the QT-75 insert range that could be used for metal halide (HQI) or LED.

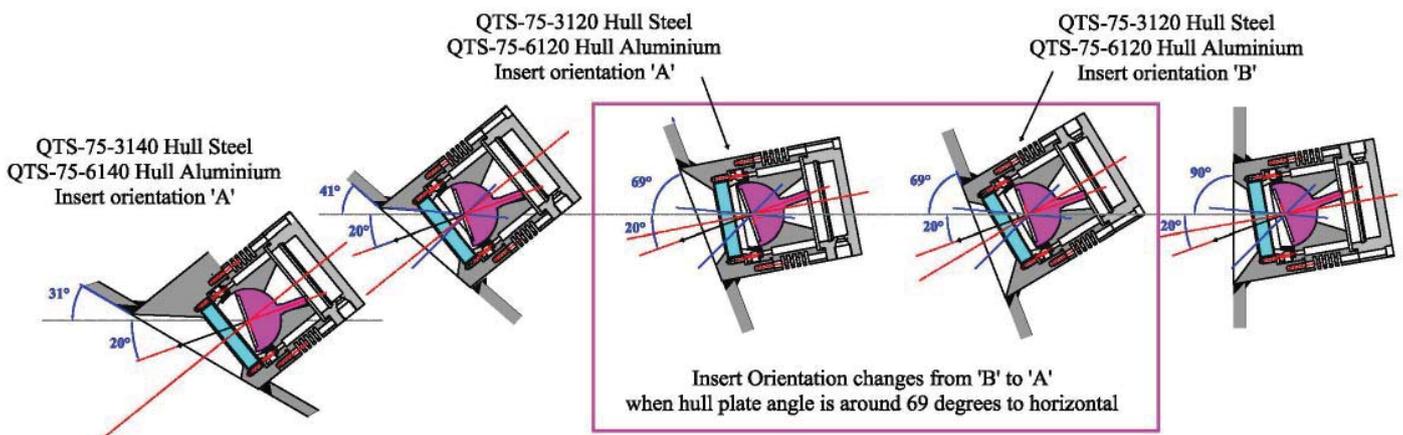
\*There are two types of QTS-75 inserts that are machined and cut ready for immediate welding into the hull shell plating without worrying about insert angles only the **orientation** of the insert relative to the plate angle.

\*There are two orientations of the insert 'A' and 'B' which relate to the hull plate angle and this is explained below. For plate angles 69 - 90 degrees the orientation is (B) and below 69 degree the orientation is (A)

\*The light beam is simply adjusted by a universal ball mechanism inside the LED projector. This is carried out from inside the hull to get the correct beam angles of around 20 - 25 degrees

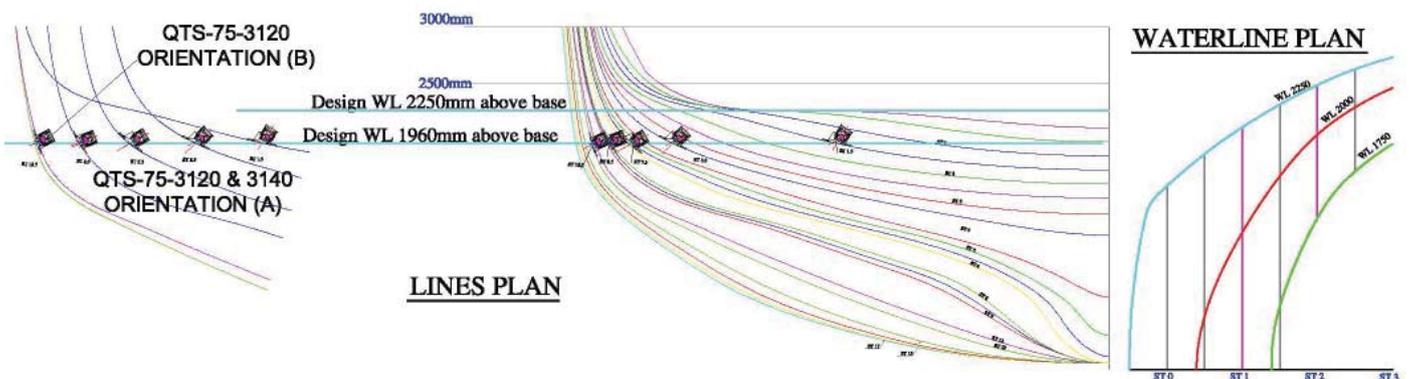
\*The diagram below has the beam angle adjusted to 20 degrees down and the inserts are welded to various angles to the shell plate.

Note the insert orientation below. The beam can also be adjusted left or right.



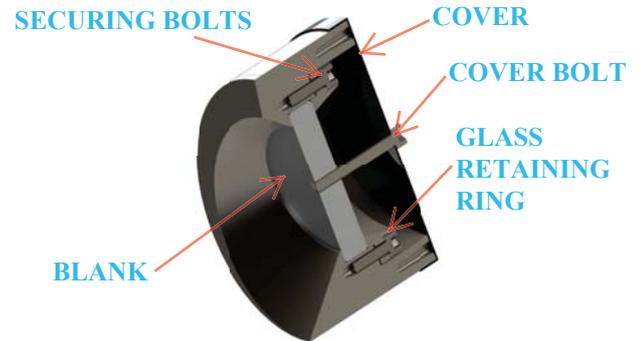
\*The LINES PLAN below shows the curvature of the hull transverse frames and the red horizontal lines indicate the draught where the inserts are located at a minimum of 300mm below the waterline.

At the foot of the diagram are the QT-75 inserts for comparison

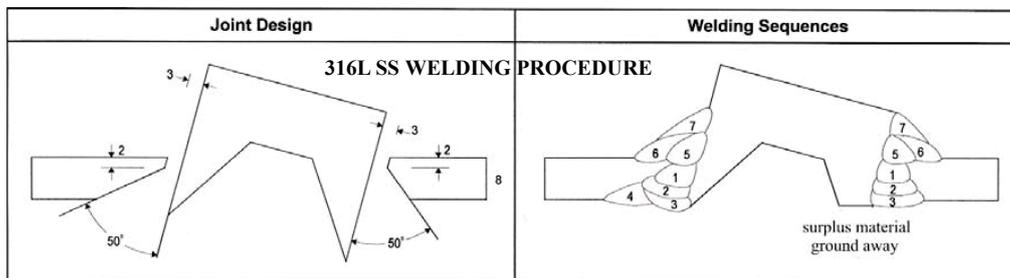


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The inserts are delivered fully protected with cover and blank disc which **must not be removed** during welding and painting.

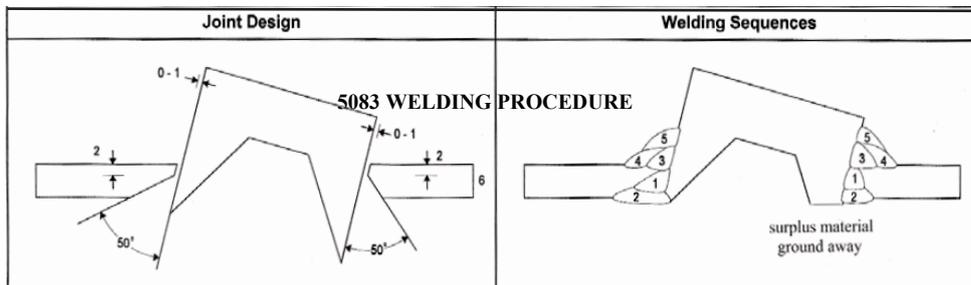


The 75 range welding procedures shown are typical for most installations and are for guidance pur-poses only. Always use a certified welder and a fire watch when welding. Protect all threads and internal surfaces against welding, grinding and painting.



RUN	PROCESS	SIZE OF FILLER METAL	CURRENT A	VOLTAGE V	TYPE OF CURRENT/POLARITY	WIRE FEED m/min	TRAVEL SPEED* mm/s	HEAT INPUT* kJ/mm
1-7	MMA	3.2	100-115	≥ 55 OCV	AC	-	-	

- |   |   |
|---|---|
| <b>Welding procedure Ref.No:</b> UL-CSSS-TB-01                                    | <b>Welding position:</b> Butt: Horizontal (PC) and vertical up (PF)   |
| <b>Joint type:</b> Full penetration butt with fillet                              | Fillet: Overhead  (PD), vertical up (PF) and horizontal vertical (PB) |
| <b>Preparation &amp; cleaning:</b> Thermal cut and grind                          | <b>Gas flux shielding:</b> Acid rutile flux                           |
| <b>Parent material spec:</b> ASTM A276:316L stainless to BS 4360:43A carbon steel | <b>Details of back gouging:</b> Back grind root of butt               |
| <b>Material thickness (mm):</b> 4-20 (Bulleyt) to 8mm plate                       | <b>Preheat temperature:</b> 10°C min.                                 |
| <b>Outside diameter (mm):</b> 100mm   | <b>Interpass temperature:</b> 240°C max.                              |
| <b>Filler metal classification:</b> AWS A5.4:E309MOL-17                           | <b>Temperature control:</b> Thermal indicating crayon                 |
| <b>Filler metal tradename:</b> ESAB OK 67.70                                      |   |



RUN	PROCESS	SIZE OF FILLER METAL	CURRENT A	VOLTAGE V	TYPE OF CURRENT/POLARITY	WIRE FEED m/min	TRAVEL SPEED* mm/s	HEAT INPUT* kJ/mm
1-5	MIG	1.2	160 - 180	20 - 21	DC positive	± 10.0	10 - 15	-

- |   |   |
|---|---|
| <b>Welding procedure Ref.No:</b> UL-AL-TB-01                                    | <b>Welding position:</b> Butt: Horizontal (PC) and vertical up (PF)   |
| <b>Joint type:</b> Full penetration butt with fillet                            | Fillet: Overhead  (PD), vertical up (PF) and horizontal vertical (PB) |
| <b>Preparation &amp; cleaning:</b> Cut, grind, wirebrush & degrease             | <b>Gas flux shielding:</b> Argon gas                                  |
| <b>Parent material spec:</b> BS 1474:5083:0 (Bulleyt) to BS 1470:5083:0 (plate) | <b>Gas flow rate - shielding:</b> 20 LPM                              |
| <b>Material thickness (mm):</b> 4-20 (Bulleyt) to 6mm plate                     | <b>Details of back gouging:</b> Back grind root of butt               |
| <b>Outside diameter (mm):</b> 100mm   | <b>Preheat temperature:</b> 10°C min.                                 |
| <b>Filler metal classification:</b> BS 2901:pt 4:5356                           |   |
| <b>Filler metal tradename:</b> INCO ALLOYS 5356                                 |   |