

## BB BAR SYSTEM

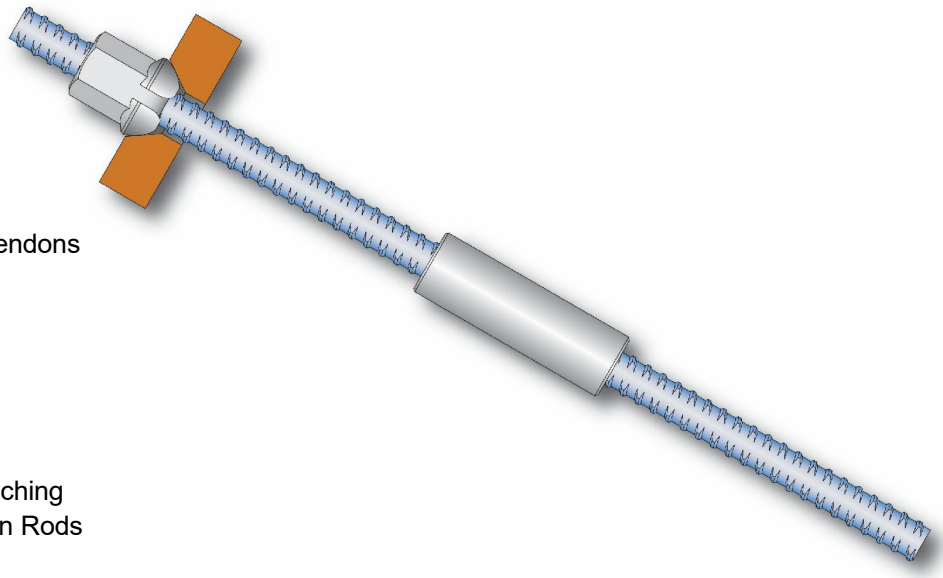
Conforming to ASTM A722 and AS/NZS 4672 and all other major international standards. Produced under quality control systems ISO9001: 2015.

Robust hot rolled continuous thread profile offers high bond strength, can be cut and coupled at any point, low susceptibility to mechanical damage, easy installation and cleaning.

Supported with a wide range of proprietary accessories to accommodate multiple application. Tailor made solutions can also be designed on a case-by-case basis.

Corrosion protection systems for geotechnical application in accordance with BS8081, DIN EN 1537: 2014 or other international standards can be provided.

Value added services including rental of stressing equipment for installation, preparation of method statements for handling, assembly and installation etc. Provision of qualified staff to supervise installation works.



## APPLICATIONS

- Post-Tensioning Bar Tendons
- Form Ties
- Mini and Micro Piles
- Ground Anchors
- Soil Nails
- Rock Bolts
- Tie Rods
- Heavy Lifting and Launching
- Hanger and Suspension Rods

## BB BAR PROPERTIES

Steel Grade*	N/mm <sup>2</sup>	830/1030	885/1080	930/1080				
Nominal Bar Diameter D1	mm	15	20	26.5	32	36	40	50
Article No. 640 00 ___ 3000	-	400	401	462	463	464	465	466
Nominal Sectional Area	mm <sup>2</sup>	177	314	551	804	1019	1257	1963
Nominal Weight	kg/m	1.40	2.56	4.48	6.53	8.27	10.21	15.40
Bar Diameter D2	mm	14.4	19.5	25.8	31.2	34.9	38.7	48.2
Over Thread Diameter D0	mm	16.7	23.0	30.9	37.0	41.0	45.4	54.2
Pitch, right-hand Thread	mm	10	10	13	16	18	20	20
Ultimate Load	kN	182	339	595	868	1101	1358	2120
Yield Load	kN	147	278	512	748	948	1169	1826
Cold Bending Radius Rmin	m	3.1	4	5.4	6.4	7.1	7.8	9.4
Max. Distance betw . supports	m	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Wobble Coefficient β	°/m	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Friction Coefficient μ	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Slip at Nuts	mm	1.5	1.5	1	1	1	1	1
Slip at Couplers	mm	1.5	1.5	1	1	1	1	1
Protr. at Stressing End**	mm	40	65	75	90	100	120	145
Protr. at Coupling End**	mm	80	95	110	135	145	160	195

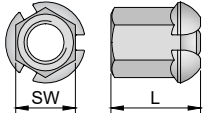
\* Yield Strength at 0.2% Offset (R<sub>e</sub>) / Ultimate Tensile Strength (R<sub>m</sub>)

\*\* Minimum bar protrusion for stressing with stressing coupler and maximum stressing force 0.9 of bar yield load

## SPHERICAL ANCHORAGE ACCESSORIES

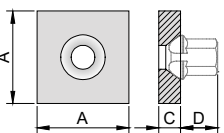
System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

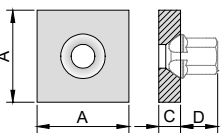
### NUTS

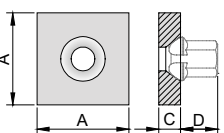
Spherical Nut - w/ Slots		Article No. 475 ___ 3000		31 462	31 423	01 424	01 465
	L	mm		75	100	100	125
	SW	mm		46	65	65	70
	Unit Weight	kg		0.71	2.22	2.07	2.88

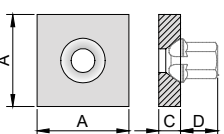
Spherical Nut - Plain 55°		Article No. 475 ___ 3000		30 462	30 423	00 424	00 465	50 466
	L	mm		75	100	100	125	145
	SW	mm		46	65	65	70	85
	Unit Weight	kg		0.76	2.39	2.21	3.04	5.10

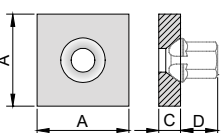
### PLATES

Anchor Plate 55° fci 30		Article No. 022 ___ 3050		75 462	75 463	75 464	75 465	75 466
	A	mm		130	155	175	195	240
	C	mm		30	35	40	45	55
	D**	mm		62	79	77	101	119
	Unit Weight	kg		3.59	5.68	8.51	12.02	22.72

Anchor Plate 55° fci 35		Article No. 022 ___ 3060		75 462	75 463	75 464	75 465	75 466
	A	mm		120	140	160	180	220
	C	mm		30	35	40	45	50
	D**	mm		62	79	77	101	119
	Unit Weight	kg		3.00	4.47	6.93	10.03	16.98

Anchor Plate 55° fci 40		Article No. 022 ___ 3070		75 462	75 463	75 464	75 465	75 466
	A	mm		110	135	150	170	210
	C	mm		30	35	40	45	50
	D**	mm		62	79	77	101	119
	Unit Weight	kg		2.46	4.09	5.95	8.80	15.29

Anchor Plate 55° fci 45		Article No. 022 ___ 3080		75 462	75 463	75 464	75 465	75 466
	A	mm		106	130	145	160	200
	C	mm		30	35	40	45	50
	D**	mm		62	79	77	101	119
	Unit Weight	kg		2.26	3.72	5.49	7.63	13.68


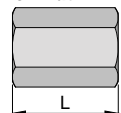
Anchor Plate 55° fci 50		Article No. 022 ___ 3090		75 462	75 463	75 464	75 465	75 466
	A	mm		102	125	140	155	190
	C	mm		30	35	40	45	50
	D**	mm		62	79	77	101	119
	Unit Weight	kg		2.06	3.37	5.05	7.07	12.15

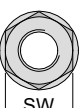
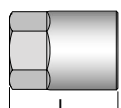
1. Other accessories also available upon special arrangement
  2. Other accessories for 15 and 20mm, please refer to our Form Tie System brochure
  3. Anchor plate size based on stressing force of  $0.75 R_m$  and minimum fci
  4. fci (N/mm<sup>2</sup>) - is the minimum concrete cylinder strength at the time of stressing or load transfer
- \*\* Approximate Protrusion of Nut from Plate

## FLAT ANCHORAGE ACCESSORIES

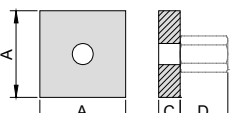
System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

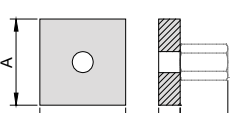
### NUTS

Full Force Hex Nut		Article No. 476 ___ 3000	00 400	00 401	00 462	00 463	01 464	00 465	02 466	
		L	mm	50	65	80	90	100	120	145
		SW	mm	32	38	50	60	65	70	90
		Unit Weight	kg	0.26	0.45	0.92	1.50	1.91	2.60	5.52

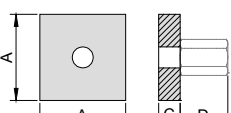
Hex Nut - Partial Hex		Article No. 476 ___ 3000							00 466	
		L	mm							145
		SW	mm							90
		Unit Weight	kg							6.75

### PLATES

Anchor Plate fci 30		Article No. 021 ___ 3050	75 400	75 401	75 462	75 463	75 464	75 465	75 466	
		A	mm	75	100	130	155	175	195	240
		C	mm	15	25	30	35	40	45	55
		D	mm	50	65	80	90	100	120	145
		Unit Weight	kg	0.63	1.87	3.77	6.26	9.14	12.74	23.73

Anchor Plate fci 35		Article No. 021 ___ 3060	75 400	75 401	75 462	75 463	75 464	75 465	75 466	
		A	mm	70	90	120	140	160	180	220
		C	mm	15	20	30	35	40	45	50
		D	mm	50	65	80	90	100	120	145
		Unit Weight	kg	0.54	1.19	3.18	5.04	7.56	10.75	17.96

Anchor Plate fci 40		Article No. 021 ___ 3070	75 400	75 401	75 462	75 463	75 464	75 465	75 466	
		A	mm	65	85	110	135	150	170	210
		C	mm	15	20	25	30	35	40	50
		D	mm	50	65	80	90	100	120	145
		Unit Weight	kg	0.46	1.06	2.20	4.00	5.76	8.46	16.27

Anchor Plate fci 45		Article No. 021 ___ 3080	75 400	75 401	75 462	75 463	75 464	75 465	75 466	
		A	mm	60	80	106	130	145	160	200
		C	mm	15	20	25	30	35	40	50
		D	mm	50	65	80	90	100	120	145
		Unit Weight	kg	0.39	0.93	2.03	3.68	5.36	7.42	14.66

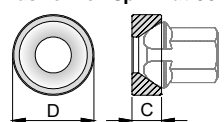
Anchor Plate fci 50		Article No. 021 ___ 3090	75 400	75 401	75 462	75 463	75 464	75 465	75 466	
		A	mm	57	75	102	125	140	155	190
		C	mm	15	20	25	30	35	40	45
		D	mm	50	65	80	90	100	120	145
		Unit Weight	kg	0.35	0.81	1.86	3.38	4.97	6.93	11.82

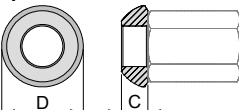
1. Other accessories also available upon special arrangement
2. Other accessories for 15 and 20mm, please refer to our Form Tie System brochure
3. Anchor plate size based on stressing force of  $0.75 R_m$  and minimum fci
4. fci (N/mm<sup>2</sup>) - is the minimum concrete cylinder strength at the time of stressing or load transfer

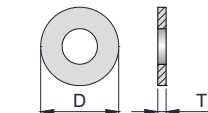
## WASHERS

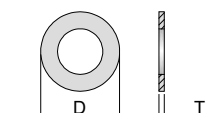
System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

### WASHERS

Washer for Sph. Nut 55°	Article No. 463 ___ 3000		00 462	32 423	00 424	00 465	50 466
	D	mm	85	110	110	125	140
	C	mm	25	40	40	40	40
	Unit Weight	kg	0.77	1.86	1.86	2.53	3.08

Spherical Washer	Article No. 462 ___ 3000		00 462	32 423	00 424	00 465	00 466
	D	mm	62	90	90	95	110
	C	mm	20	36	36	35	37
	Unit Weight	kg	0.25	1.05	0.97	1.03	1.41

Flat Washer	Article No. 461 ___ 3000		00 462	00 463	00 464	00 465	00 466
	D	mm	65	80	90	95	105
	T	mm	10	10	10	12	10
	Unit Weight	kg	0.19	0.30	0.39	0.50	0.47

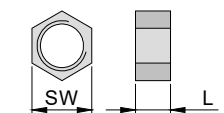
Flat Washer	Article No. 461 ___ 3000		22 462	22 463	22 464	22 465	22 466
	D	mm	60	70	75	80	100
	T	mm	5	5	5	5	5
	Unit Weight	kg	0.08	0.11	0.12	0.13	0.21

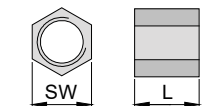
1. Washer for Spherical Nut is use to transfer load from spherical nut to flat steel plate.
2. Spherical Washer and Flat Washer are used w ith Full Force Hex Nut.

## LOCK NUTS

System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

### NUTS

Lock Nut**	Article No.477 ___ 3000		01 422	02 423	02 424	01 465	01 466
	L	mm	30	30	30	35	35
	SW	mm	45	51	51	68	80
	Unit Weight	kg	0.25	0.30	0.25	0.69	0.94

Lock Nut Big**	Article No.477 ___ 3000	22 400	22 401	22 462	22 463	22 424	22 465	22 466
	L	mm	30	40	45	60	70	85
	SW	mm	27	34	45	55	60	80
	Unit Weight	kg	0.10	0.19	0.38	0.77	0.98	1.20

\*\* Lock nut or counter nut are used to engage the threads only and should not be use to transfer structural loads.  
Use Lock Nut Big or Full Force Hex Nuts w hen using hydraulic torque w rench.

## COUPLERS

System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

### COUPLERS

Straight Round Coupler		Article No. 526 ___ 3000	00 400	00 401	00 462	00 423	00 424	00 465	00 466
	L	mm	90	110	160	200	220	250	290
	D	mm	30	40	50	65	70	75	90
	Unit Weight	kg	0.34	0.75	1.59	3.62	4.53	5.77	9.64

Slim Coupler*		Article No. 531 ___ 3000			00 462	00 463	00 424	00 465	00 466
	L	mm			110	150	180	200	220
	D	mm			45	55	60	65	80
	Unit Weight	kg			0.77	1.64	2.26	2.89	5.01

Coupler w/ Set Screws		Article No. 526 ___ 3000					02 424		
	L	mm					220		
	SW	mm					70		
	Unit Weight	kg					4.52		

1. Same accessories for both bar steel grades 835/1030 and 930/1080
  2. Other accessories for 15 and 20mm, please refer to our Form Tie System brochure
  3. For full tension-compression coupling, use Full Force Hex Nuts on boths ends
- \* For predominantly static load only

## DUCTS / SHEATHING

System Grade	830/1030	885/1080	930/1080				
Bar Diameter	15	20	26.5	32	36	40	50

Corrugated Metal Duct 1		Article No. ___							
	D1	mm	25	30	35	40	45	50	60
	D2	mm	31	36	41	46	51	56	67
	T	mm	0.27	0.27	0.27	0.27	0.27	0.27	0.27
	Unit Weight	kg	0.261	0.309	0.358	0.407	0.456	0.505	0.604

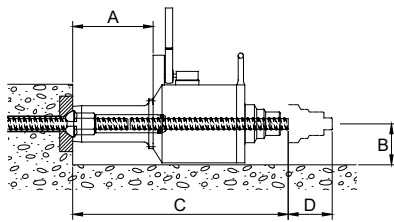
Corrugated Metal Duct 2		Article No. ___							
	D1	mm	30	35	40	45	50	55	65
	D2	mm	36	41	46	51	56	61	72
	T	mm	0.27	0.27	0.27	0.27	0.27	0.27	0.27
	Unit Weight	kg	0.309	0.358	0.407	0.456	0.505	0.555	0.654

Corrugated PE Sheathing		Article No. ___							
	Size	mm	30	30	50	50	50	80	80
	D1	mm	30	30	50	50	50	80	80
	D2	mm	40	40	64	64	64	102	102
	T	mm	1.4	1.4	1.4	1.4	1.4	1.90	1.90
	Unit Weight	kg	0.23	0.23	0.36	0.36	0.36	0.80	0.80

Duct 1 is the minimum duct size while Duct 2 is the recommended duct size.

## STRESSING EQUIPMENT & ACCESSORIES

### Stressing Jack



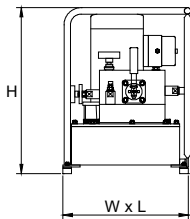
Capacity	kN	1100	1700 CFK
A	mm	275	300**
B	mm	140	140
C	mm	~ 770	~ 977**
D	mm	50*/150	250
Weight	kg	54	49.7***

\* max. 50mm nut travel w ithout tightening. Nut must be tightened continuously during stressing.

\*\* varies depending on the application

\*\*\* jack body only

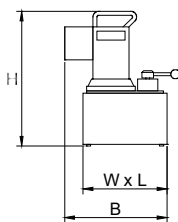
### Hydraulic Pump



Capacity	l/min	0.65 / 2.1
W	mm	380
L	mm	460
H	mm	600
Weight*	kg	36

\*w eight w ithout oil filling

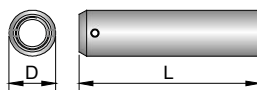
### Hydraulic Pump



Capacity	l/min	0.9
Max. Pressure	bar	700
W	mm	241
L	mm	292
B	mm	391
H	mm	520
Weight*	kg	35

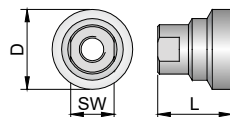
\*w eight w ith oil filling

### Stressing Coupler



Article No. 528 ___ 3000	00 401	00 422	00 423	00 424	00 465	00 466
Bar Diameter	20	26.5	32	36	40	50
L	mm	195	220	240	240	290
D	mm	62	62	62	62	85
Weight*	kg	2.45	3.48	3.54	3.30	5.01

### Spindle Nut



Article No. 485 ___ 3000	00 401	00 422	00 423	00 424	00 465	00 466
Bar Diameter	20	26.5	32	36	40	50
L	mm	120	120	120	120	190
D	mm	130	130	130	130	150
SW	mm	70	70	70	70	85
Weight*	kg	6.36	6.36	6.36	6.36	10.41

We reserve the right to make changes and improvements to the products and/or the process which may result in benefit and/or changes to physical/mechanical characteristics.

The data contained herein are considered representative of current production and is believed to be reliable and to represent the best available characterization of the product as of March 2024.