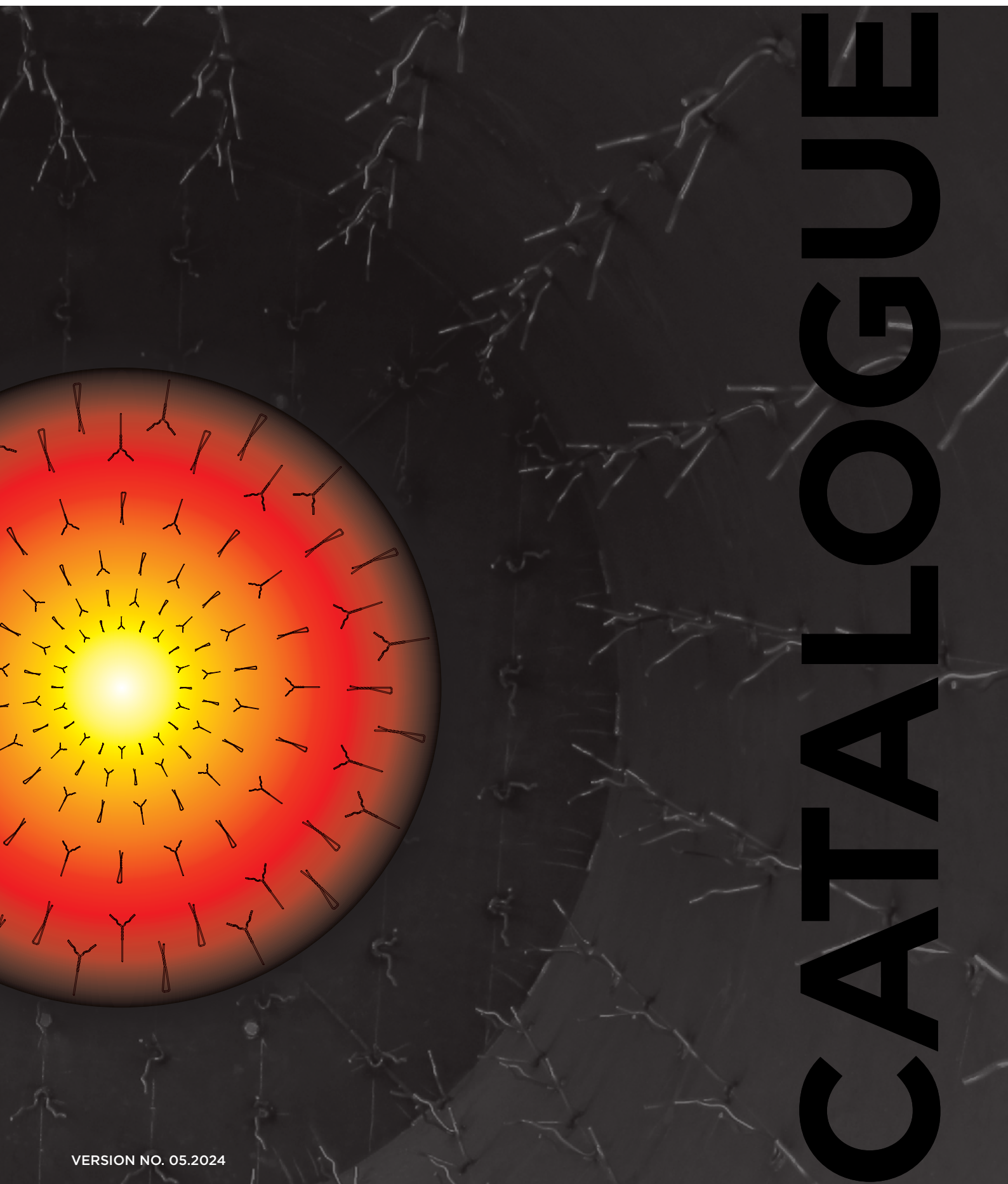




## REFRACTORY ANCHORS CATALOGUE



VERSION NO. 05.2024

# REFRACTORY ANCHORS CATALOGUE



## WELCOME

### 50 YEARS OF REFRACTORY INDUSTRY EXPERIENCE & INNOVATION

Pressform Engineering has over 50 years experience in the design, development and manufacture of Refractory Anchors for high temperature furnaces and kilns. In 1978, Pressform developed the **Rod Lock & Rota Lock Anchor** and has, since then, manufactured and supplied close to 50 million refractory anchors world-wide.

We have worked with Australia's leading companies in the cement, steel and petrochemical industries to develop and supply cost effective, industry-leading Refractory Anchors. We believe experience and innovation is paramount and our specialist team has developed a unique, comprehensive offering of quality Refractory Anchors for almost any application.

### THE METAL MANUFACTURING EXPERTS

Pressform's service and delivery is second to none with Refractory Anchors made to order in our extensive manufacturing facility, with our manufacturing team on call to allow for fast turnaround and delivery.

Having our own manufacturing facility and expert team, lead by Metallurgist John Worner, allows us to offer custom design and development to your specification, ensuring not only that your job **is cost effective** but that your product is **efficiently designed** with the correct metals and alloys to achieve the highly specialised task at hand. We also work in conjunction with customers to find solutions to existing refractory problems – we can provide investigation, reporting, recommendations and specialised product development.

### THE REVOLUTIONARY STUD WELDING SYSTEM

With our extensive experience and in depth knowledge of our customer's needs, we have developed the revolutionary **Pressform Stud Welding System**: a fast, efficient and fully transportable stud welding system for refractory anchor installation. Designed to save precious project time and allow you to work **10 times faster. Find out more in this catalogue or contact us to discuss how it can work for you.**

**For enquiries and orders, please contact us directly:**

**John Worner, Manager Director – Metallurgist**

Email: john.worner@pressform.com.au Phone: 0414 522 151

**Jonathon K. Worner, Group General Manager**

Email: jonathon.worner@pressform.com.au Phone: 0414 905 193

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[www.pressform.com.au](http://www.pressform.com.au)

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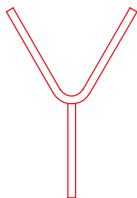
**PF TWIST ANCHOR  
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**PF VWFN ANCHOR  
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**PF Y ANCHOR  
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**PF WNL ANCHOR  
PF-R017**



**PF WB-HEXNUT ANCHOR  
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**PF VS-HEXNUT ANCHOR  
PF-R014**



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**PF CLOSE PARALLEL ANCHOR  
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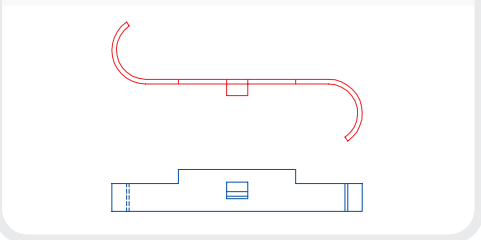
**PF SPLIT FLAT BAR Y-ANCHOR  
PF-R022**



**PF C CLIPS  
PF-R027**



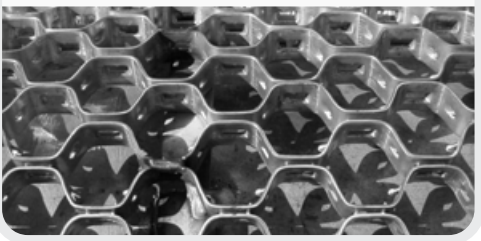
**PF S-SHAPE ANCHOR  
PF-R023**



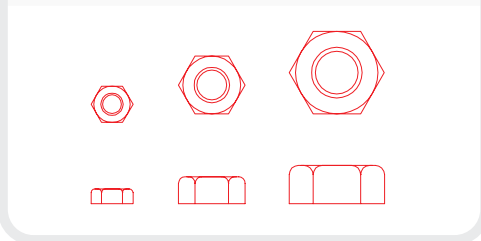
**PF STUDS  
PF-R028**



**PF HEXAGONAL MESH  
PF-R024**



**PF NUTS  
PF-R029**



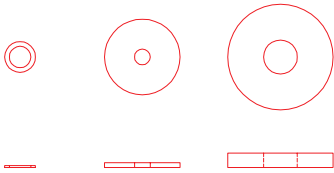


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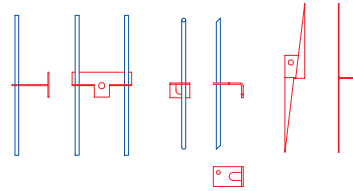
## REFRACTORY ANCHORS



**PF WASHERS  
PF-R030**



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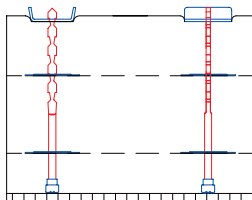
**PF FIBRE ANCHOR  
PF-R031**



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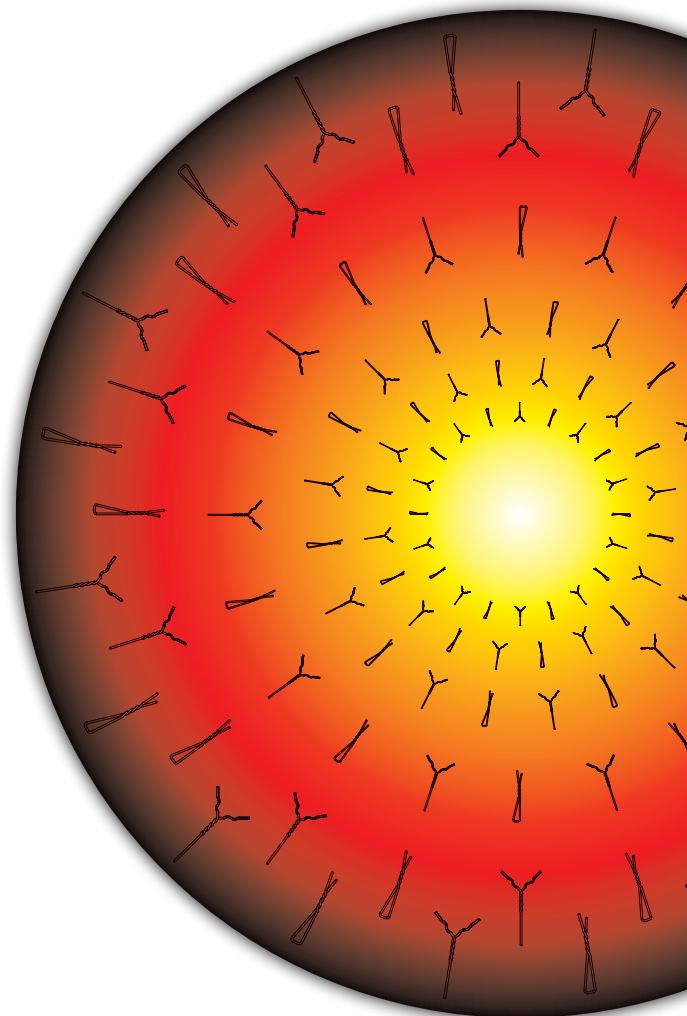
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**PF BI-METALLIC PIN  
PF-R034**



# REFRACTORY ANCHORS CATALOGUE



## PRESSFORM ENGINEERING PTY LTD IS YOUR ONE STOP METAL MANUFACTURING SHOP.

We provide a total component solution from the smallest custom part to complex, welded structures up to 10 tonnes. We offer all forms of welding, laser cutting, rolling, CNC punching and perforating, bending, stamping, hot forming, CNC machining and profiling and we work consistently in all metals. We design, build and maintain all our tooling in our own factory which ensures our products are high quality and cost effective.

### CAPABILITIES:

- Hydraulic Powered **Press 630 tonne** with deep draw die cushion capacity
- CNC **Turret** Press – 30 tonne
- CNC **Plasma** Cutting with nesting software
- 3Kw & 6Kw **Fibre Laser** Cutting Machines cutting up to 25mm thick
- **Press Brake 400 tonne x 4000mm long**  
Press Brake 150 tonne x 3600mm long
- Automatic scissor style Bandsaw with feed table and full capacity hydraulic overhead bundling
- Punching 0.5mm to 20mm thick
- **Bending** 2.5 to 150 tonne, fast mechanical and metered hydraulic
- Cropping 250mm x 10mm, 75mm x 20mm
- Forming & deep drawing
- CNC Plate **Rolling** 10mm x 1800mm wide to 32mm x 75mm, including cone sections
- Lifting Capacity 10 tonnes overhead cranes
- Complete Welding (GMAW, GTAW, MMAW, SAW) and **fabrication** capabilities
- **Robot Welding System** with 2000mm arm reach for stainless & mild steel welds
- **Stud Welding:** Including Stud Production and Testing
- CNC Milling: **Machining** Centres
- **CNC** Turning: Bar Feed **Lathes** (72mm max for bar feed)
- Tool Making and General Machining (Milling, Surface Grinding, Turning, Drilling and Threading)
- Painting: Electro Static Painting capabilities (2 pack, Enamel)
- Dual Head Semi-Automatic Welding capabilities
- Post production finishing services: Sand Blasting, **Rumbling**, Painting, Powder-coating, Galvanising, Anodising, Electroless Nickel, Zinc or Chrome Plated.

### MATERIALS:

Manufacture from materials including austenitic & ferritic stainless steel alloys, nickel alloys, copper, brass, aluminium, and carbon steels (including forming, high tensile & boiler grade)

### DELIVERY SERVICE:

Pressform Engineering provides a cost effective delivery service with our Hino Truck with 8.2 tonne load capacity & 7.6 x 2.5 metre tray.

We are pleased to offer advice on the manufacturing practicality of proposed products and to offer suggestions to improve both the function and commercial viability.

# REFRACTORY ANCHORS CATALOGUE



## WELDING

Particular technical emphasis should be observed when welding any refractory anchor. Full strength optimum welds hold the refractory products to the furnace wall.

### DISSIMILAR WELDING TECHNIQUES

A large portion of refractory anchor welding will be stainless nickel alloys to mild or carbon steel shells i.e. dissimilar metal welding.

### CHOOSE WELDING CONSUMABLE WITH CARE

For the welding of common stainless alloys (austenitic) 310, 309, 321, 304 to mild or carbon steels use 310 or 309 consumable. Ensure that the consumable is not molybdenum containing thus avoiding possible embrittling phases forming.

When welding with 310 minimise possible *hot cracking* by controlling heat input and avoiding “globular” welds. Grade 310 undergoes rapid tensile strength increase as temperature drops from weld pool to ambient. Consequent high strength attained on surface-metal tears apart central hot metal producing cracks. Endeavour to keep cross sectional area linear/concave rather than convex. Grade 309 is preferred for reducing *hot cracking susceptibility*. Consult manufacturer’s literature for particular nickel alloy consumables.

### PREPARATION

In new or repaired kilns, atmospheres are often contaminated with iron and concrete particles-ensure weld surface is clear at time of arc strike.

Grind to bare metal all weld pool locations immediately prior to welding, minimise contamination of weld pool by shielding protection as practicable.

No moisture, over sprays, paint, fumes, dew, marking inks, lubricants, near the weld pool.

### APPLICATION

Follow a proven weld procedure which closely reflects the application:

- a) Prove and test a new procedure
- b) Follow a previously documented procedure

### CARE

The anchor being welded has been designed by the refractory designer to hold and anchor the chosen valuable monolithic castable segments. The designer will have assumed the weld strength equals or exceeds the anchor metal strength.



# REFRACTORY ANCHORS CATALOGUE



## STUD WELDING

Many anchor designs can be modified to allow for Stud Welding. This method may be faster to apply but the forgoing advice is still imperative. The requirement for a near perfect surface for Stud application is in fact magnified.

### STUD DESIGN

In general a stud minimum length is approximately 25-30mm. This will allow for the chuck to grip and plunge the stud. The end must have an appropriate chamfer and flat landing for the aluminium flux. A ball of Aluminium is often used, but for some alloys, it may be necessary to reduce the volume of aluminium. It is advisable to prove the procedure and stud design before committing to order the full complement of studs for the job. Pressform can assist with this experimentation.

### METALLURGY

The common practice of applying grade 304 studs directly to carbon steel parent metals must be tempered by the knowledge that a reduced strength weld is achieved. Therefore be aware that stud size is such that the supported weight reflects the reduced weld strength. The designer will therefore disallow substitution of stud diameters different from that specified.

Please contact Pressform for a technical evaluation.

### PROBLEMS

Technical advice is available from contractible metallurgists when required. We would be pleased to attend to any problems either from our own knowledge and experience, or coupled with expert reports.

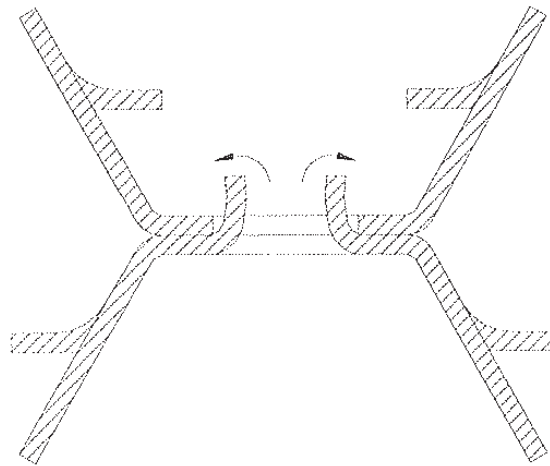
# REFRACTORY ANCHORS CATALOGUE



## HEXAGONAL MESH

Pressform's mesh tool was produced initially from listening to requests from engineers and processors.

We have endeavoured to optimise strength by maximising lug width and continuing the natural "form curl" direction when closing the lugs onto their mated link. In piercing the parent stainless or carbon steel strip, the tool punches through and the resultant "lug" or "tab" forms a curl thus:



It is likely that the outer edges will exhibit unavoidable micro surface cracks merely from the process of piercing. These will be compressed in the next process as the lug bend is continued to close the 2 strips together. We prefer to avoid a bend back or 180 degree reversal in the closing operation for fatigue considerations.

The amount of lug closure can be adjusted so that sheets can be flexed in the "easy" direction. This can assist installers where the mesh will lift up into or around a pre-determined curve diameter. For example if the customer wishes to encapsulate on air tube of X diameter (minimum of 320mm), the lug closure can be "set" accordingly.

However, where it is necessary for "hard direction" rolling, the mesh is closed tightly prior to the rolling or forming.

Our advice generally is to avoid "hard rolling" because the stresses introduced into the metal strips in the production processes are already considerable, although unavoidable. It seems desirable to avoid further strain if possible.

# REFRACTORY ANCHORS CATALOGUE



## MATERIAL SELECTION

The high temperatures refractory anchor metals face, demand awareness that many metallurgical parameters come into consideration:-

CREEP, FATIGUE, GRAIN GROWTH, PHASE CHANGE, EMBRITTEMENT, ELEMENT MIGRATION, CRACK PROPAGATION, PRECIPITATION HARDENING, AGING, ELONGATION, CHEMICAL INGRESS, OXIDATION, REDUCTION, SULPHIDATION, TENSILE & COMPRESSIVE STRESSES.

Mild or carbon steels should not face a constant temperature greater than 150deg C. Some of the Chrome Moly Grades will have superior properties, and should be selected by a Design Engineer.

The Austenitic Stainless Alloys such as 304 & 321 are good general purpose alloys with Heat Resistance. Maximum Temperatures of 900-950deg C in oxidising conditions can be handled. The 309 based alloys may be 100 Deg more. The 310 and 253Ma alloys are often used up to 1100 deg C . At these temperatures be aware that the metals are at their limits and will be glowing pale yellow or brighter, and soft. Design creep and fatigue will be factors to be considered. The Furnace atmosphere is critical the presence of sulphur, halogens and reducing conditions change maximum temperature resistance.

Alloys that are high in nickel, or complex metallurgy's with additions of rare earth's or special elements may be nominated to perform in particular situations. New and interesting Alloys are constantly being developed.

Pressform will freely provide customers with advice and pass on experience relative to a new problem. The limit of Wrought or Cast Metals in anything other than an Inert Atmosphere is 1200 deg C. Beyond this a ceramic could be considered. The knowledge of the refractory designer is crucial to the aspects of furnace construction concerning heat containment.

Pressform has a library of literature kindly supplied by various manufacturers to whom we can refer an enquiry for assistance. We are also in contact with R & D laboratories where investigations can be initiated.

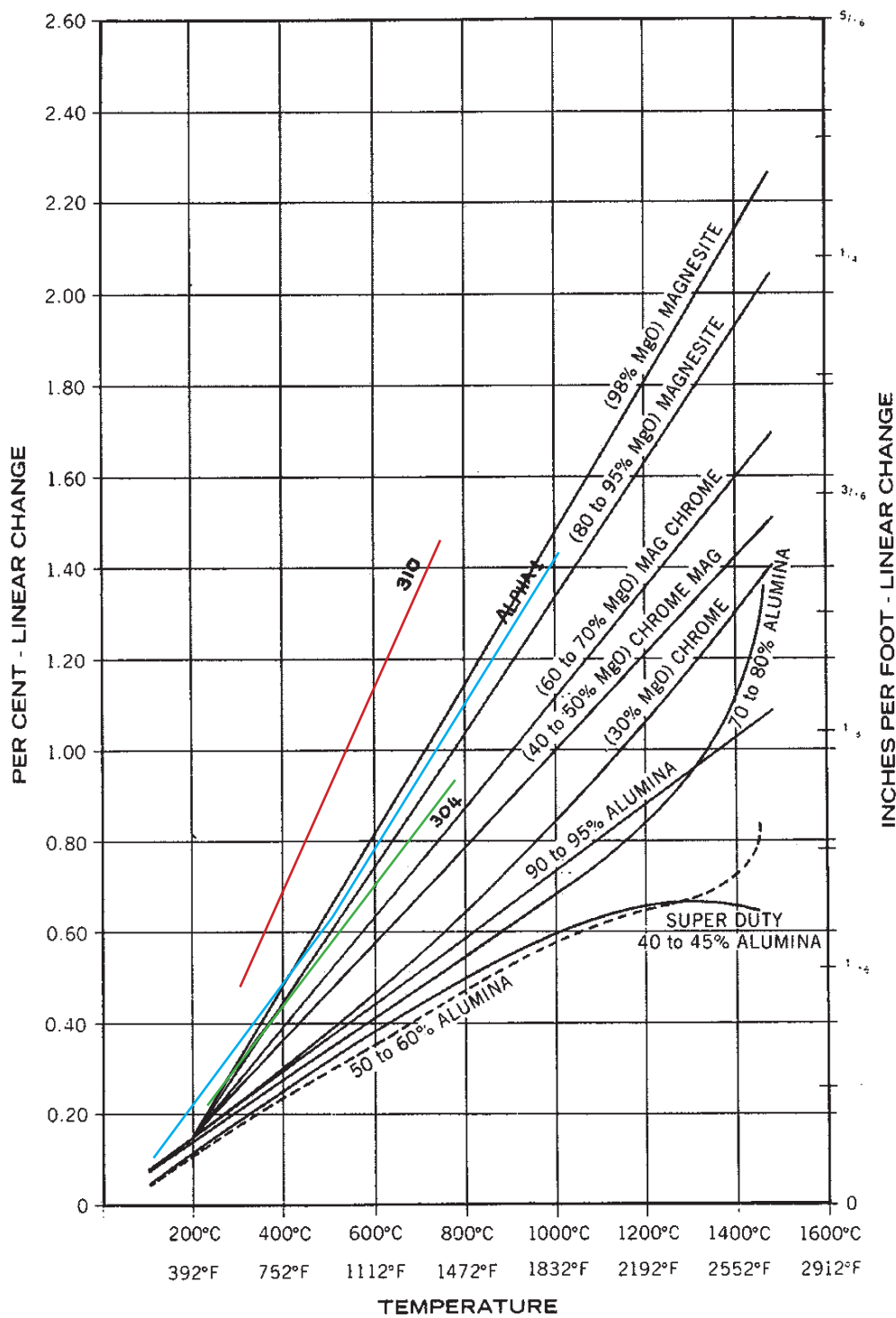
Pressform is proud to provide this catalogue which is compiled to stimulate thought of what "could be" based on what "has been". We are pleased to make "specials".

# REFRACTORY ANCHORS CATALOGUE



The thermal expansion of austenitic stainless steel grades 310 & 304 is shown here, illustrating a variance to that of some refractories. Consideration of a differential is relevant where capping or coating of wire anchor surfaces is contemplated.

## THERMAL EXPANSION OF VARIOUS REFRACTORIES



# REFRACTORY ANCHORS CATALOGUE



GRADE	TYPICAL COMPOSITION (%)					Form & condition	Typical Mechanical Properties				Comments
	C	Mn	Ni	Cr	Mo	OTHER	Yield strength (0.2% offset), 1000 psi	Tensile Strength 1000 psi	Elongation in, %	Hardness, Brinell or Rockwell	
304	0.06		9.5	18.5			35 up to 160	85 up to 185	50 4	R <sub>80</sub> up to R <sub>60</sub>	Versatile general purpose stainless steel with excellent welding and drawing properties
304L	0.025		9.5	18.6			28	75	50	R <sub>80</sub>	Extra low carbon version of 304 for enhanced welding properties
308	0.04		10.25	20.75							Used in welding electrodes or filler wire
308L	0.03		10.25	20.75							Extra low carbon version of 308 used for welding filler wire
309	0.12		14.40	22.25			45	90	45	R <sub>85</sub>	High tensile and creep strength at elevated temperatures. 309L is a low carbon version used for welding electrodes and filler wire
310	0.13		19.75	24.75			45	95	45	R <sub>85</sub>	Excellent high temperature properties with good ductility and weldability - designed for cyclic elevated temperatures
310S	0.05		19.50	24.50							Low carbon version of grade 310
316	0.07		13.00	16.50	2.50		40	90	50	R <sub>85</sub>	Molybdenum bearing grade better overall corrosion resistance than 304
316L	0.023		13.40	16.50	2.70		32	75	50	R <sub>80</sub>	Low carbon version of 316 used where impossible to anneal after welding
321	0.07		10.25	17.75		Ti 0.45	35	90	50	R <sub>80</sub>	Austenitic 18/8 stainless steel with the addition of titanium. Resistant to intergranular corrosion 425-870° C

# REFRACTORY ANCHORS CATALOGUE



430	0.06			17.20	0.90		Sheet Annealed Cold Rolled	45 up to 95	75 up to 110	25	R <sub>g</sub> 80 up to 225	Ferritic, Non Hardenable grade of stainless - good formability and mechanical properties.
410	0.13			12.25			Sheet Annealed Heat Treated	45 140	70 180	25 15	R <sub>g</sub> 80 R <sub>c</sub> 43	Machinable and hardenable grade of stainless steel
416	0.12			12.50		S 0.25						Highly Machinable and hardenable grade of stainless steel
420	0.31			13.00			Bar Annealed Heat Treated	50 195	95 230	25 8	R <sub>g</sub> 92 500	Heat treatable stainless Hardenable to 50R <sub>c</sub>
431	0.15		2.00	15.75			Bar Annealed Hardened	95 150	125 195	25 15	260 400	Heat treatable Martensitic Nickel bearing grade. Excellent Tensile strength.
600 INCONEL	0.15 max	1.0 max	72.00 min	14.0 - 17.0		S 0.015max Si 0.5 max Cu 0.5max		35	91			Good oxidation resistance at high temperatures and resistance to chloride-ion stress corrosion, corrosion by high purity water and caustic corrosion
601 INCONEL	0.10 max	1.0 max	58.0 - 63.0	21.0 - 25.0		S 0.015 max Si 0.50 max Cu 1.0-1.7 Al 1.0-1.7		35	101			Nickel chrome alloy with the addition of aluminium for outstanding resistance to oxidation at high temperatures.
800HT INCOLOY	0.06- 0.10	1.50 max	30.0 - 35.0	19.0 - 23.0		S 0.015 max Si 1.0 max Cu 0.75 max Al 0.15-0.60 Ti 0.15-0.60		34	83			Excellent resistance to oxidation and carburization at high temperature. Higher creep-rupture strength at high temperature.
INCOLOY DS	0.10 max	0.8 - 1.5	34.5 - 41.0	17.0 - 19.0		S 0.03 max Cu 0.50 max Ti 0.20 max Si 1.9 - 2.6		32	88			Good high temperature strength and resistance to oxidation and carburization. Used for internal furnace parts.
253MA (ASTM S30815)	0.10 max		9.5	18.5		Si N, Ce	Sheet Annealed	45	94	40	R <sub>g</sub> 95 max	Very good high temperature corrosion resistance. Good forming and welding characteristics



# REFRACTORY ANCHORS CATALOGUE



## TABLE OF CONVERSION FACTORS (ARRANGED ALPHABETICALLY)

The figures  $10^1$ ,  $10^2$ ,  $10^3$ , etc. denote 0.1, 0.01, 0.001, etc respectively. The figures  $10^1$ ,  $10^2$ ,  $10^3$ , etc. denote 10, 100, 1000 etc.

### MULTIPLY

### BY

### TO OBTAIN

Acres	4047	Square meters
British Thermal Units	0.2520	Kilogram-calories
B.T.U. / min.	0.01757	Kilowatts
Cubic feet	0.02832	Cubic metres
Cubic feet	7.48052	Gallons
Cubic feet	28.32	Litres
Cubic feet / minute	0.4720	Litres / sec.
Cubic inches	16.39	Cubic centimetres
Cubic inches	$1.639 \times 10^{-5}$	Cubic metres
Cubic inches	$1.639 \times 10^{-2}$	Litres
Cubic metres	61.023	Cubic inches
Cubic metres	264.2	Gallons
Cubic metres	1000	Litres
Feet / second	1.097	Kilometres / hr.
Feet / second	0.5921	Knots
Feet / second / second	0.3048	Metres / sec./sec.
Foot - pounds	$3.241 \times 10^{-4}$	Kilogram - calories
Gallons	$3.785 \times 10^{-3}$	Cubic metres
Hectares	2.471	Acres
Horse - power	10.70	Kilogram - calories/min
Horse - power	0.7457	Kilowatts
Horse - power (boiler)	9.803	Kilowatts
Inches	2.540	Centimetres
Gallons	3.785	Litres
Gallons, Imperial	4.5460	Litres
Kilograms	2.205	Pounds
Kilograms - calories	3086	Foot - pounds
Kilometres	3281	Feet
Kilometres	0.6214	Miles
Kilometres / hr.	54.68	Feet / min.
Kilometres / hr.	0.6214	Miles / hr.
Kilowatts	1.341	Horse - power
Kilowatts	14.34	Kilogram-calories/min.
Kilowatt - hours	860.5	Kilogram - calories
Litres	0.03531	Cubic feet
Litres	0.2642	Gallons
Miles / hour	1.609	Kilometres / hr.
Millimetres	0.03937	Inches
Metres	3.281	Feet
Metres	39.37	Inches
Metres	$10^{-3}$	Miles
Miles	1.609	Kilometres
Pounds sq. inch	703.1	Kilograms sq. metre
Square metres	$2.471 \times 10^{-4}$	Acres
Square metres	10.76	Square feet
Square metres	$3.861 \times 10^{-7}$	Square miles
Square metres	1550	Square inches
Square miles	640	Acres
Square yards	$2.066 \times 10^{-4}$	Acres
Square feet	$2.296 \times 10^{-5}$	Acres
Square feet	0.09290	Square metres
Square feet	$3.587 \times 10^{-8}$	Square miles
Tons (metric)	2205	Pounds
Watts	$1.341 \times 10^{-3}$	Horse - power
Watts	0.01434	Kilogram-calories/min.

# REFRACTORY ANCHORS CATALOGUE



## STANDARD SERIES & SELECTED COMBINATIONS - UNIFIED SCREW THREADS

Nominal Size, Threads per Inch, and Series Designation	External Major Diameter Min	Internal Minor Diameter Max	Internal Major Diameter
$\frac{1}{4}$ - 56 UNS	0.2451	0.235	0.2500
$\frac{5}{16}$ - 27 UNS	0.3048	0.281	0.3125
$\frac{5}{16}$ - 36 UNS	0.3061	0.289	0.3125
$\frac{5}{16}$ - 40 UNS	0.3065	0.291	0.3125
$\frac{5}{16}$ - 48 UNS	0.3072	0.295	0.3125
$\frac{3}{8}$ - 18 UNS	0.3650	0.328	0.3750
$\frac{3}{8}$ - 27 UNS	0.3672	0.344	0.3750
$\frac{3}{8}$ - 40 UNS	0.3690	0.354	0.3750
0.390 - 27 UNS	0.3822	0.359	0.3900
$\frac{7}{16}$ - 18 UNS	0.4275	0.390	0.4375
$\frac{7}{16}$ - 24 UNS	0.4292	0.402	0.4375
$\frac{1}{2}$ - 12 UNS	0.4870	0.428	0.5000
$\frac{1}{2}$ - 14 UNS	0.4882	0.438	0.5000
$\frac{1}{2}$ - 18 UNS	0.4900	0.453	0.5000
$\frac{1}{2}$ - 24 UNS	0.4916	0.465	0.5000
$\frac{1}{2}$ - 27 UNS	0.4922	0.469	0.5000
$\frac{9}{16}$ - 14 UNS	0.5507	0.501	0.5625
$\frac{9}{16}$ - 27 UNS	0.5547	0.531	0.5625
$\frac{5}{8}$ - 14 UNS	0.6132	0.564	0.6250
$\frac{5}{8}$ - 27 UNS	0.6172	0.594	0.6250
$\frac{3}{4}$ - 14 UNS	0.7382	0.688	0.7500
$\frac{3}{4}$ - 18 UNS	0.7399	0.703	0.7500
$\frac{3}{4}$ - 24 UNS	0.7416	0.715	0.7500
$\frac{3}{4}$ - 27 UNS	0.7421	0.719	0.7500
$\frac{7}{8}$ - 10 UNS	0.8603	0.788	0.8750
$\frac{7}{8}$ - 18 UNS	0.8649	0.828	0.8750
$\frac{7}{8}$ - 24 UNS	0.8666	0.840	0.8750
$\frac{7}{8}$ - 27 UNS	0.8671	0.844	0.8750
1 - 10 UNS	0.9853	0.913	1.0000
1 - 14 UNS	0.9880	0.938	1.0000
1 - 18 UNS	0.9899	0.953	1.0000
1 - 24 UNS	0.9915	0.965	1.0000
1 - 27 UNS	0.9921	0.969	1.0000
1 $\frac{1}{8}$ - 10 UNS	1.1103	1.038	1.1250
1 $\frac{1}{8}$ - 14 UNS	1.1131	1.064	1.1250
1 $\frac{1}{8}$ - 24 UNS	1.1165	1.090	1.1250

# REFRACTORY ANCHORS CATALOGUE



## COARSE - THREAD SERIES, UNC, UNRC - BASIC DIMENSIONS

Sizes No. or Inches	Basic Major Diam. , $D$ Inches	Threads per Inch, $n$	Minor Diameter	
			Ext. Threads, $c$ $d_1$ (Ref.)	Int. Threads, $d$ $D_1$
			Inches	Inches
$1/4$	0.2500	20	0.1905	0.1959
$5/16$	0.3125	18	0.2464	0.2524
$3/8$	0.3750	16	0.3005	0.3073
$7/16$	0.4375	14	0.3525	0.3602
$1/2$	0.5000	13	0.4084	0.4167
$9/16$	0.5625	12	0.4633	0.4723
$5/8$	0.6250	11	0.5168	0.5266
$3/4$	0.7500	10	0.6309	0.6417
$7/8$	0.8750	9	0.7427	0.7547
1	1.0000	8	0.8512	0.8647
$1 1/8$	1.1250	7	0.9549	0.9704
$1 1/4$	1.2500	7	1.0799	1.0954
$1 3/8$	1.3750	6	1.1766	1.1946
$1 1/2$	1.5000	6	1.3016	1.3196
$1 3/4$	1.7500	5	1.5119	1.5335
2	2.0000	$4 1/2$	1.7353	1.7594

## FINE - THREAD SERIES, UNF, UNRF - BASIC DIMENSIONS

Sizes No. or Inches	Basic Major Diam, $D$ Inches	Threads per Inch, $n$	Minor Diameter	
			Ext. Threads, $c$ $d_1$ (Ref.)	Int. Threads, $d$ $D_1$
			Inches	Inches
$1/4$	0.2500	28	0.2074	0.2113
$5/16$	0.3125	24	0.2629	0.2674
$3/8$	0.3750	24	0.3254	0.3299
$7/16$	0.4375	20	0.3780	0.3834
$1/2$	0.5000	20	0.4405	0.4459
$9/16$	0.5625	18	0.4964	0.5024
$5/8$	0.6250	18	0.5589	0.5649
$3/4$	0.7500	16	0.6763	0.6823
$7/8$	0.8750	14	0.7900	0.7977
1	1.0000	12	0.9001	0.9098
$1 1/8$	1.1250	12	1.0258	1.0348
$1 1/4$	1.2500	12	1.1508	1.1598
$1 3/8$	1.3750	12	1.2758	1.2848
$1 1/2$	1.5000	12	1.4008	1.4098

# REFRACTORY ANCHORS CATALOGUE



## I.S.O METRIC COARSE THREADS

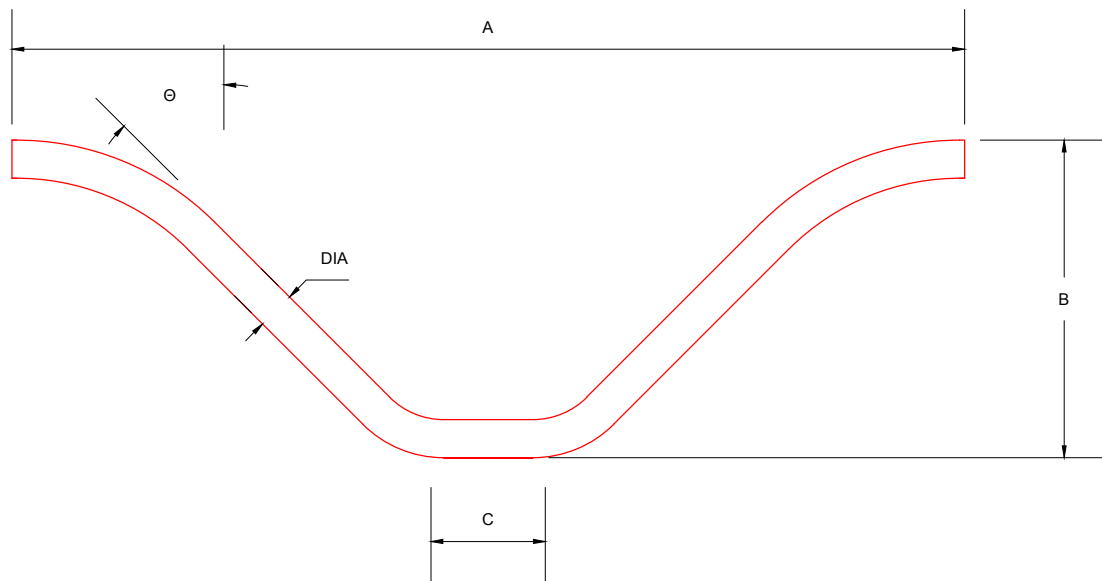
Note: All dimension in mm's

THREAD	O. Dia.	Pitch
M5	5.0	0.80
M6	6.0	1.00
M7	7.0	1.00
M8	8.0	1.25
M10	10.0	1.50
M12	12.0	1.75
M14	14.0	2.00
M16	16.0	2.00
M18	18.0	2.50
M20	20.0	2.50
M22	22.0	2.50
M24	24.0	3.00
M27	27.0	3.00
M30	30.0	3.50
M33	33.0	3.50
M36	36.0	4.00
M39	39.0	4.00
M42	42.0	4.50
M45	45.0	4.50
M48	48.0	5.00
M52	52.0	5.00

## AMERICAN NATIONAL STANDARD TAPER PIPE THREADS

NPT (ANSI / ASME B1.20.1 - 1983, R1992)

Nominal Pipe Size	Outside Dia. of Pipe	Threads per inch,	Pitch of Thread	Handtight Engagement	
				Length, $L_1$ In.	Diam., E1
$\frac{1}{16}$	0.3125	27	0.03704	0.160	0.28118
$\frac{1}{8}$	0.405	27	0.03704	0.1615	0.37360
$\frac{1}{4}$	0.540	18	0.05556	0.2278	0.49163
$\frac{3}{8}$	0.675	18	0.05556	0.240	0.62701
$\frac{1}{2}$	0.840	14	0.07143	0.320	0.77843
$\frac{3}{4}$	1.050	14	0.07143	0.339	0.98887
1	1.0315	11 $\frac{1}{2}$	0.08696	0.400	1.23863
1 $\frac{1}{4}$	1.660	11 $\frac{1}{2}$	0.08696	0.420	1.58338
1 $\frac{1}{2}$	1.900	11 $\frac{1}{2}$	0.08696	0.0420	1.82234
2	2.375	11 $\frac{1}{2}$	0.08696	0.436	2.29627



Anchor	A	B	Θ
PFCH1	100	25	30
PFCH1½	125	38	30
PFCH2	150	50	45
PFCH2½	175	63	45
PFCH3	175	76	30
PFCH3½	200	88	30

TYPICALLY USED DIAMETERS 5MM, 6MM, 8MM



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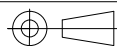
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TITLE  
PF CH ANCHOR

FILE NAME: PF CH ANCHOR - PF - R001.DWG



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SCALE  
N.T.S

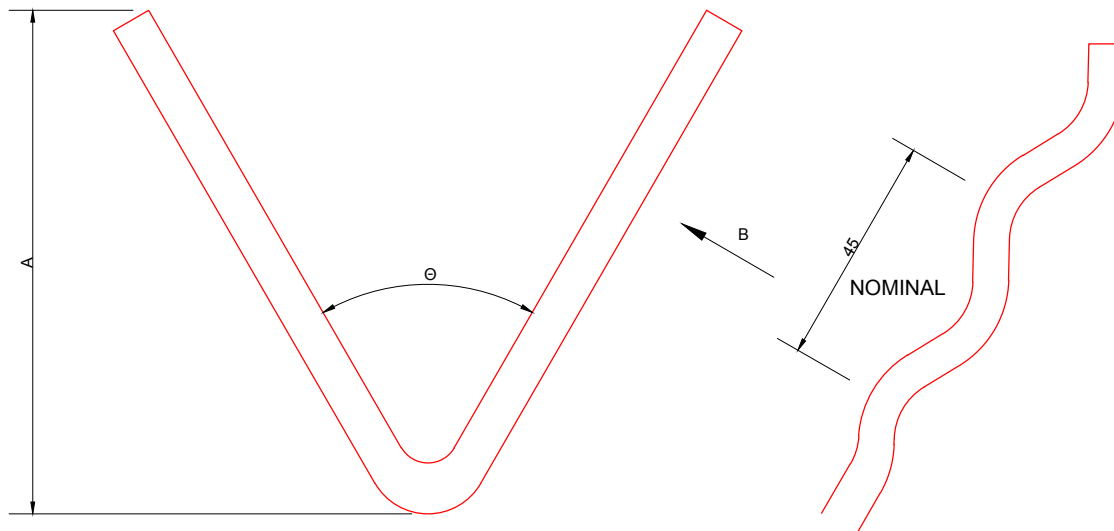
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DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R001

DATE  
31.3.11  
SIZE  
A4  
REV



**ELEVATION**  
V BASE ANCHOR FOR  
MANUAL WELDING

**VIEW ON B**



**OPTIONS:**

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY ANGLE AND CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE

**COMMON WIRE SIZES CHOSEN:**

A=15-40MM DIA= 3-5MM  
A=25-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA= 10MM



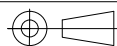
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TITLE  
PF VW ANCHOR

FILE NAME: PF VW ANCHOR - PF - R002.DWG



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N.T.S

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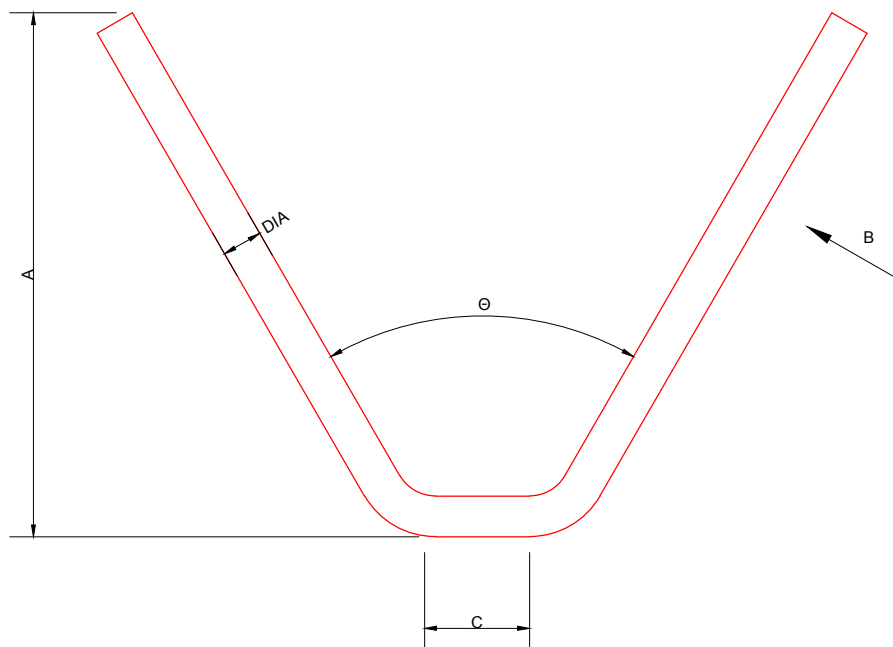
DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

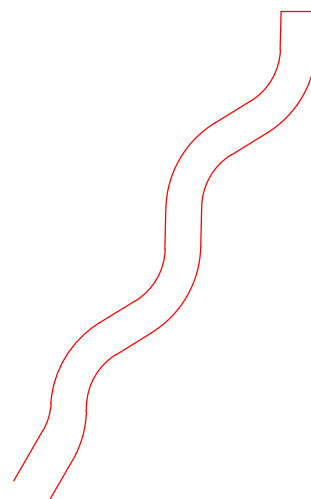
DWG No.  
PF - R002

DATE  
31.3.11  
SIZE  
A4  
REV





**ELEVATION**  
MANUAL WELDING  
FLAT BASE ANCHOR



**VIEW ON B**



**OPTIONS:**

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE

**COMMON WIRE SIZES CHOSEN:**

A=15-40MM DIA= 3-5MM  
A=25-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM



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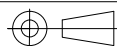
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TITLE  
PF VWF ANCHOR

FILE NAME: PF VWF ANCHOR - PF - R003.DWG



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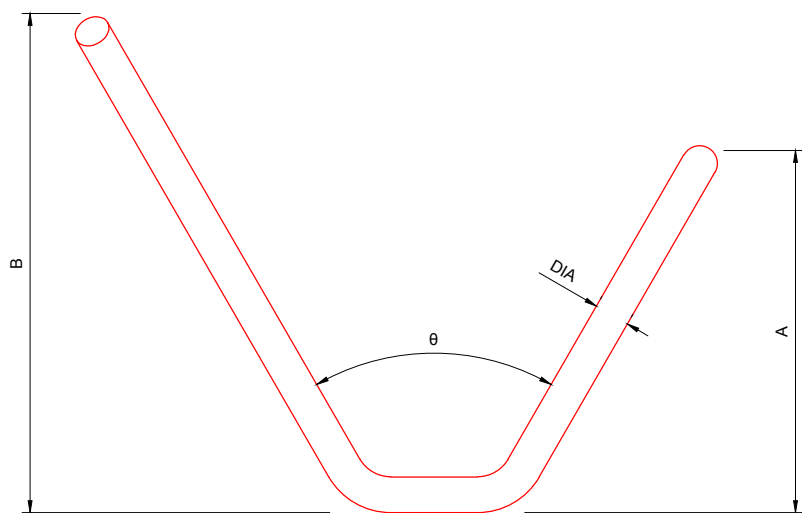
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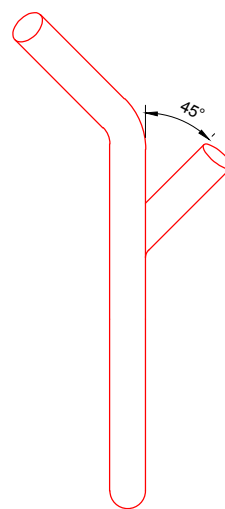
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DWG No.  
PF - R003

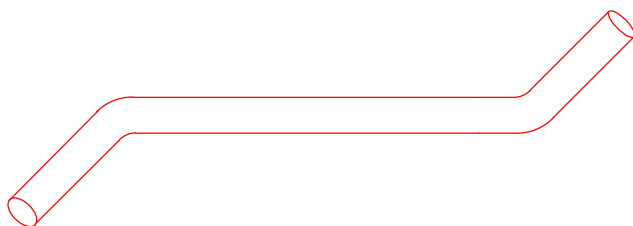
DATE  
31.3.11  
SIZE  
A4  
REV



ELEVATION



ELEVATION



PLAN



## OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

## COMMON WIRE SIZES CHOSEN:

A=15-40MM DIA= 3-5MM  
A=15-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM

ANC No	A	B	C	θ	DIA
PFWO 22	50	50	22	60	6
PFWO 32	75	50	32	60	6
PFWO 43	100	75	43	60	6
PFWO 54	125	100	54	60	6
PFWO 65	150	125	65	60	6
PFWO 76	175	150	76	45	8
PFWO 87	200	175	87	45	8
PFWO 98	230	200	98	45	8
PFWO 109	250	230	109	45	8



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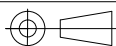
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TITLE  
PF WOL ANCHOR

FILE NAME: PF WOL ANCHOR - PF - R004.DWG



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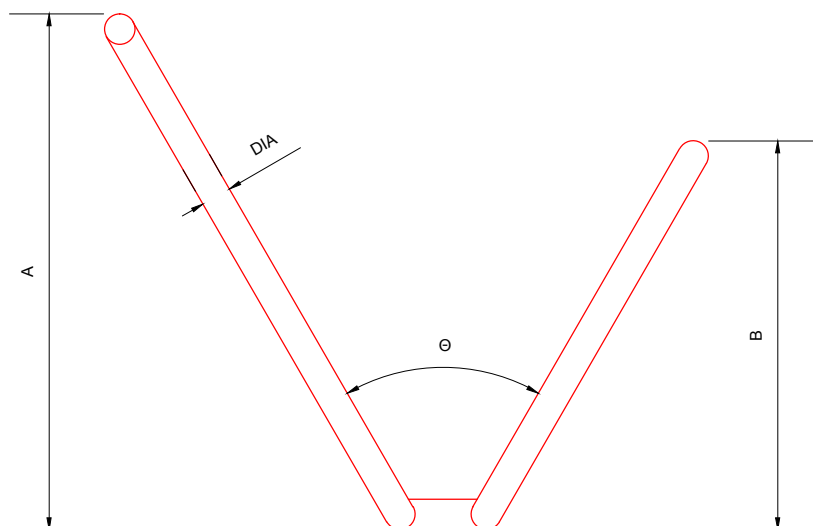
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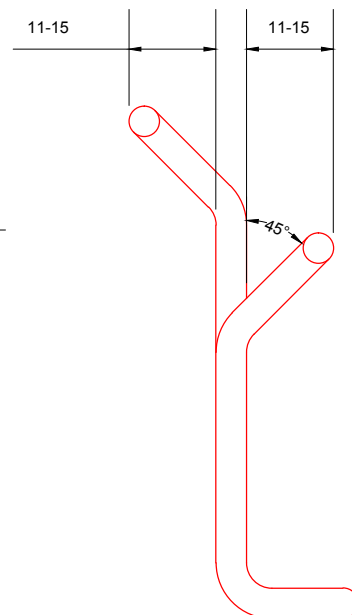
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R004

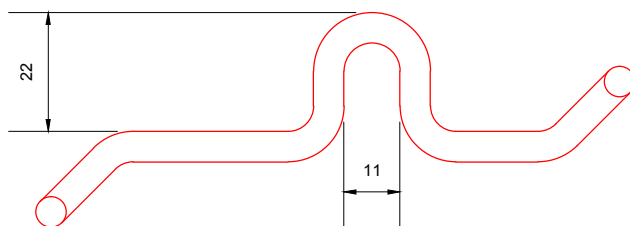
DATE  
31.3.11  
SIZE  
A4  
REV



**ELEVATION**  
LOOP BASE ANCHOR  
FOR BOLTING OR WELDING



**ELEVATION**



**PLAN**



**OPTIONS:**

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

**COMMON WIRE SIZES CHOSEN:**

A=15-40MM DIA= 3-5MM  
A=25-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM

ANC No	A	B	C	$\theta$	DIA
PFWO 22	50	50	22	60	6
PFWO 32	75	50	32	60	6
PFWO 43	100	75	43	60	6
PFWO 54	125	100	54	60	6
PFWO 65	150	125	65	60	6
PFWO 76	175	150	76	45	8
PFWO 87	200	175	87	45	8
PFWO 98	230	200	98	45	8
PFWO 109	250	230	109	45	8



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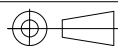
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TITLE  
PF WBL ANCHOR

FILE NAME: PF WBL ANCHOR - PF - R005.DWG



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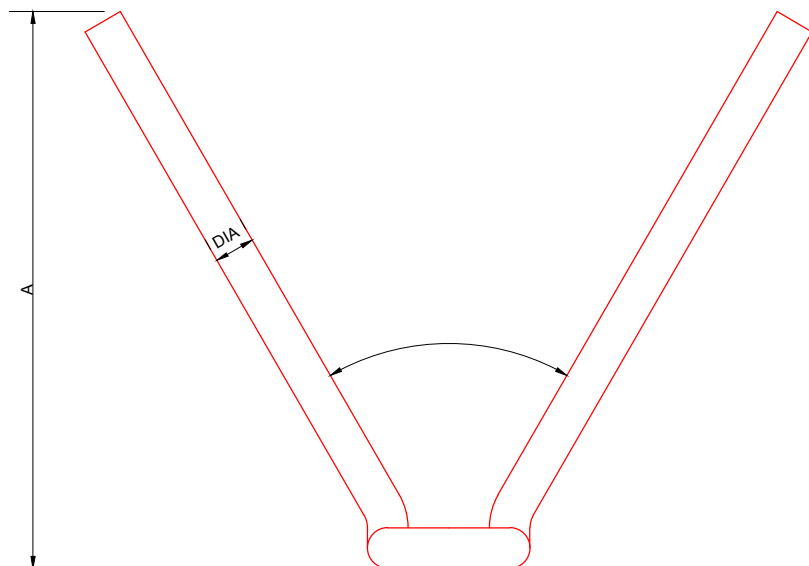
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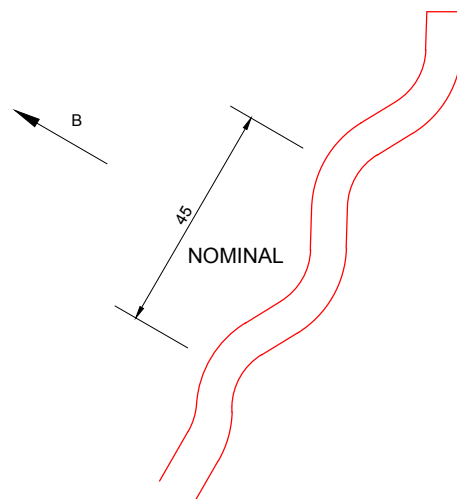
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DWG No.  
PF - R005

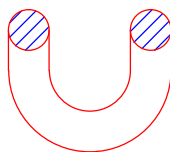
DATE  
31.3.11  
SIZE  
A4  
REV



ELEVATION



VIEW ON B

BASE DETAIL  
VIEW ON ALOOP BASE ANCHOR FOR BOLTING  
OR MANUAL WELDING

## OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

## COMMON WIRE SIZES CHOSEN:

A=15-40MM DIA= 3-5MM  
A=25-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM



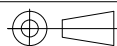
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TITLE  
PF VWL ANCHOR

FILE NAME: PF VWL ANCHOR - PF - R006.DWG



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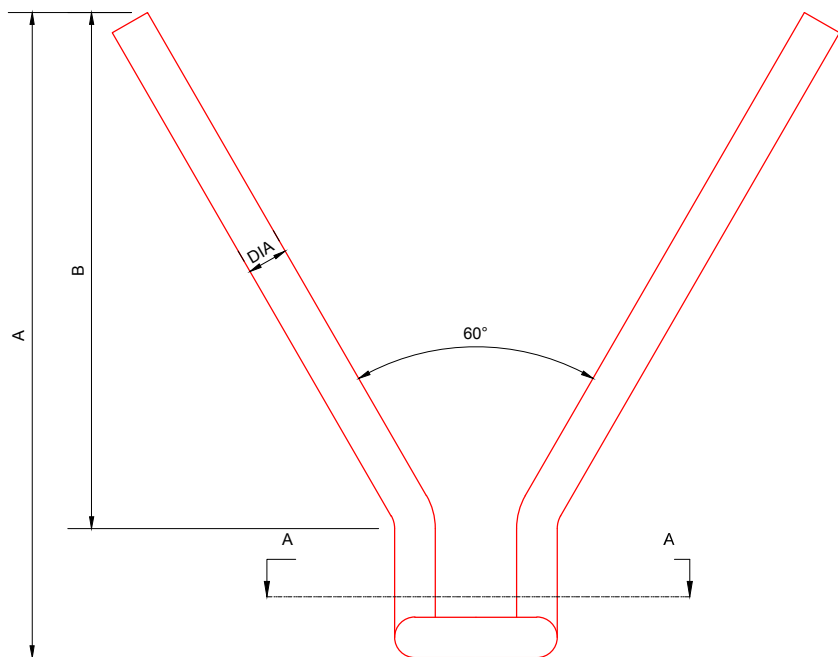
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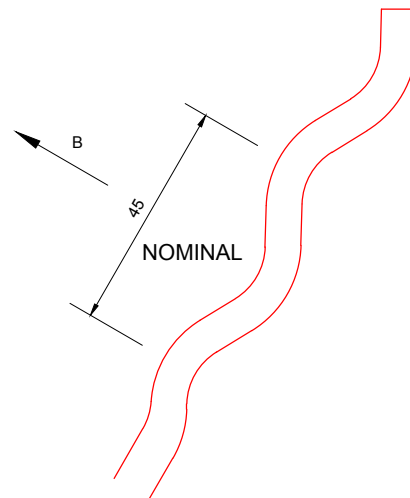
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DWG No.  
PF - R006

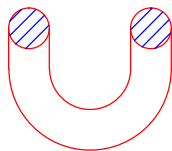
DATE  
31.3.11  
SIZE  
A4  
REV



ELEVATION



VIEW ON B

BASE DETAIL  
VIEW ON ALOOP BASE ANCHOR FOR BOLTING  
OR MANUAL WELDING

## OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

## TYPICAL WIRE DIAMETERS:

TO PFVS 40 6 OR 8MM  
TO PFVS 60 8MM  
PFVS 50-80 8 OR 10MM

ANC No	A	B
PFVS-25	70	70
PFVS-35	90	70
PFVS-40	110	90
PFVS-50	130	100
PFVS-60	150	100
PFVS-70	180	100
PFVS-80	200	100



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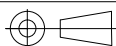
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TITLE  
PF VSL ANCHOR

FILE NAME: PF VSL ANCHOR - PF - R007.DWG



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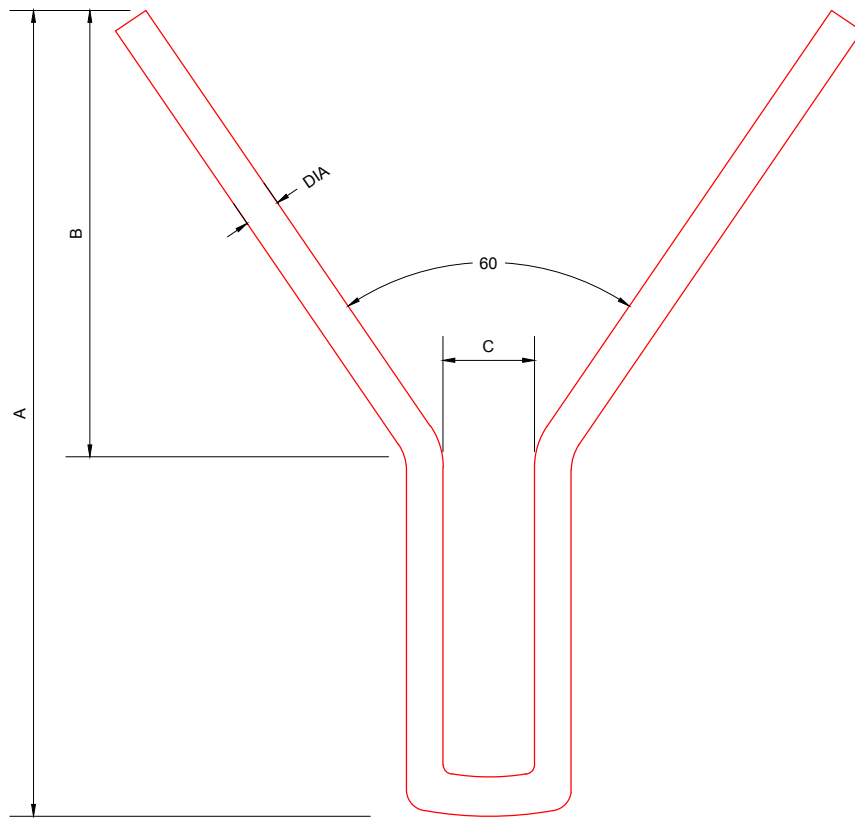
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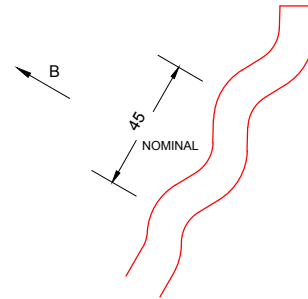
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R007

DATE  
31.3.11  
SIZE  
A4  
REV



**ELEVATION**  
FLAT BASE MANUAL  
WELDING ANCHOR



**VIEW ON B**



**BASE DETAIL**

**OPTIONS:**

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

NORMALLY B=100 A=110-300

**TYPICAL WIRE SIZES**

A=110-175MM 8MM DIA  
A=150-300MM 10MM DIA



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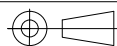
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TITLE  
PF YSWF ANCHOR

FILE NAME: PF YSWF ANCHOR - PF - R008.DWG



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B.MITCHELL

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PAGE/SHEET

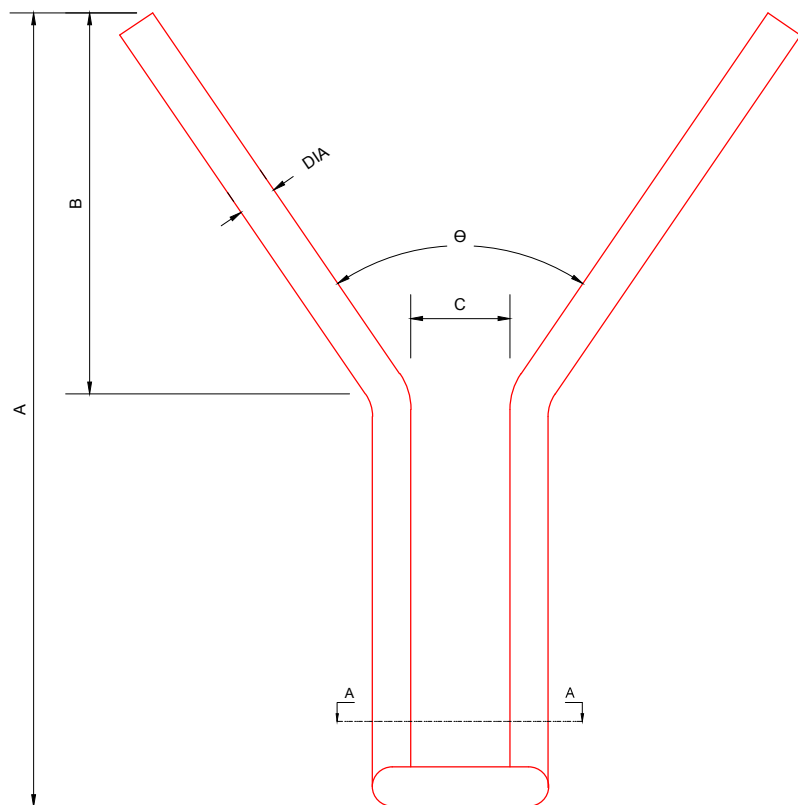
DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

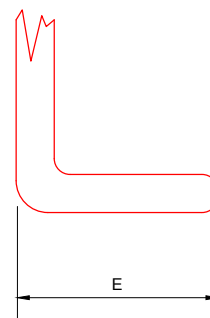
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PF - R008

DATE  
5.12.11  
SIZE  
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REV

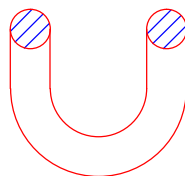




ELEVATION



BASE DETAIL

BASE DETAIL  
VIEW ON A

LOOP BASE ANCHOR FOR BOLTING  
OR MANUAL WELDING

## OPTIONS

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90 DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG, NO CORRUGATION

NORMALLY  
A = 110 - 300MM  
B = 100MM

TYPICAL WIRE SIZES  
A = 110MM - 175MM 8MM DIA  
A = 150 - 300MM 10MM DIA



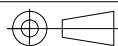
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TITLE  
PF YSWL ANCHOR

FILE NAME: PF YSWL ANCHOR - PF - R009.DWG



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B.MITCHELL

SCALE  
N.T.S

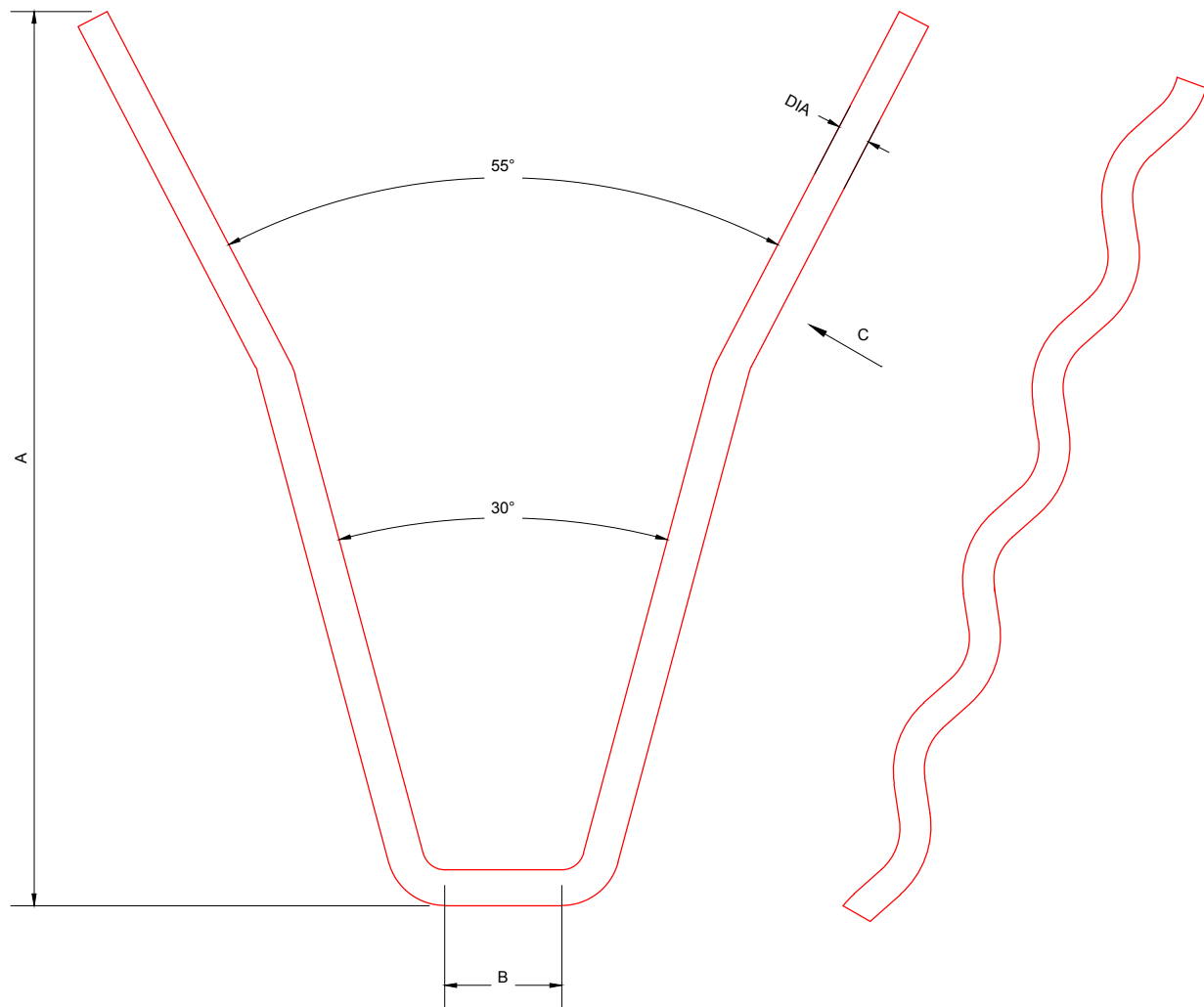
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DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R009

DATE  
5.12.11  
SIZE  
A4  
REV



ELEVATION

VIEW ON C

### OPTIONS

STAGGER LEG HEIGHT  
 VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
 VARY CORRUGATION DEPTH/PITCH  
 EXTEND OR CONTRACT BASE  
 STRAIGHT LEG, NO CORRUGATION

### COMMON WIRE SIZES CHOSEN

A=15-40MM	DIA=3-5MM
A=15-100MM	DIA=6MM
A=75-200MM	DIA=8MM
A=150-300MM	DIA=10MM



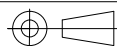
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TITLE  
 PF BULL HORN ANCHOR

FILE NAME: PF BULL HORN ANCHOR - PF - R010.DWG



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 D.BRAMLEY

SCALE  
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PAGE/SHEET

DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

DWG No.  
 PF - R010

DATE  
 31.3.11  
 SIZE  
 A4  
 REV

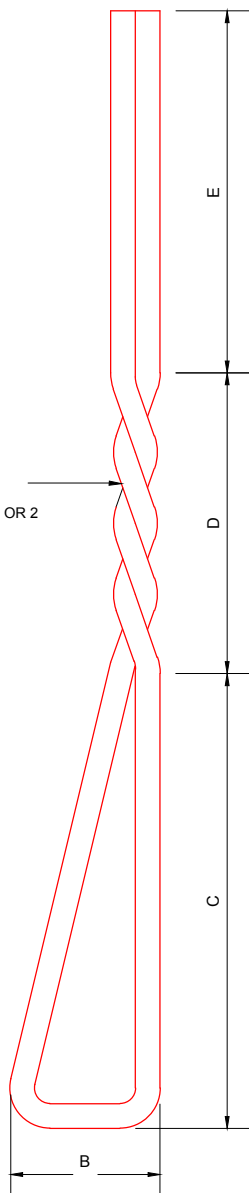
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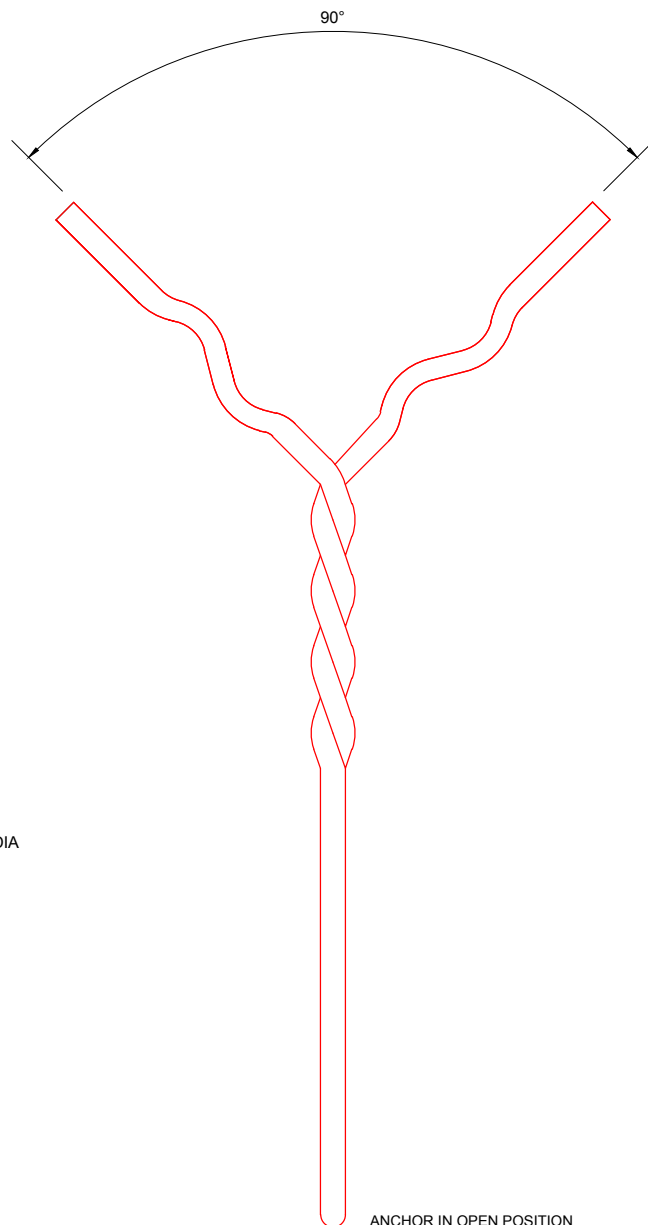
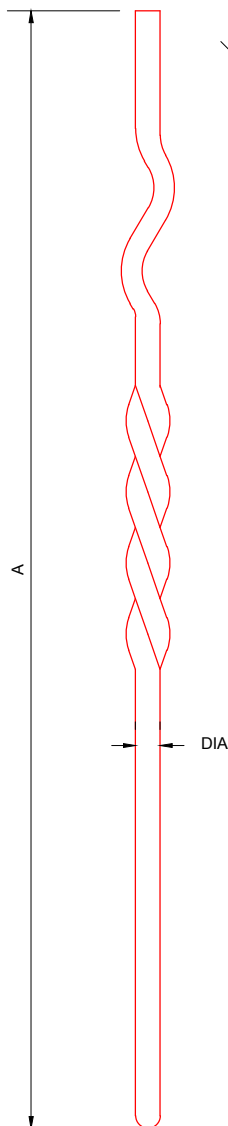
C

D

F= NUMBER  
OF TWISTS  
USUALLY 1.5 OR 2



IDEAL ANCHOR FOR MULTI-LAYER  
CASTABLE AND WHERE WELDING WINGS  
OR LEGS ONTO THE STEM IS NOT PREFERRED



ANCHOR IN OPEN POSITION

CAN BE SUPPLIED CLOSED  
COMMON DIAMETER USED IS 7.5 TO 8MM  
MINIMUM HEIGHT FOR C=100MM  
WITH EXISTING TOOLING



#### OPTIONS:

LEG HEIGHT CAN BE STAGGERED  
NO CORRUGATION IN LEGS  
LOOP BASE FOR BOLTING APPLICATIONS



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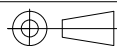
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TITLE  
PF TWIST ANCHOR

FILE NAME: PF TWIST ANCHOR - PF - R011.DWG



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DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R011

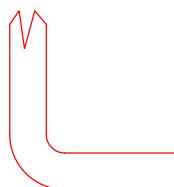
DATE  
31.3.11

SIZE  
A4

REV

2

ELEVATION



L BASE SOMETIMES PREFERRED  
FOR HIGHER STRENGTH WELD  
ATTACHMENT

OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

### COMMON WIRE SIZES CHOSEN

A=75-200MM	DIA= 8MM
A=150-300MM	DIA= 10MM



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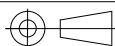
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TITLE  
PF Y ANCHOR

DATE	REVISION	BY

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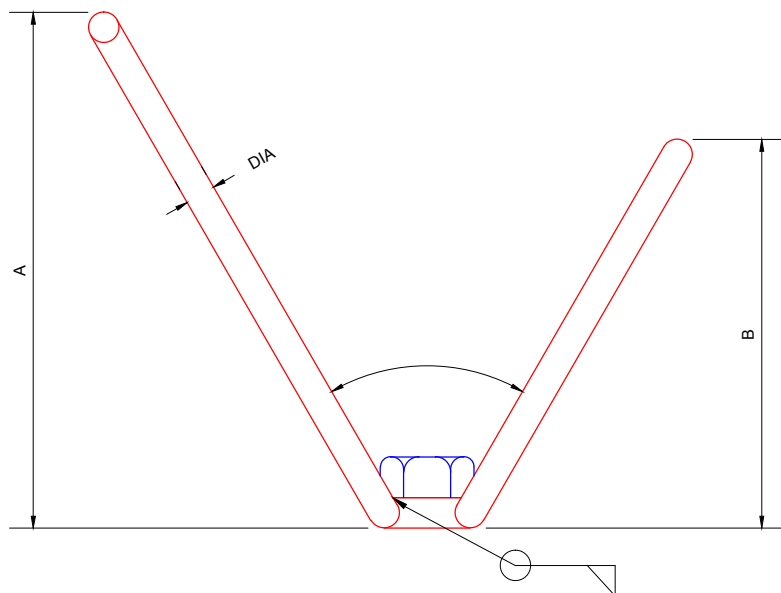


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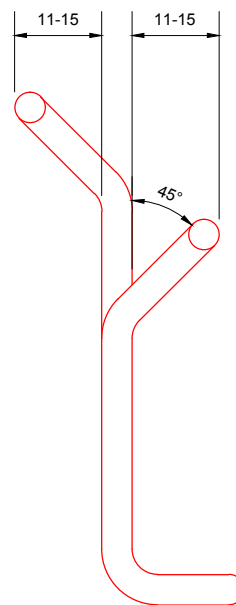
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T	DWG No. PF - R012
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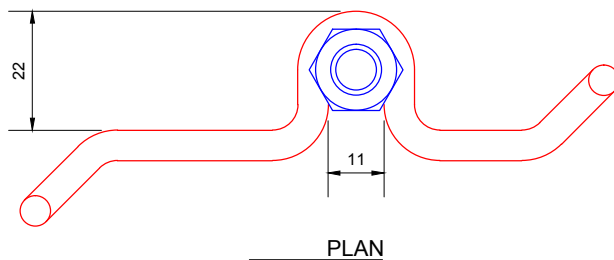
DATE 31.3.11	
SIZE A4	REV



**ELEVATION**  
LOOP BASE ANCHOR  
FOR BOLTING OR WELDING



**ELEVATION**



**PLAN**



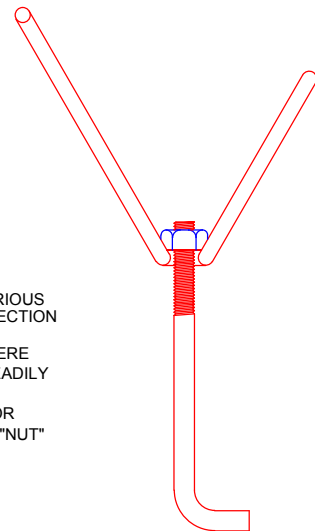
#### OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

COMMON WIRE SIZES CHOSEN:  
A=15-40MM DIA= 3-5MM  
A=15-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM

CAN BE COMBINED WITH VARIOUS  
STUD DESIGNS, SEE STUD SECTION

IN THE CASE OF ALLOYS WHERE  
HEXAGON NUTS ARE NOT READILY  
AVAILABLE E.G. 310, 253MA,  
INCONEL, INCOLOY ROUND OR  
SQUARE DRILLED & TAPPED "NUT"  
MAY BE SUBSTITUTED



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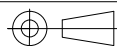
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TITLE  
PF - WB HEXNUT ANCHOR

FILE NAME: PF - WB HEXNUT ANCHOR - PF - R013.DWG



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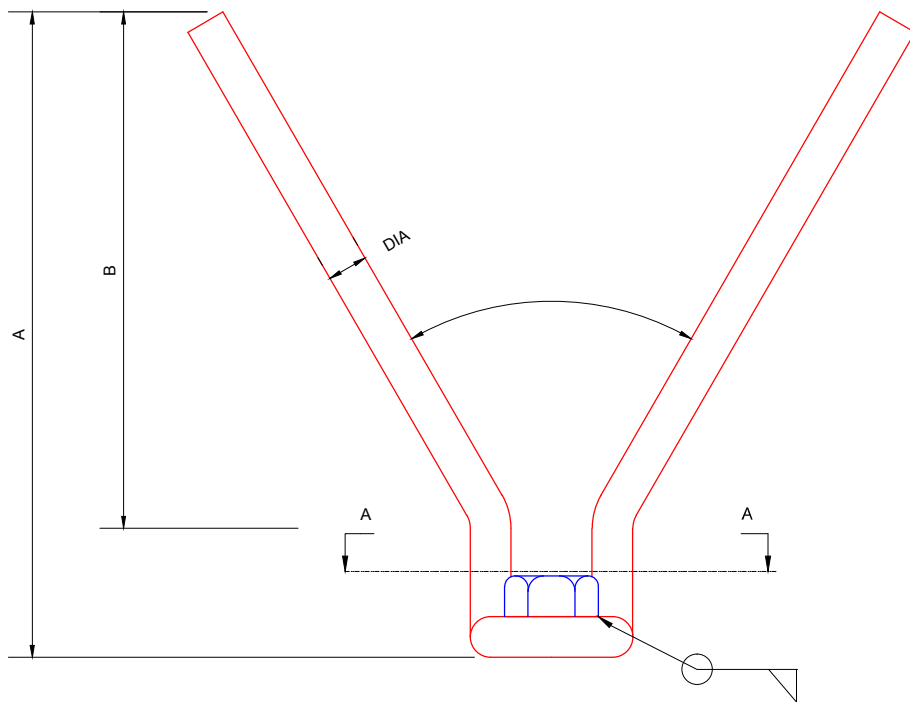
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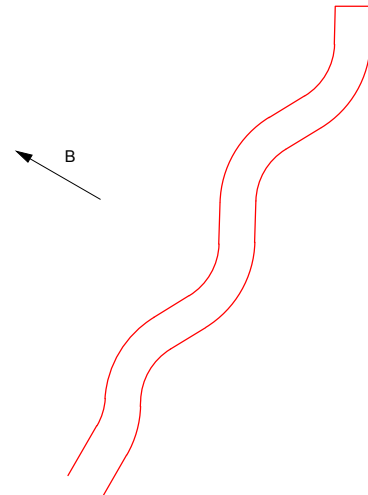
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PF - R013

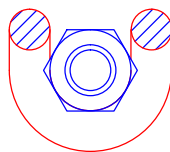
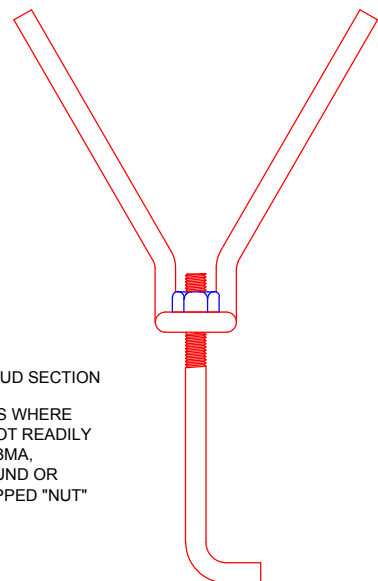
DATE  
31.3.11  
SIZE  
A4  
REV



ELEVATION



VIEW ON B

BASE DETAIL  
VIEW ON A

## OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG NO CORRUGATION

## COMMON WIRE SIZES CHOSEN:

A=15-40MM DIA= 3-5MM  
A=25-100MM DIA= 6MM  
A=75-200MM DIA= 8MM  
A=150-300MM DIA=10MM

## STUD DESIGNS, SEE STUD SECTION

IN THE CASE OF ALLOYS WHERE  
HEXAGON NUTS ARE NOT READILY  
AVAILABLE E.G. 310, 253MA,  
INCONEL, INCOLOY ROUND OR  
SQUARE DRILLED & TAPPED "NUT"  
MAY BE SUBSTITUTED



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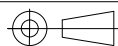
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TITLE  
PF VS - HEXNUT ANCHOR

FILE NAME: PF VS - HEXNUT ANCHOR - PF - R014.DWG



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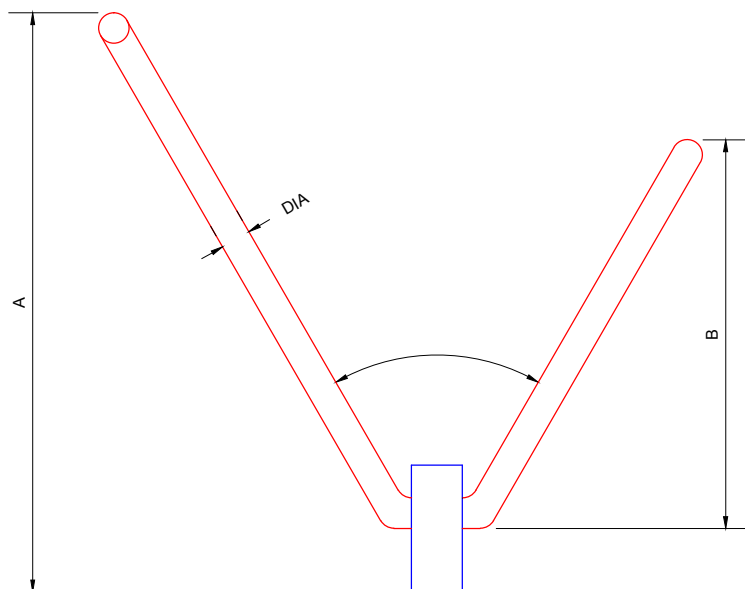
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MATERIAL: STAINLESS STEEL

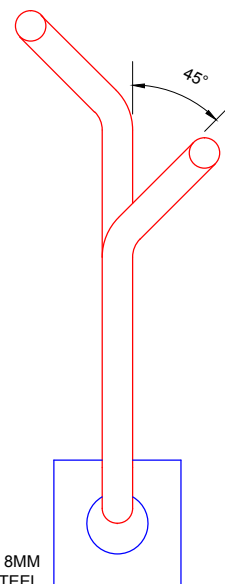
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PF - R014

DATE  
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SIZE  
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REV

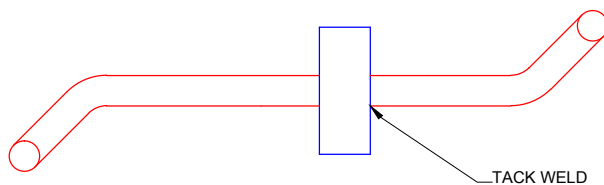




ELEVATION



ELEVATION



PLAN



## OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG, NO CORRUGATION

## COMMON WIRE SIZES CHOSEN

A=15-40MM DIA=3-5MM  
A=15-100MM DIA=6MM  
A=75-200MM DIA=8MM  
A=150-300MM DIA=10MM

TYPE	ANCHOR	A
PFWN 22	PFWO 22	63
PFWN 32	PFWO 32	88
PFWN 43	PFWO 43	112
PFWN 54	PFWO 54	138
PFWN 65	PFWO 65	162
PFWN 76	PFWO 76	190
PFWN 87	PFWO 87	215
PFWN 98	PFWO 98	242
PFWN 109	PFWO 109	267



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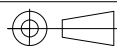
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TITLE  
PF WN ANCHOR

FILE NAME: PF WN ANCHOR - PF - R015.DWG



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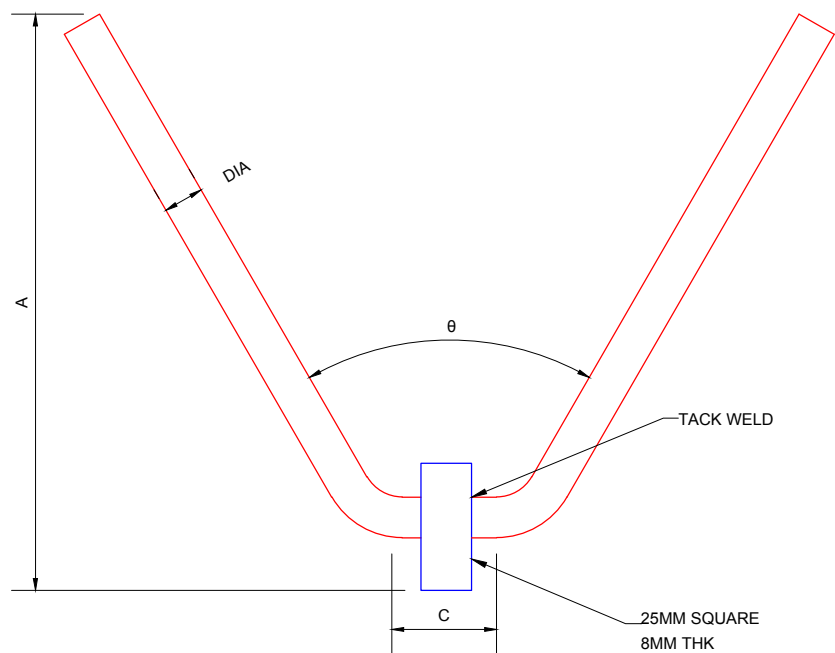
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DATE	REVISION	BY

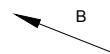
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R015

DATE  
31.3.11  
SIZE  
A4  
REV



ELEVATION



VIEW ON B



## OPTIONS:

STAGGER LEG HEIGHT  
 VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
 VARY CORRUGATION DEPTH/PITCH  
 EXTEND OR CONTRACT BASE  
 STRAIGHT LEG, NO CORRUGATION

## COMMON WIRE SIZES CHOSEN

A=15-40MM DIA=3-5MM  
 A=15-100MM DIA=6MM  
 A=75-200MM DIA=8MM  
 A=150-300MM DIA=10MM



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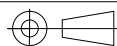
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TITLE  
 PF VWFN ANCHOR

FILE NAME: PF VWFN ANCHOR - PF - R016.DWG



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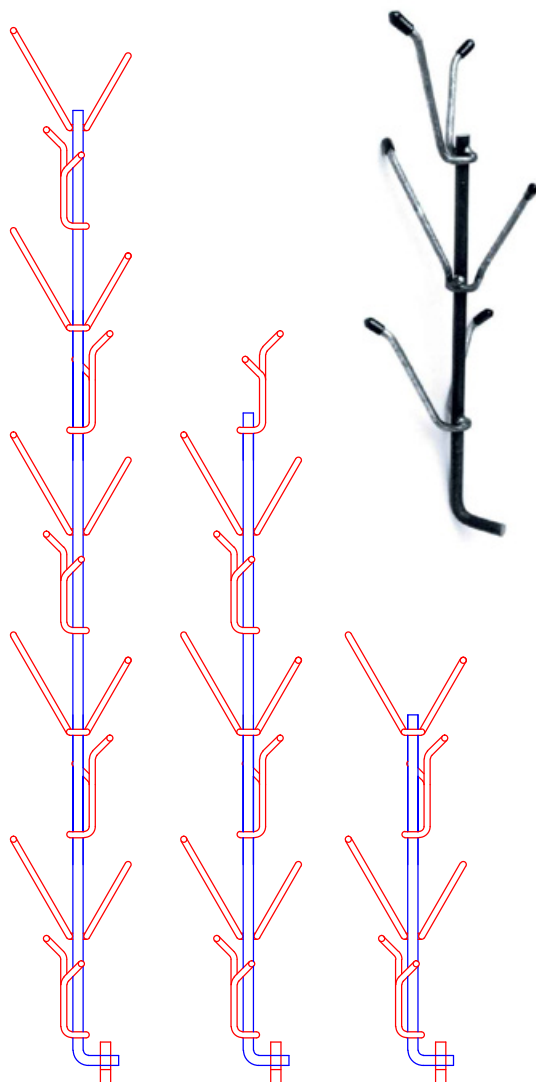
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DATE	REVISION	BY

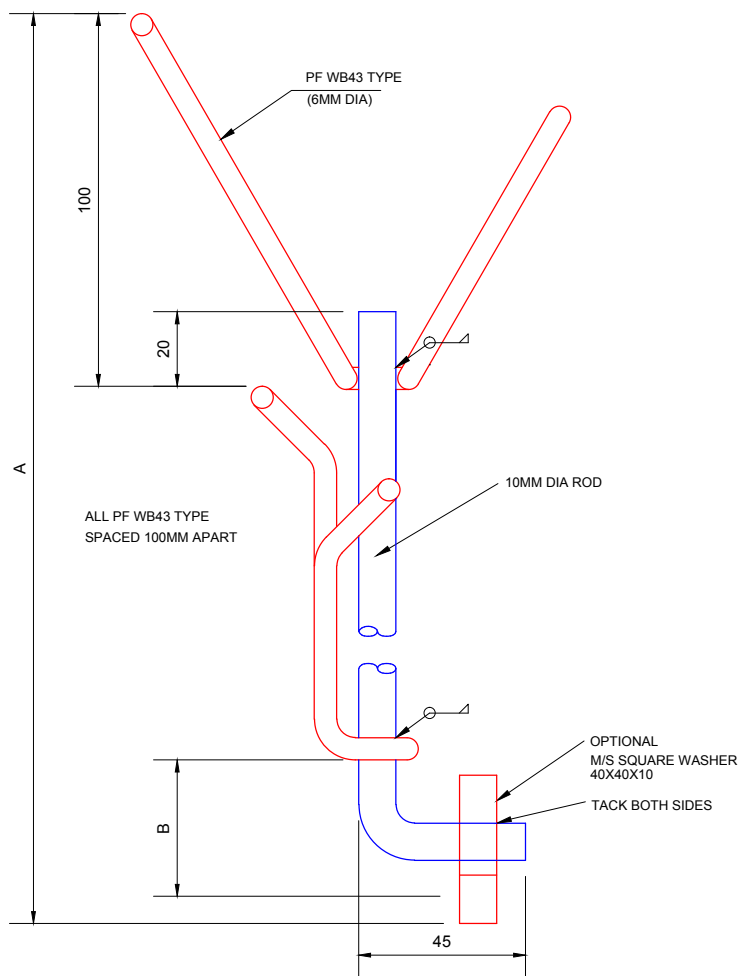
MATERIAL: STAINLESS STEEL

DWG No.  
 PF - R016

DATE  
 31.3.11  
 SIZE  
 N.T.S  
 REV



NOTE: EACH PF WB43 TYPE ANCHOR  
ROTATED 90 DEG ON STEM



COMMONLY KNOWN AS "CHRISTMAS TREE"  
ANCHOR FOR DEEP DAMS

ANC No	A	B	WB-43'S
PF-WNL9	230	30	2
PF-WNL10	250	50	2
PF-WNL11	275	75	2
PF-WNL12	300	100	2
PF-WNL13	330	30	3
PF-WNL14	355	55	3
PF-WNL15	380	80	3
PF-WNL16	400	100	3
PF-WNL17	430	30	4
PF-WNL18	455	55	4
PF-WNL19	480	80	4
PF-WNL20	510	110	4
PF-WNL21	530	130	4

ANC No	A	B	WB43'S
PF-WNL22	560	60	5
PF-WNL23	585	85	5
PF-WNL24	610	110	5
PF-WNL25	635	135	5
PF-WNL26	660	60	6
PF-WNL27	685	85	6
PF-WNL28	710	110	6
PF-WNL29	735	135	6
PF-WNL30	760	60	7
PF-WNL31	785	85	7
PF-WNL32	810	110	7
PF-WNL33	835	135	7

ANC No	A	B	WB43'S
PF-WNL34	860	60	8
PF-WNL35	885	85	8
PF-WNL36	915	115	8
PF-WNL37	940	140	8
PF-WNL38	965	65	9
PF-WNL39	990	90	9
PF-WNL40	1015	115	9
PF-WNL41	1040	140	9
PF-WNL42	1065	65	10
PF-WNL43	1090	90	10
PF-WNL44	1115	115	10
PF-WNL45	1140	140	10



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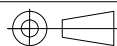
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TITLE  
PF WNL ANCHOR

FILE NAME: PF WNL ANCHOR - PF - R017.DWG



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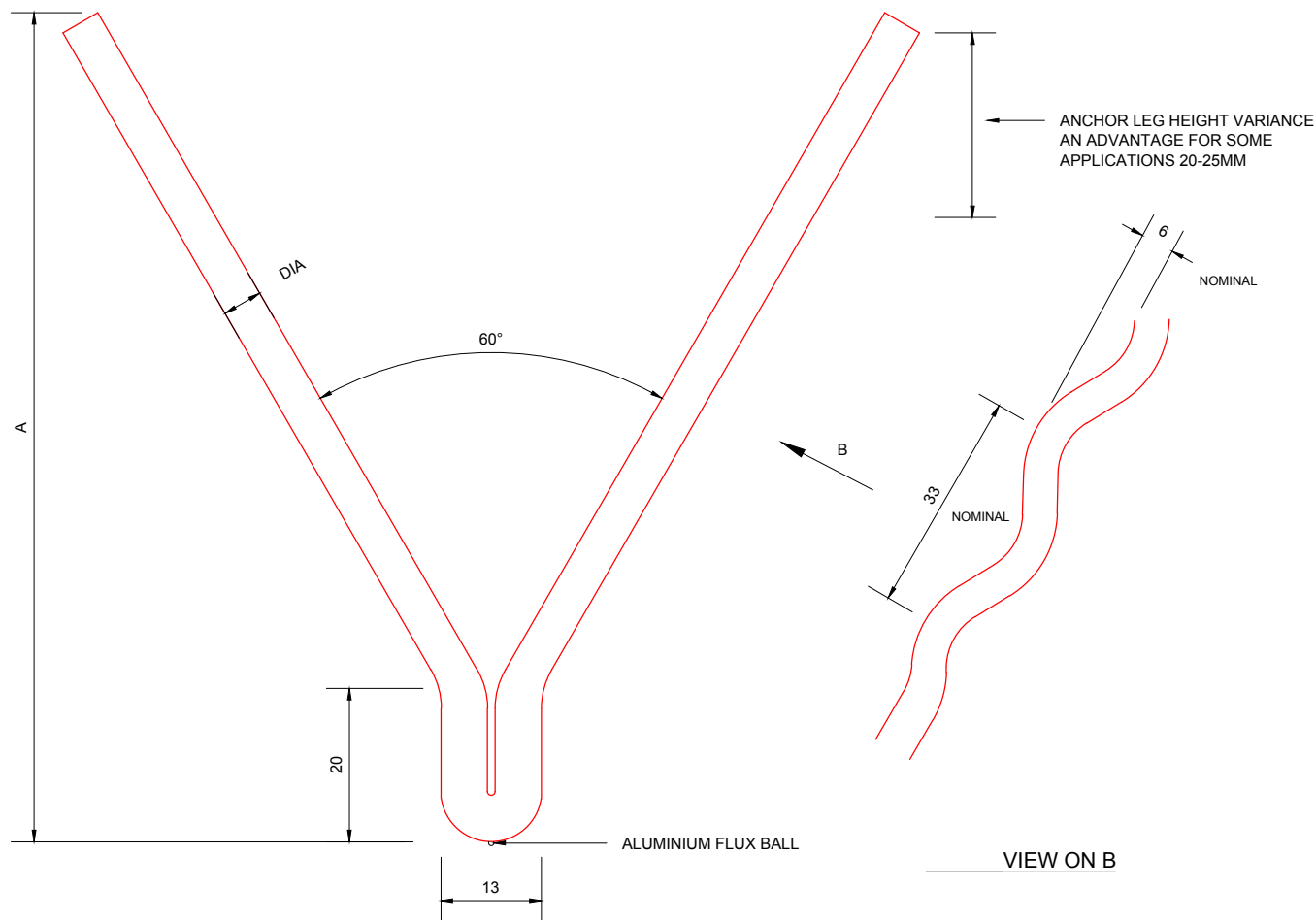
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PF - R017

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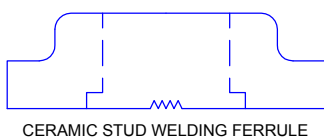
SIZE  
A4

REV



### ELEVATION

N.B: REF FLUX BALL  
SOME ADVISERS INDICATE  
ONLY NECESSARY FOR WIRE  
DIAMETER GREATER THAN 8MM



### OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG, NO CORRUGATION

### COMMON WIRE SIZES CHOSEN

A=15-40MM	DIA=3-5MM
A=15-100MM	DIA=6MM
A=75-200MM	DIA=8MM
A=150-300MM	DIA=10MM



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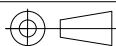
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TITLE  
PF HRC STUD WELD ANCHOR

FILE NAME: PF HRC STUD WELD ANCHOR - PF - R018.DWG



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DATE	REVISION	BY

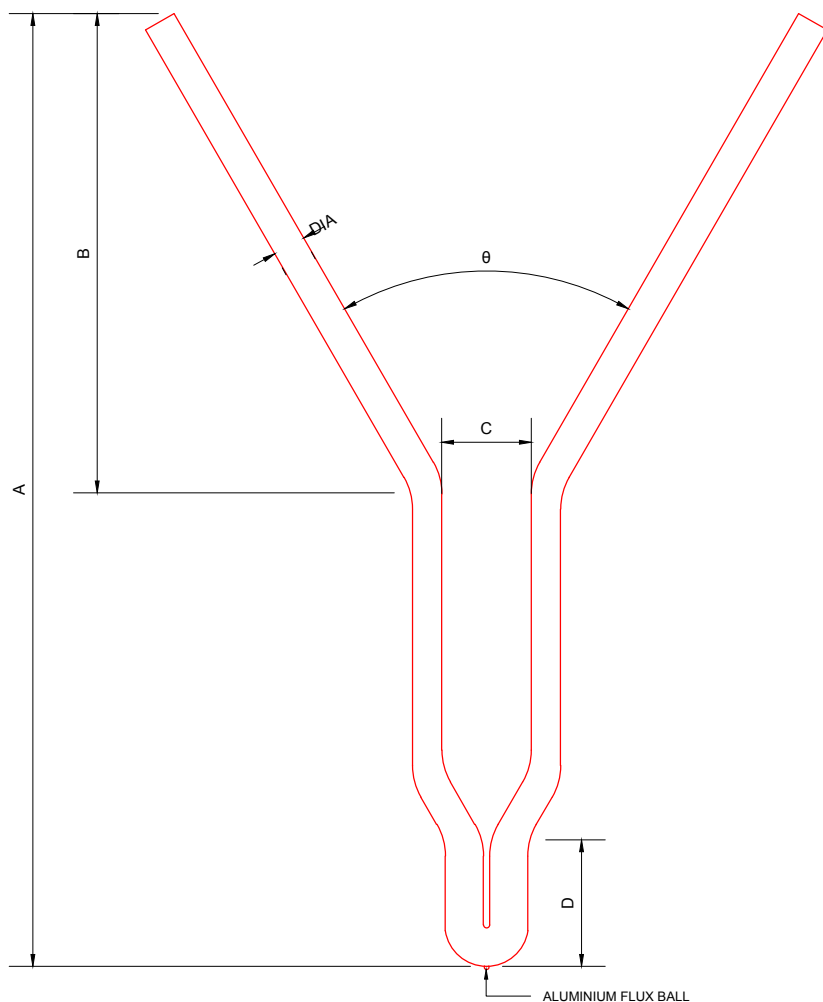
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DWG No.  
PF - R018

DATE  
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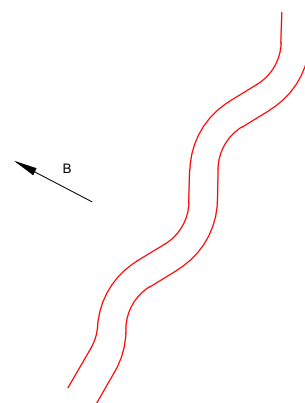
SIZE  
A4

REV



### ELEVATION

N.B: REF FLUX BALL  
SOME ADVISERS INDICATE  
ONLY NECESSARY FOR WIRE  
DIAMETER GREATER THAN 8MM



### VIEW ON B



### BASE DETAIL



CERAMIC STUD WELDING FERRULE

### OPTIONS:

STAGGER LEG HEIGHT  
VARY ANGLE USUALLY 60DEG SOMETIMES 90DEG  
VARY CORRUGATION DEPTH/PITCH  
EXTEND OR CONTRACT BASE  
STRAIGHT LEG, NO CORRUGATION

COMMON WIRE SIZES CHOSEN  
A=15-40MM DIA=3-5MM  
A=15-100MM DIA=6MM  
A=75-200MM DIA=8MM  
A=150-300MM DIA=10MM



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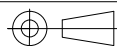
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TITLE  
PF YWS STUD WELD ANCHOR

FILE NAME: PF YWS STUD WELD ANCHOR - PF - R019.DWG



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B.MITCHELL

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N.T.S

PAGE/SHEET

DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R019

DATE  
30.1.12  
SIZE  
A4  
REV

x OVERALL LENGTH OF  
MACHINED BLANK = 125mm

A=8.1 TO SUIT 8MM WIRE  
(PF-SWRLB-43-8)

A=10.1 TO SUIT 10MM WIRE  
(PF-SWRLB-43-10)

STUD MANUFACTURE  
AND INSTALLATION TO  
CONFORM TO AS/NZ  
1554.2:2003

AUSTRALIAN STANDARD  
PATENT NO. 2006225331

INSERT ALUMINIUM  
FLUX BALL GRADE 1100 4.75DIA

MATERIAL: AISI C1020  
(FORGED HEAD)



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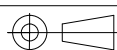
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TITLE  
PF STUD WELDABLE LUG

FILE NAME: LUG 8.7.2008.DWG



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D.BRAMLEY

SCALE  
N.T.S.

PAGE/SHEET

DATE	REVISION	BY
17.09.10	DETAILS OF FLUX BALL ADDED & LENGTH ALTERED	DB
21.09.11	LENGTH ALTERED TO 63MM O/A	DB
4.10.11	BLANK LENGTH NOTATION ADDED	DB
MATERIAL: STEEL		DATE 28.03.11
DWG No. PF - SWRLB - 43 - 8/10 RODLOK LUG		SIZE A4
		REV



## PATENTED SPRING LOCKING CLIP FOR THE ROD LOK REFRACTORY ANCHOR

Pressform has extensive experience in the design and manufacture of Refractory Hardware and is a leader in the field. We understand that providing anchor stability during the refractory concreting process is paramount to a fast, safe, successful and therefore cost effective refractory installation. Our patented Spring Locking Clip design ensures anchor arms will always be vertical, avoiding weakened refractory cement support and hot spots.

### DESIGN FEATURES

Manufactured from thin spring steel, so that when it reaches service temperature the spring temper dissipates and the anchor arms can move with expansion as intended.

- Serrations on the side of lug provide adjustment for the clip
- Length of the lug can be variable allowing use of cross arm inserts
- Note the holes in the clip enable refractory cement ingress
- The round base of stud weldable lug lends itself to manual welding as well as stud welding
- Lugs can be flat if directional strength is not an issue
- Round lugs have the same strength in all directions
- Anchor wires can have a parallel section similar to PFVS anchors for thicker refractory anchoring

### COST

The spring steel clip and serration of the lug - \$2.00

Or receive a reduced price with any order of new anchors and lugs.

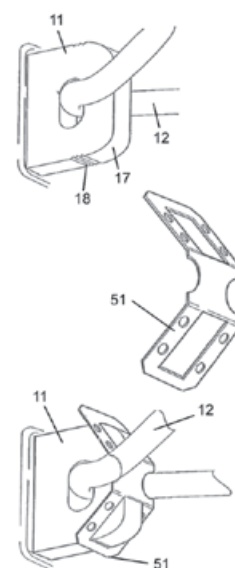
Ask us  
how you can  
install your anchors  
safely, securely and 10  
times faster with the  
revolutionary Pressform  
Stud Welding  
System.



### HOW IT WORKS

These illustrations show how the arms of a Rod Lock Anchor can be locked in the upright position as a fail safe.

11. Steel or stainless steel slotted base
12. 8mm or 10mm diameter wire anchor arm
17. Rounded top edge
18. Clip engaging slots
51. Spring steel locking clip



### ALSO AVAILABLE: THE STUD WELDABLE LUG

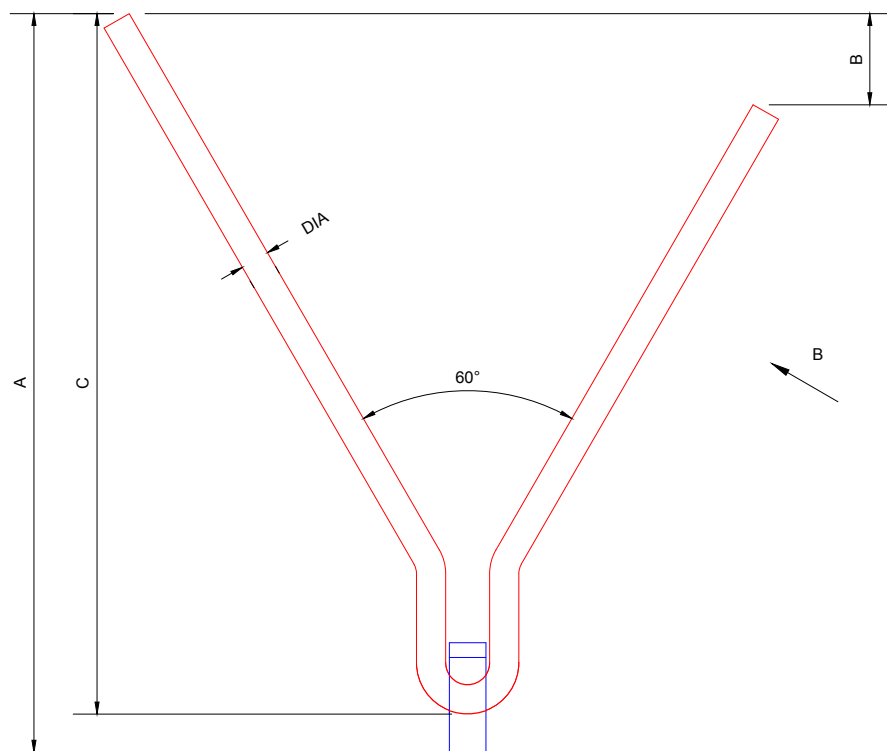
Carbon Steel  
Stainless Steel  
Nickel Alloys



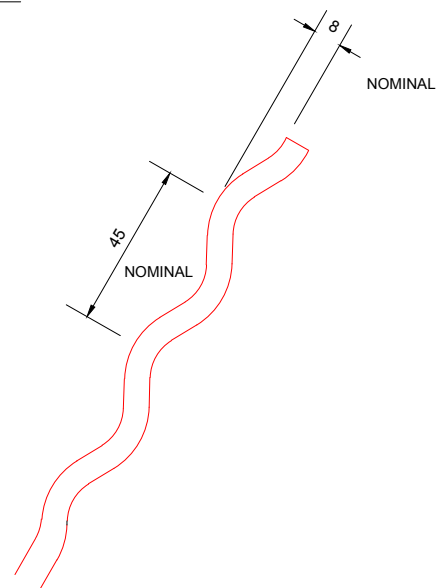
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To order, or to discuss your requirements,  
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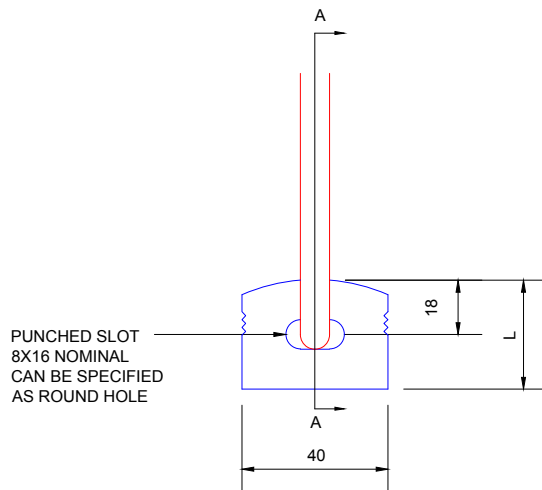




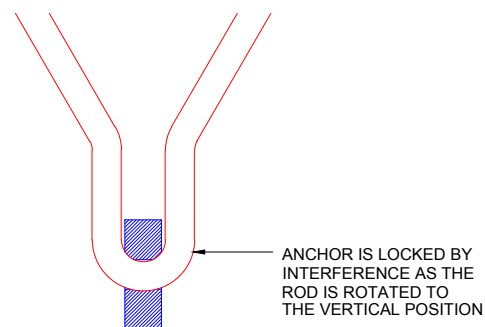
ELEVATION



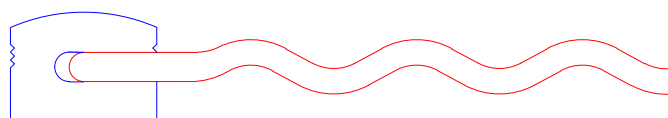
VIEW ON B



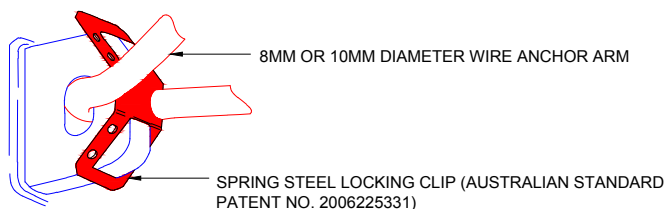
LUG LOCKING DETAIL



SECTION A



CONCEPTUAL VIEW ANCHOR AFTER ASSEMBLY IN HORIZONTAL POSITION  
BEFORE LOCKING UPRIGHT FOR CONCRETE POUR



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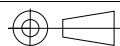
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TITLE  
PF ROD LOK ANCHOR

FILE NAME: PF ROD LOK ANCHOR - PF - R020.DWG



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PAGE/SHEET

DATE	REVISION	BY

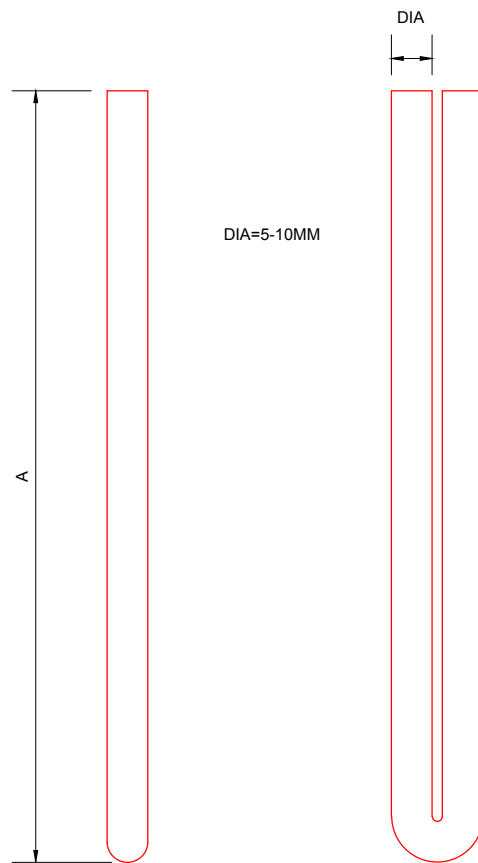
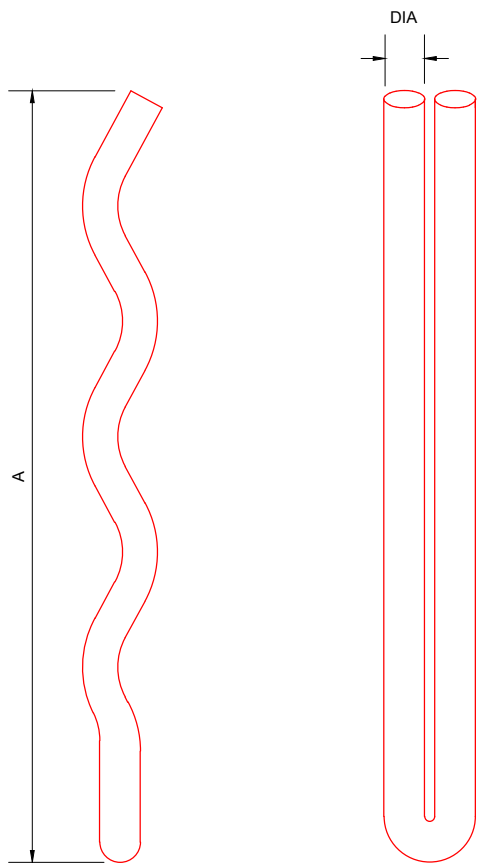
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R020

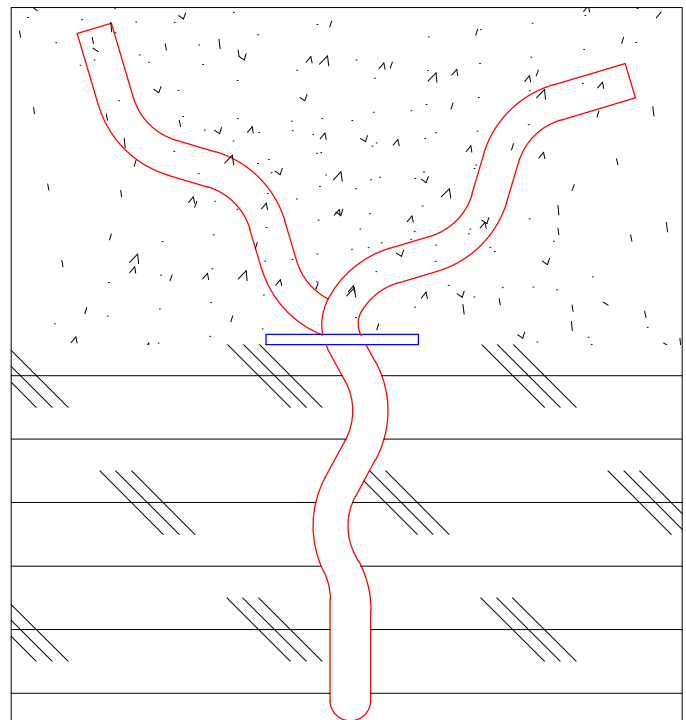
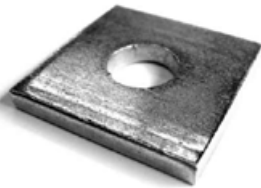
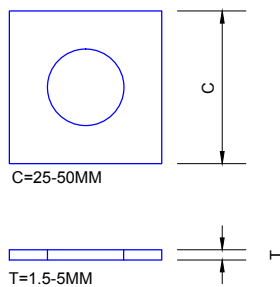
DATE  
31.3.11  
SIZE  
A4  
REV

1

2



BASE CAN BE STUD WELDED.  
IN THE CASE OF WIRE DIAMETERS  
ABOVE 6MM A FLUX BALL IS REQUIRED  
AN APPROPRIATE WELDING FERRULE  
IS REQUIRED IN BOTH CASES



LEGS MAY BE OPENED  
OUT AFTER FIRST LAYER



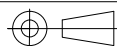
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TITLE  
PF CLOSE PARALLEL LEG

FILE NAME: PF CLOSE PARALLEL LEG - PF - R021.DWG



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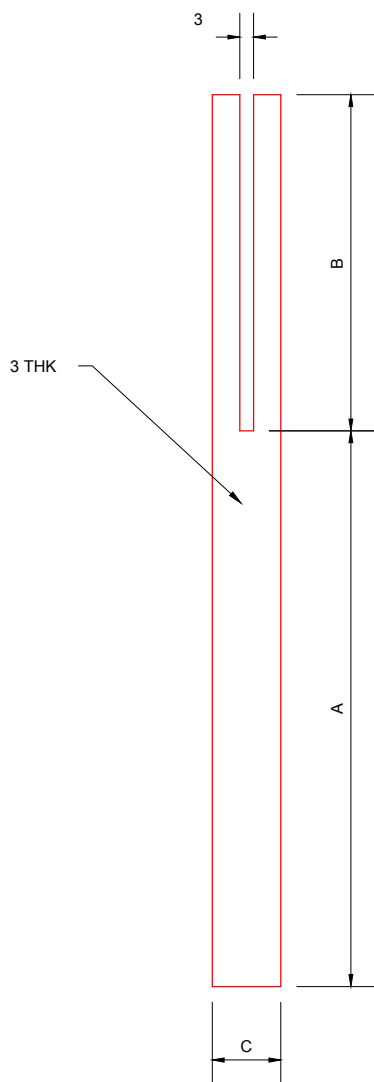
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R021

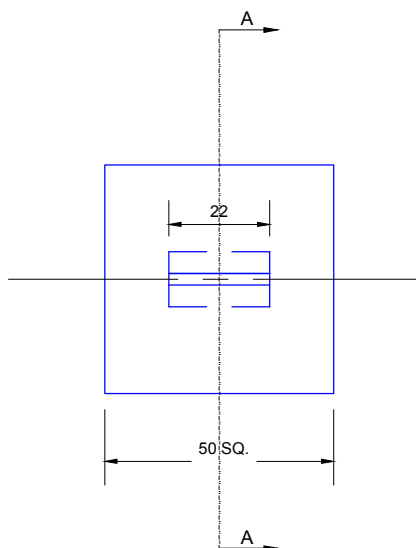
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31.3.11  
SIZE  
A4  
REV

1

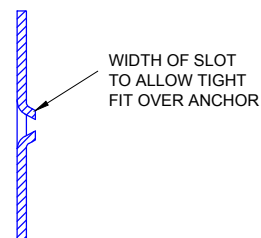
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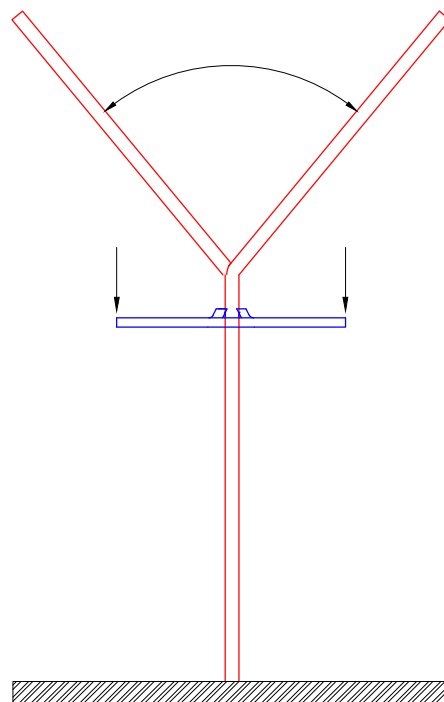
SPLIT FLAT BAR Y-ANCHOR



SPEED WASHER



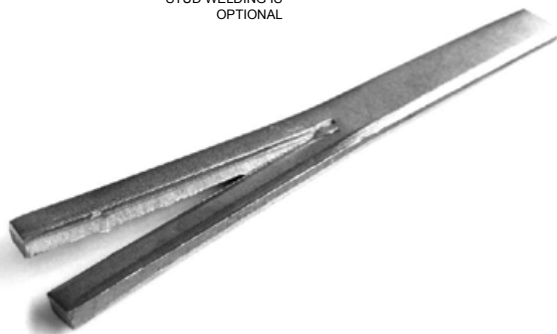
SECTION A



ASSEMBLY DRAWING

SPEED WASHER IS PRESSED OVER THE  
SPLIT ANCHOR TO HOLD REFRACTORY  
IN PLACE. HOLD REFRACTORY IN  
PLACE. UP TO THE DESIRED ANGLE

BASE DETAIL  
CURVED BASE FOR  
STUD WELDING IS  
OPTIONAL



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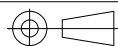
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TITLE  
PF SPLIT FLAT BAR Y-ANCHOR

FILE NAME: PF SPLIT FLAT BAR Y - ANCHOR - PFM-R022.DWG



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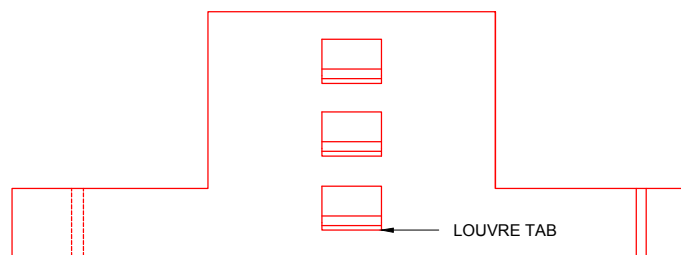
DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

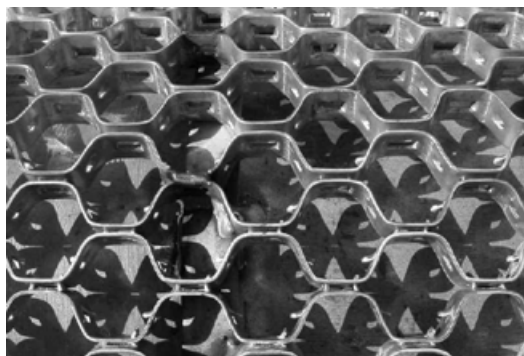
DWG No.  
PF - R022

DATE  
31.3.11  
SIZE  
A4  
REV

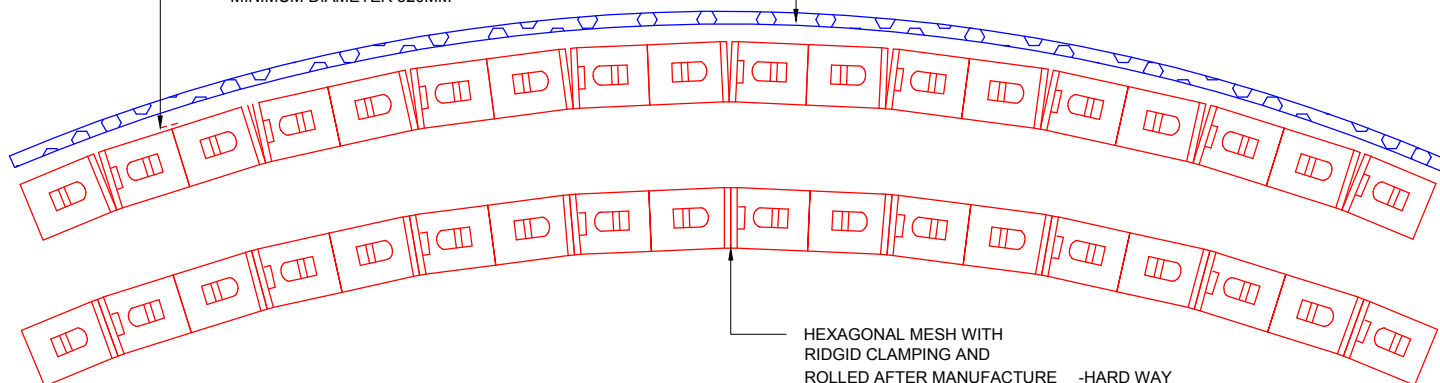
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DATE 31.03.11	
SIZE A4	REV

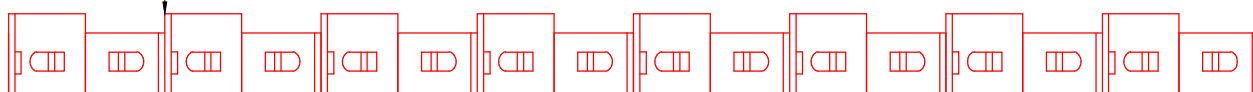
CLAMPING BACK LEAVES ORIFICE  
FOR REFRACTORY BONDING  
BETWEEN HEXAGONAL CELLS

- WELD TO SHELL,  
HEXAGONAL MESH HAS A CONVEX  
SHAPE FOR EASIER INSTALLATION



HEXAGONAL MESH WITH  
RIGID CLAMPING AND  
ROLLED AFTER MANUFACTURE -HARD WAY  
PRESENT CLOSED EDGES OF MESH STRIPS  
FOR REFRACTORY INJECTION / TAMPING

OFFSET MESH WIDTH AVAILABLE  
STANDARD RANGE 19-35MM  
WIDER CAN BE PROVIDED WITH EXTRA TOOLING COST



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FILE NAME: PF HEXAGONAL MESH - PF - R024.DWG

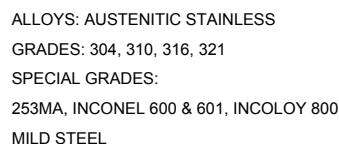


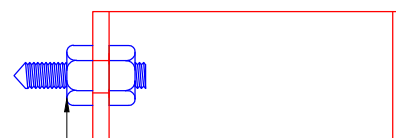
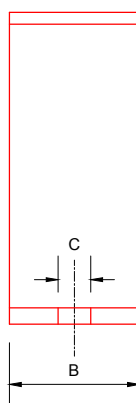
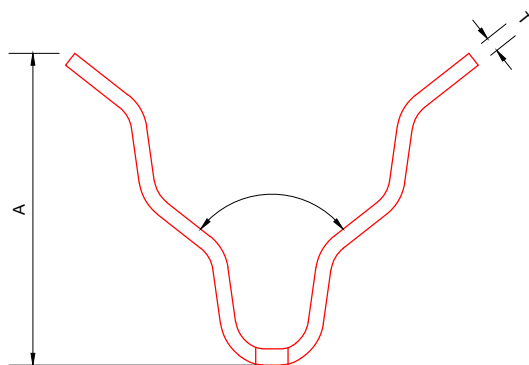
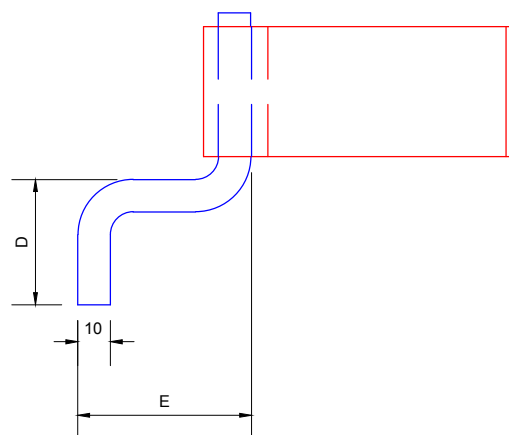
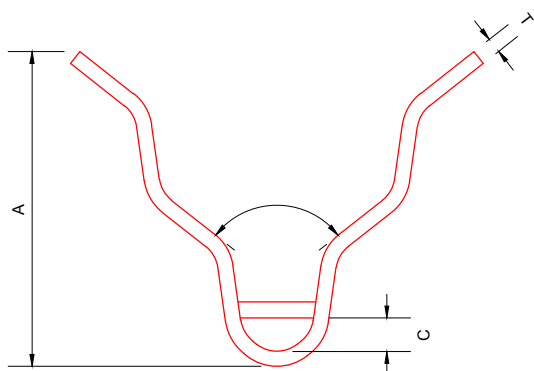
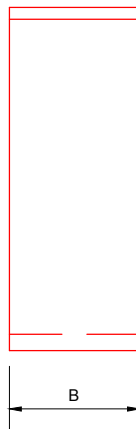
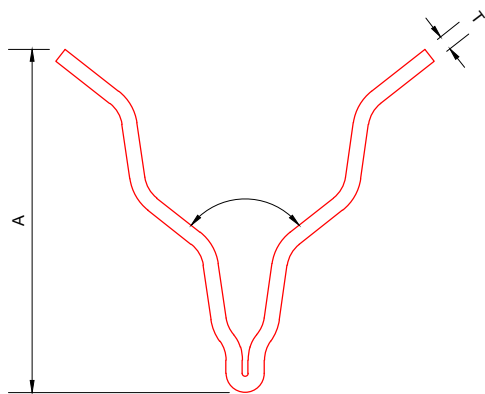
SCALE

DATE	REVISION	BY
MATERIAL: STAINLESS STEEL		DATE 31.03.11
DWG No. PF - R024		SIZE A4

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BANDIED SIDE





M10 X 25 STUD OR BOLT

TYPICAL DIMENSIONS  
B=15-50MM T=4.5-8MM



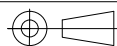
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TITLE  
PF WALL ANCHOR

DATE	REVISION	BY

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FILE NAME: PF WALL ANCHOR - PF - R026.DWG

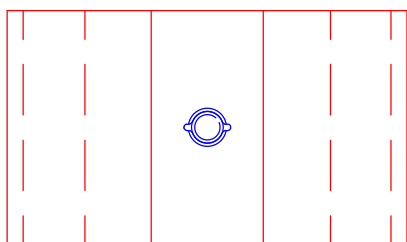
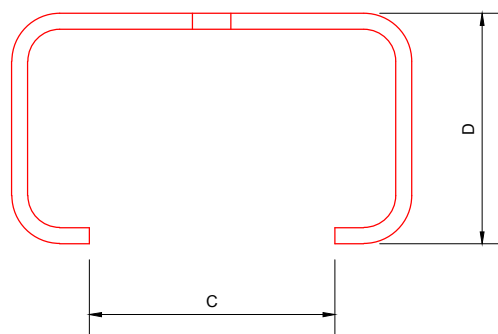
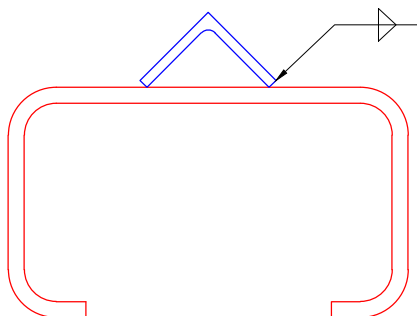
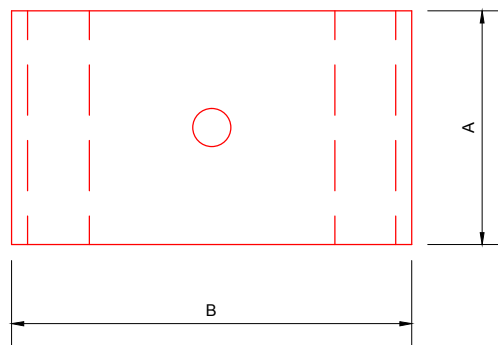
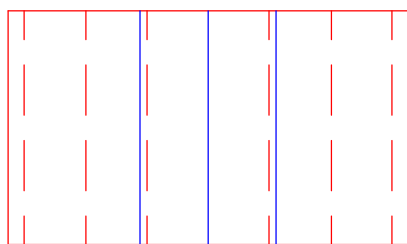


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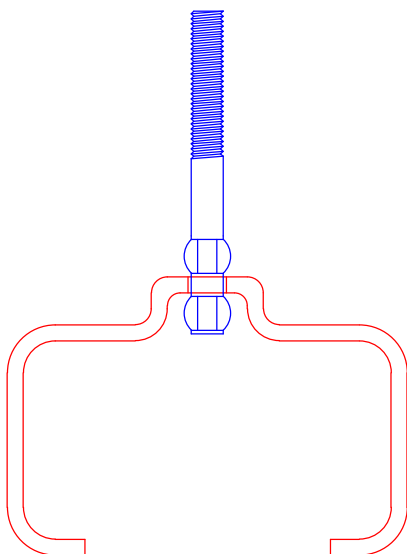
MATERIAL: STAINLESS STEEL

DWG No.  
PF - R026

DATE 31.3.11	REV
SIZE A4	



VARIOUS C-CLIP CONFIGURATIONS



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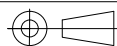
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TITLE  
PF C CLIPS

FILE NAME: PF C CLIPS - PF - R027.DWG



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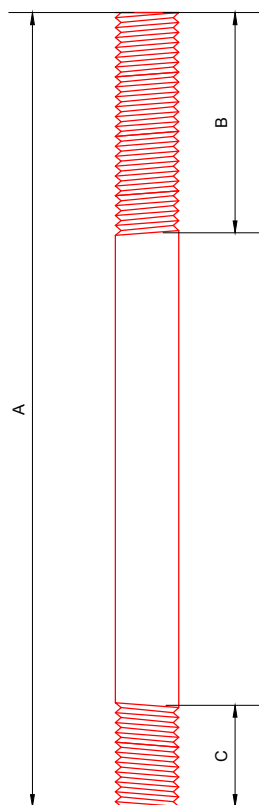
DATE	REVISION	BY

MATERIAL: STAINLESS STEEL

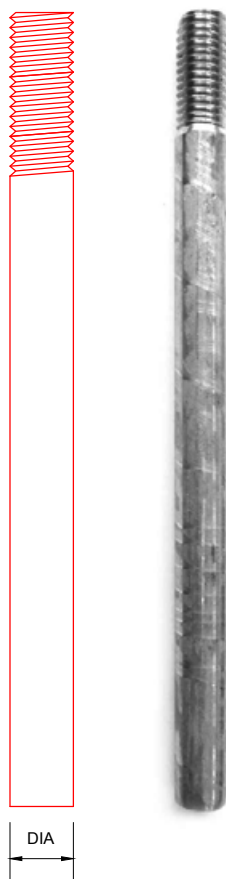
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PF - R027

DATE  
31.3.11  
SIZE  
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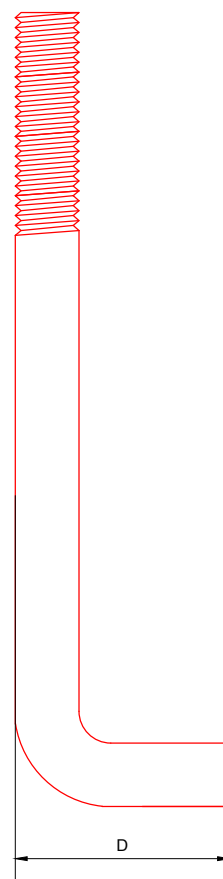




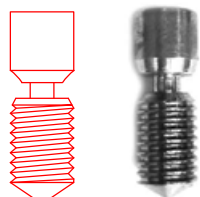
THREADED BOTH ENDS



THREADED ONE END



THREADED ONE END WITH L BASE



KNOCK OFF STUD USED IN APPLICATIONS WHERE STUD LENGTH IS BELOW THE MINIMUM LENGTH FOR STUD WELDING IE LESS THAN 25MM

N.B REF FLUX BALL

SOME ADVISORS INDICATE ONLY NECESSARY FOR WIRE DIAMETER GREATER THAN 8MM



THREADED ONE END WITH STUD WELDING BASE AND ALUMINIUM FLUX BALL



THREADED ONE END WITH STUD WELDING BASE POINTED END AND ALUMINIUM FLUX BALL



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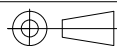
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TITLE  
PF STUDS

FILE NAME: PF STUDS - PF - R028.DWG



DRAWN BY  
B.MITCHELL

SCALE  
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PAGE/SHEET

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R028

DATE  
21.12.11  
SIZE  
A4  
REV

DATE	REVISION	BY

T = THREAD TYPE

A

METRIC DIN STANDARD SIZES  
FOR HEX NUTS

	A	B
<b>M5</b>	8	4
<b>M6</b>	10	5
<b>M8</b>	13	6.5
<b>M10</b>	17	8
<b>M12</b>	19	10
<b>M14</b>	22	11
<b>M16</b>	24	13

B

HEXAGON NUTS

T = THREAD TYPE

A

B

ROUND WASHER NUT

SQUARE WASHER NUT

ROUND NUT

SQUARE NUT

B

A

LONG SERIES HEXNUT/FERRULE  
CAN ALSO BE MANUFACTURED AS ROUND OR SQUARE

T = THREAD TYPE



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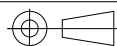
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TITLE  
PF NUTS

FILE NAME: PF NUTS - PF - R029.DWG



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PAGE/SHEET

MATERIAL: STAINLESS STEEL

DWG No.  
PF - R029

SIZE  
A4

REV

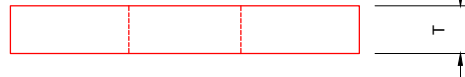
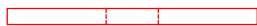
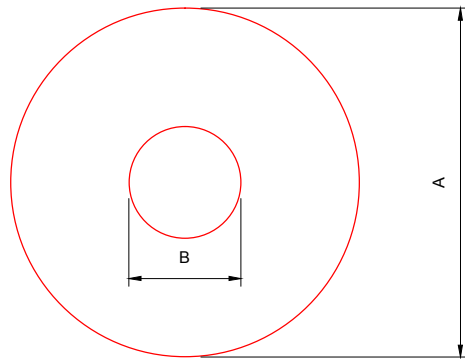
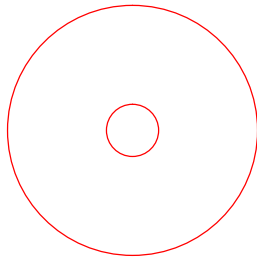
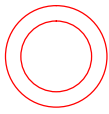
DATE	REVISION	BY

DATE  
22.2.12

1

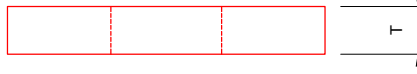
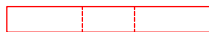
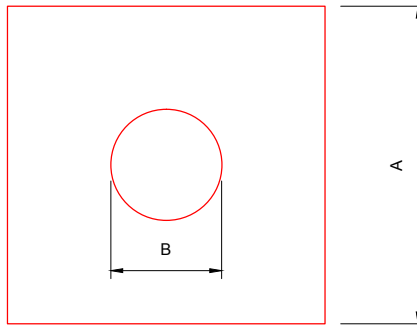
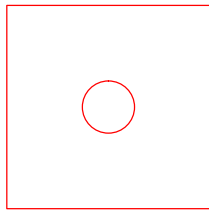
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A



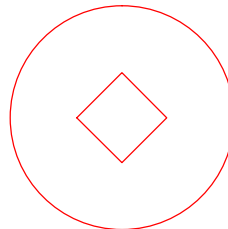
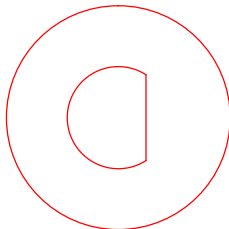
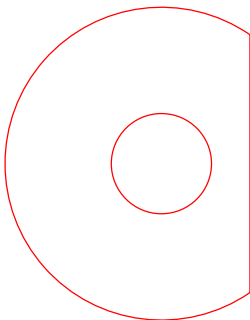
ROUND WASHERS

B



SQUARE WASHERS

C



NON STANDARD WASHERS

COMMON MATERIALS:  
CARBON STEEL  
QUENCHED AND TEMPERED  
GALVABOND  
ZINC PLATED  
GALVANISED  
STAINLESS  
COPPER  
ALUMINIUM  
BRASS

OPTIONAL RUMBLING

D



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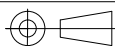
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TITLE  
PF WASHERS

DATE	REVISION	BY

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FILE NAME: PF WASHERS - PF - R030.DWG



DRAWN BY  
B.MITCHELL

SCALE  
N.T.S.

PAGE/SHEET

MATERIAL: STAINLESS STEEL

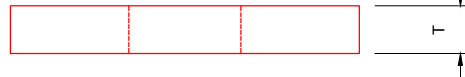
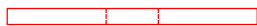
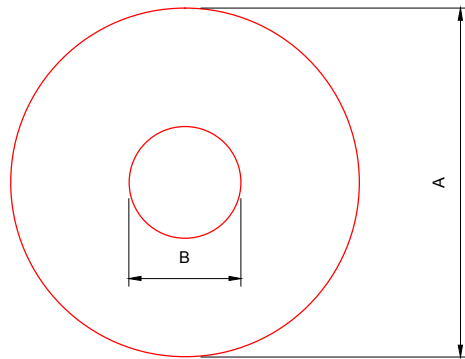
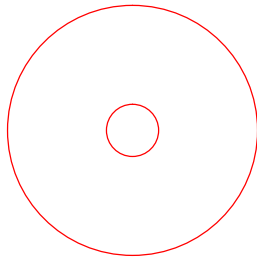
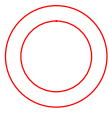
DWG No.  
PF - R030

DATE	REV
22.2.12	

1

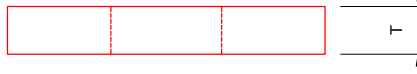
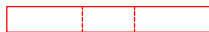
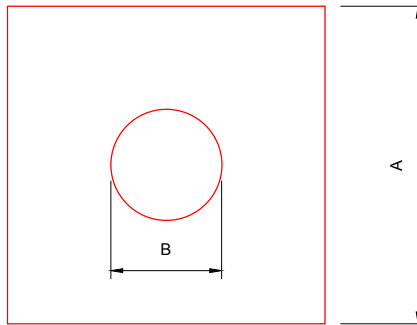
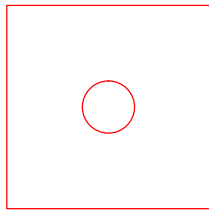
2

A



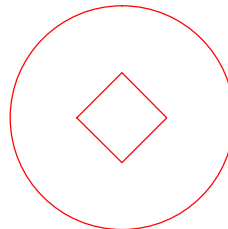
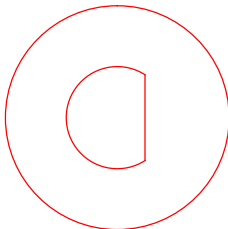
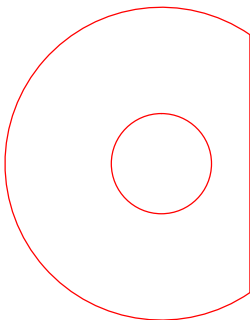
ROUND WASHERS

B



SQUARE WASHERS

C



NON STANDARD WASHERS

COMMON MATERIALS:  
CARBON STEEL  
QUENCHED AND TEMPERED  
GALVABOND  
ZINC PLATED  
GALVANISED  
STAINLESS  
COPPER  
ALUMINIUM  
BRASS

OPTIONAL RUMBLING

D



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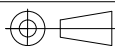
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TITLE  
PF WASHERS

DATE	REVISION	BY

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FILE NAME: PF WASHERS - PF - R030.DWG



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SCALE  
N.T.S.

PAGE/SHEET

MATERIAL: STAINLESS STEEL

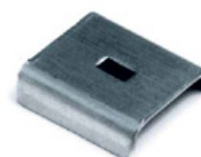
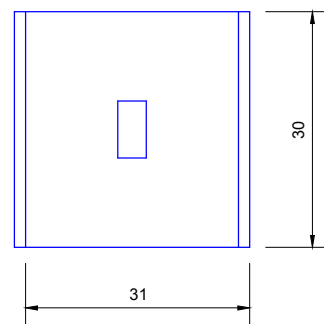
DWG No.  
PF - R030

DATE  
22.2.12  
SIZE  
A4  
REV

Technical drawing of a circular object, likely a cross-section of a mechanical part. The drawing shows several concentric circles. The outermost circle has a diameter dimensioned as 34. Inside this circle, there are three more concentric circles. The innermost circle contains a central cross-like shape with four rectangular protrusions extending outwards. The dimension line at the bottom indicates the diameter of the outermost circle is 34.



PRESSED LOCK WASHER



WIRE 5MM DIA.

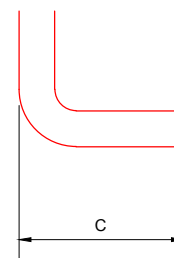
MANUFACTURE

CERAMIC FIBRE BLANKET PIN  
PRESSED FROM FULLY ANNEALED

SOME NICKEL ALLOYS HAVE AN  
"INTERSTAGE ANNEAL" DURING

**NOTE:** IN COMPARISON TO PINS  
PRESSED FROM 6MMX3MM FLAT  
STRIP, PRESS FORM'S FIBRE LOK  
PIN PRESSED FROM 5MM DIAMETER  
WIRE HAS A GREATER CROSS  
SECTIONAL AREA AT THE BASE  
THUS A GREATER RESISTANCE  
TO BENDING

COMMON ALLOYS:  
STAINLESS ALLOYS: 304, 321, 310, 253MA  
NICKEL ALLOYS: INCONEL 601, INCOLOY 800



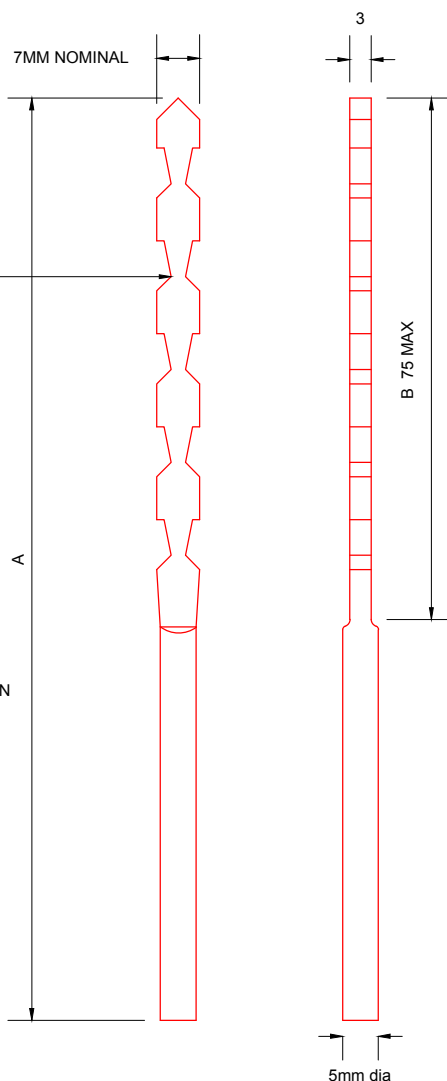
L-BASE SOMETIMES PREFERRED FOR HIGHER STRENGTH WELD ATTACHMENT



CROSS SECTIONAL —  
AREA CALCULATED TO  
EQUAL OR EXCEED  
MINIMUM INDUSTRY  
STANDARD

CAREFULLY CENTRALISED  
SERRATIONS.  
MAXIMUM 75MM

FOR STUD WELDING  
SEE INFORMATION SECTION



CERAMIC WELDING FERRULE



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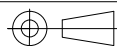
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TITLE  
PF FIBRE LOK ANCHOR

DATE	REVISION	BY

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FILE NAME: PF FIBRE LOK ANCHOR - PF - R031.DWG



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D.BRAMLEY	

SCALE  
N.T.S

PAGE/SHEET

	MATERIAL: STAINLESS STEEL
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T	DWG No. PF - R031
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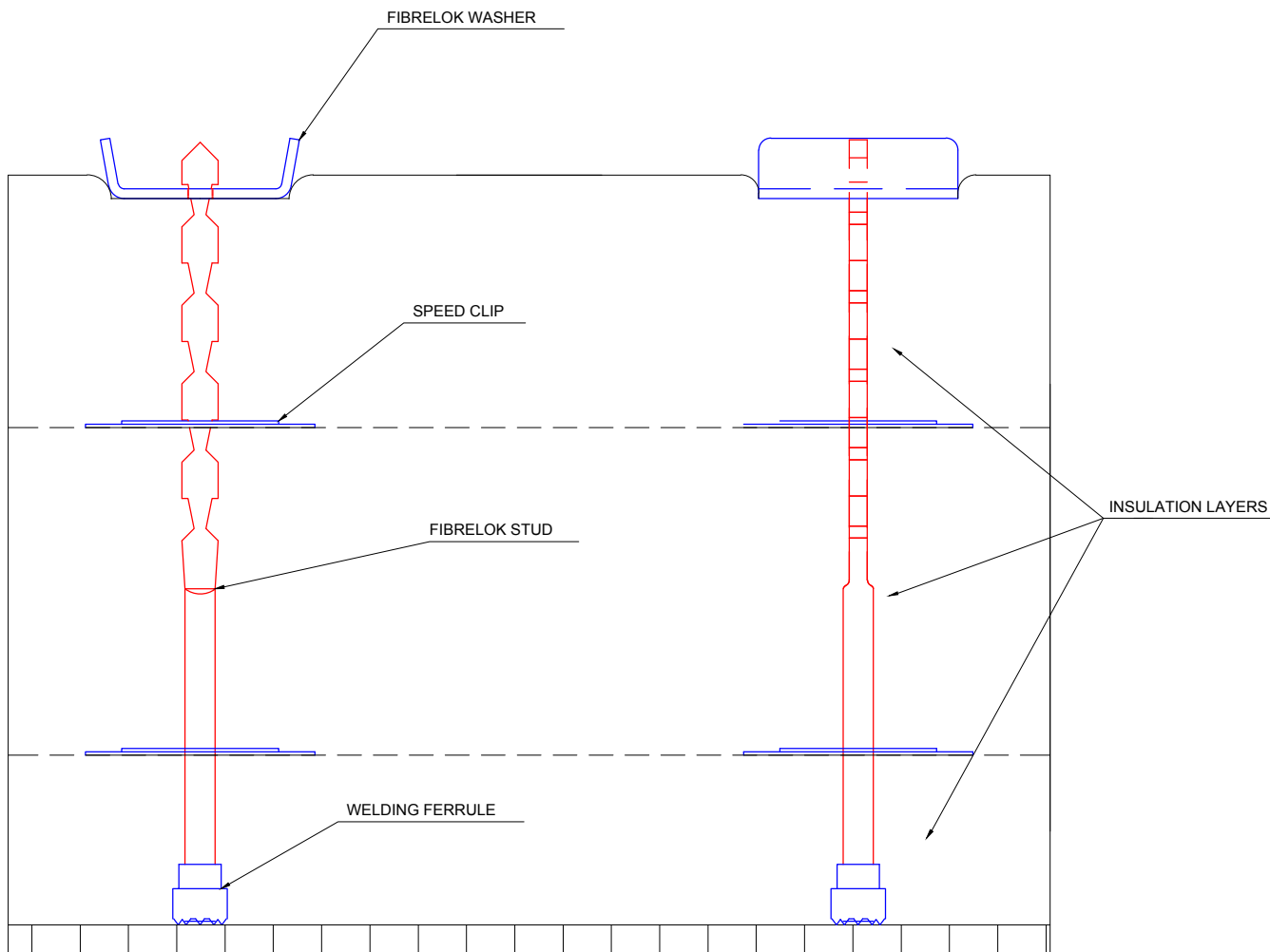
DATE 31.03.11	
SIZE A4	REV

A

B

C

D



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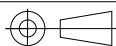
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TITLE  
PF FIBRE LOK ASSEMBLY

FILE NAME: PF FIBRE LOK ASSEMBLY - PF - R032.DWG



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SCALE  
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PAGE/SHEET

DATE	REVISION	BY

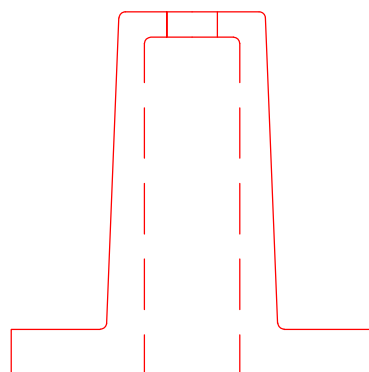
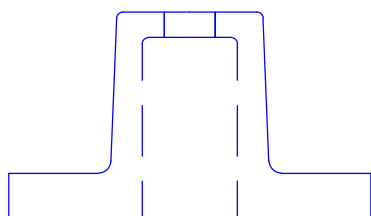
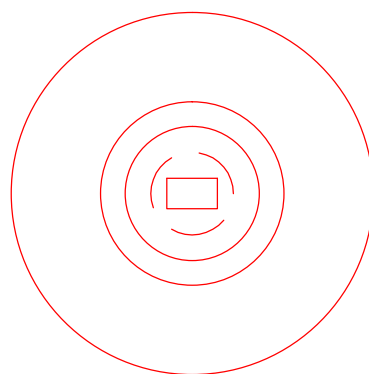
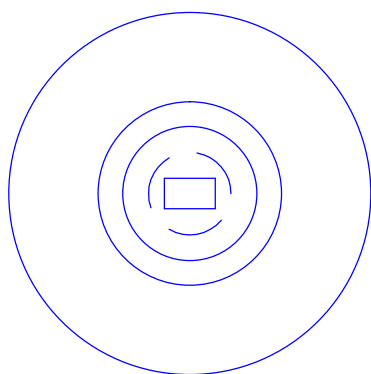
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DWG No.  
PF - R032

DATE  
31.3.11

SIZE  
A4

REV



CERAMIC CUP LOKS SUITABLE FOR USE WITH  
FIBRELOK ANCHORS  
VARIOUS LENGTHS AVAILABLE



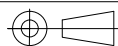
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TITLE  
PF CERAMIC CUP LOKS

FILE NAME: PF CERAMIC CUP LOKS - PF - R033.DWG



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SCALE  
N.T.S.

PAGE/SHEET

DATE	REVISION	BY

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PF - R033

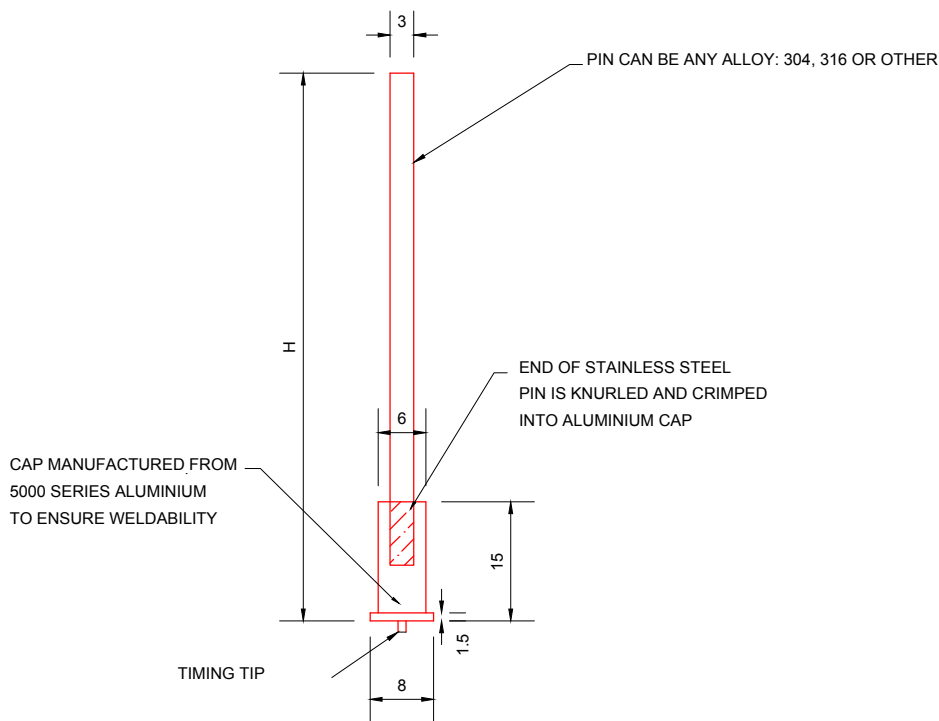
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31.3.11  
SIZE  
A4  
REV

A

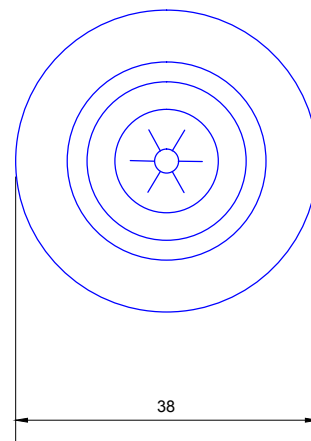
B

C

D



BI METALLIC ANCHOR  
SUITABLE FOR CAPACITOR DISCHARGE WELDING



SPEED CLIP  
SPRING TEMPER STAINLESS  
304 OR 316



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TITLE  
PF BI-METALLIC PIN

FILE NAME: PF - BI-METALLIC PIN - PF - R034.DWG



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D.BRAMLEY

SCALE  
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PAGE/SHEET

DATE	REVISION	BY

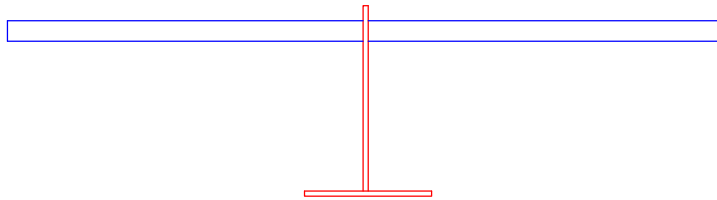
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DWG No.  
PF - R034

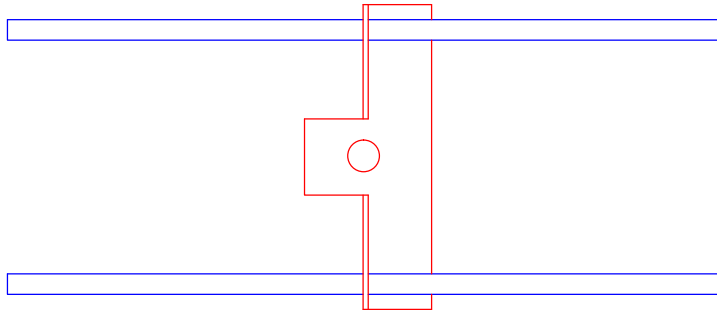
DATE  
31.3.11  
SIZE  
A4  
REV



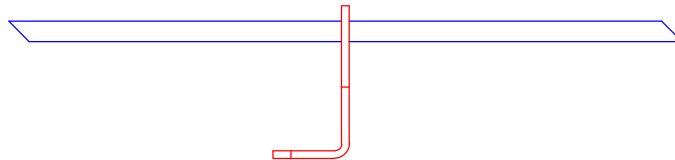
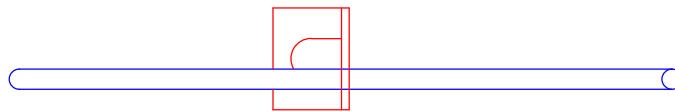
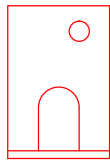
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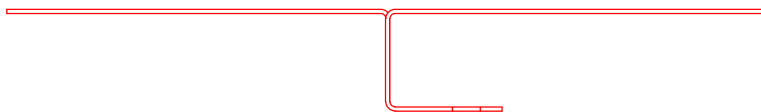
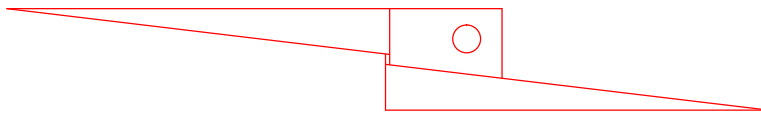
B



C



D



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TITLE  
PF BLOCK ANCHORS

FILE NAME: PF BLOCK ANCHORS - PF - R035.DWG



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PAGE/SHEET

DATE	REVISION	BY

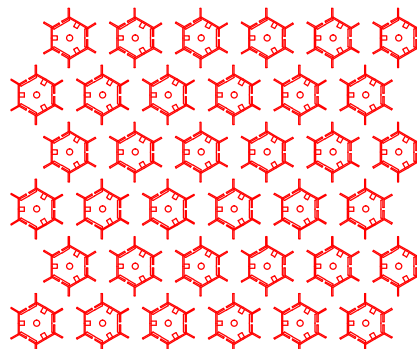
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DWG No.  
PF - R035

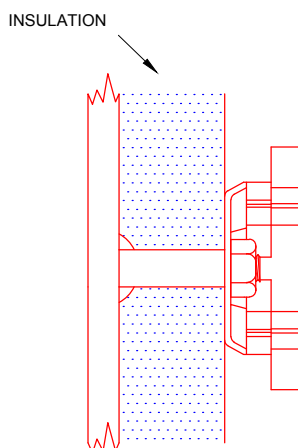
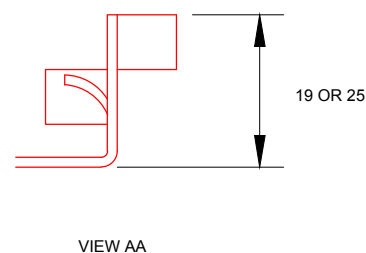
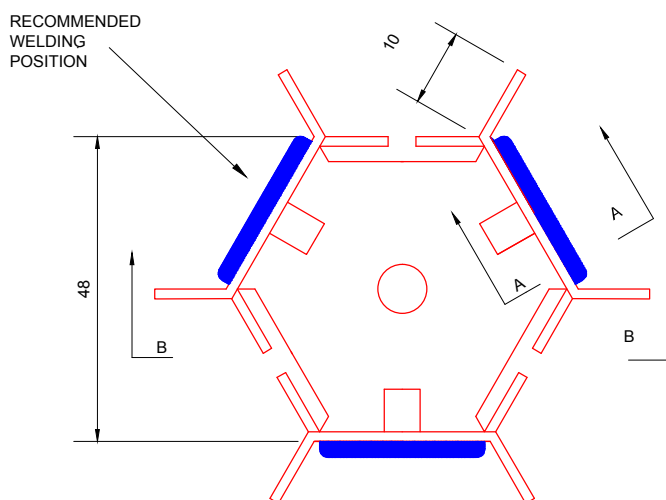
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SIZE  
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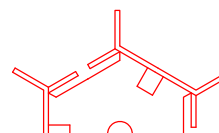
REV



(TYPICAL SPACING 90MM CENTRES  
APPROXIMATELY 143 PER SQUARE METRE)



MANUFACTURED IN 1.6 OR 2.0 MM  
STAINLESS STEEL IN GRADES 304, 310,  
INCONEL 601, 253MA OR 3CR12,  
CENTER HOLE SIZE CAN BE VARIED  
FOR HIGH CARBON BUILD UP AREAS



AVAILABLE ON REQUEST

NUT CAN BE TACK WELDED TO  
HEXAGONAL CELL (BOTTOM OR TOP  
MOUNTED)



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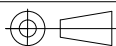
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TITLE  
PF HEXAGONAL CELL

DATE	REVISION	BY

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FILE NAME: PF HEXAGONAL CELL - PF - R036.DWG



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D.BRAMLEY

SCALE  
N.T.S

PAGE/SHEET

	MATERIAL: STAINLESS STEEL
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T	DWG No. PF - R036
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DATE 31/3/11	
SIZE A4	REV