

CARBON HOLLOW BAR

750 (32 to 250 mm OD)

2C (254 to 610 mm OD)

750

Typical Analysis (Ave. values %)	C	Mn	Si	V	S	P
	0.16-0.22	1.30-1.70	0.10-0.50	0.10 – 0.20	≤0.035	≤0.035
NEAREST STANDARD	DIN		UNS		ASTM	
	~1.0517 20MnV6		K03013		A381	

DESCRIPTION	Carbon Hollow Bar has a high yield strength, aluminium treated for a fine grain, low alloy steel, for improved machinability and good welding characteristics. Ordered to the Euro Norm Standard EN 10294-1. This standard will allow for Bar to clean up to the ordered size with external chucking a minimum clean up length of 200mm or 3 times the O.D which ever is shorter will be achieved.
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APPLICATIONS	Universally used due to improved machinability. Suitable for all forms of mechanical equipment, such as hydraulic cylinders, gear wheels, shafts, axles, stuffing boxes, lock nuts , spindles, drill jigs, rolls etc.
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MECHANICAL PROPERTIES (as supplied)	Elongation A% 17%	Tensile strength	Yield Strength
	Wall thickness	MPa	MPa
	≤16 mm	650	470
	<16 ≤25 mm	620	460
	<25 ≤40 mm	600	430
	<40 ≤50 mm	550	430
	<50 ≤60 mm	520	400

TOLERANCES	Outside Diameter	≤75 mm +1.00mm -0 75-100mm +1.20mm - 0 >100 mm + 1.4% - 0
	Wall	Minimum thickness not more than 5% below nominal thickness
	Straightness	1 in 1000 measured in total length.

HEAT TREATMENT	Normalize	880-900°C. Air cool.
	Anneal	650-700°C. Cool slowly in controlled furnace.
	Carburize	900-950°C. Furnace or Air cool
	Core Refine	840°C. Water quench.
	Harden	800°C Water quench.
	Temper	180-210°C air cool

WELDING	Parts should be welded before Carburizing and Hardening. Preheat to 250-350°C. Filler metals:-Bohler FOX EV63 electrodes.
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Carbon Hollow Size Range to be corrected					
SIZE RANGE	30x20	75x65	105x55	130x105	180x150
	35x25	80x40	105x60	140x80	190x105
	40x20	80x45	105x70	140x90	190x135
	40x25	80x50	105x80	140x100	190x150
	40x30	80x55	105x85	140x105	190x160
	45x25	80x60	110x60	140x115	200x115
	45x30	85x45	110x70	150x75	200x130
	45x35	85x50	110x75	150x85	200x140
	50x30	85x55	110x80	150x95	200x160
	50x35	85x60	110x85	150x105	200x170
	50x40	85x65	110x90	150x120	210x130
	55x30	90x50	120x65	150x125	210x155
	55x35	90x55	120x70	160x90	210x165
	65x35	90x60	120x80	160x100	210x175
	65x40	90x65	120x85	160x115	210x185
	65x45	90x70	120x90	160x125	220x140
	65x50	95x50	120x95	160x135	220x150
	65x55	95x55	125x70	170x100	220x160
	70x40	95x60	125x80	170x110	220x180
	70x45	95x65	125x90	170x120	230x135
	70x50	95x70	125x95	170x130	230x145
	70x55	95x75	125x100	170x140	230x170
	70x60	100x55	130x65	180x75	230x190
	75x45	100x60	130x75	180x85	250x140
	75x50	100x70	130x80	180x100	250x160
	75x55	100x75	130x90	180x125	250x180
	75x60	100x80	130x100	180x140	250x200

Sizes normally stocked in Australia. Some branches may not hold the entire range.
Other sizes available on request.

CARBON HOLLOW BAR

2C (254 to 610 mm OD)

Typical Analysis (Ave. values %)	C	Mn	Si	V	S	P
	0.16-0.22	1.30-1.70	0.10-0.50	0.10 – 0.20	≤0.035	≤0.035
NEAREST STANDARD	DIN		UNS		ASTM	
	~1.5217 20MnV6		K03013		A381	

DESCRIPTION	2C Carbon Hollow Bar are high yield strength aluminium treated fine grained, low alloy steel, with improved machinability and welding characteristics.
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APPLICATIONS	Universally used due to reduced machining requirements. All forms of mechanical equipment, such as hydraulic cylinders, gear wheels, shafts, axles, stuffing boxes, lock nuts , spindles, drill jigs, rolls etc.
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MECHANICAL PROPERTIES (as supplied)	Tensile strength	650-800 MPa	
		Wall thickness	MPa
	Yield Strength	≤16 mm	480
		>16-30 mm	460
		>30 mm	440
Elong		18%	
Hardness		200-240 HB	

TOLERANCES	Outside Diameter	+1% -1%
	Wall	+12.5% - 12.5%
	Straightness	1 in 1000 measured in total length.

PHYSICAL PROPERTIES	Density (kg/dm ³)	7.85
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HEAT TREATMENT	Normalize	880-900°C. Air cool.
	Anneal	650-700°C. Cool slowly in controlled furnace.
	Carburize	900-950°C. Furnace or Air cool
	Core Refine	840°C. Water quench.
	Harden	800°C Water quench.
	Temper	180-210°C air cool

WELDING	Parts should be welded before Carburizing and Hardening. Preheat to 250-350°C. Filler metals:-Bohler FOX EV63 electrodes.
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Carbon Hollow Size Range to be corrected					
SIZE RANGE	254/154	273/223	324/274	406/316	508/368
	254/174	292/165	340/215	406/326	508/388
	254/182	298/198	356/236	406/346	508/408
	254/204	298/218	356/256	406/356	559/359
	267/187	298/228	356/276	419/299	585/401
	273/173	298/238	356/286	419/309	610/490
	273/183	298/248	356/296	419/319	610/510
	273/193	298/258	356/306	547/317	
	273/201	324/224	368/268	547/327	
	273/209	324/244	406/286	547/357	
	273/213	324/264	406/306	547/377	

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 Other sizes available on request.

LOCATIONS

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Bayswater	4 Ramage St Bayswater	3153	Ph (03) 9729 7356	Fax (03) 9738 0850
Adelaide	1 Williams Cir Pooraka	5095	Ph (08) 8368 4554	Fax (08) 8368 4555
Brisbane	12-18 Limestone St Darra	4076	Ph (07) 3712 9554	Fax (07) 3712 9555
Townsville	9-11 Caldwell St Garbutt	4814	Ph (07) 4479 4800	Fax (07) 4725 1316
Perth	29-33 Gauge Cir Canningvale	6155	Ph (08) 9455 8672	Fax (08) 9455 8673
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Launceston	20 Murphy St Invermay	7248	Ph (03) 6334 3542	Fax (03) 6331 4001

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