CAST IRON

2P – GREY IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Al	Cu
	3.25	0.55	2.30	0.08	0.4	0.1	0.1	0.8	0.1	0.7

NEAREST STANDARD	AS	BS	DIN	JIS
	1830-T260	1452-Grade 17	1691-GG35	FC-25

DESCRIPTION	2P is normally called for when exceptionally good wearing qualities are required or when the component design demands mechanical and physical properties superior to those of a softer, essentially ferritic cast iron. 2P is essentially pearlitic in structure with the fine graphite flake size and dense homogeneous structure. These properties ensure its suitability in applications demanding the ability to withstand high pressures without leaking and to resist wear in sliding friction applications .Typical hydraulic operating pressure in which 2P normally operates is around 23 MPa. Tests have shown it will withstand 68 MPa hydraulic pressure across a 3mm thickness in hydraulic cylinder end caps.

APPLICATIONS	Pistons, end caps, glands, support bearings, control valves, rotors. Slide rails, gear wheels, cams, bushes, helical gears, spiral gears. Pistons, piston rings, liquid and vacuum pump rotors, cylinder liners. Burners, blow moulds, burn off chucks, bottom plates, blanks, moulds, and textile machinery parts, ship repairs.

MECHANICAL PROPERTIES	Tensile Strength MPa	Compressive Strength MPa	Transverse Strength Kg	Hardness range HB
	220-260	800-850	ca 1800	215-269

GENERAL PROPERTIES		
	Machinability	Very good
	Micro finish	Excellent
	Galvanising	Very good
	Resistance to rust & acids	Very good
	Damping capacity	Very good
	Sliding	Excellent
	Wear resistance	Excellent
	Enamelling	Good
	Heat treatment	Oil quench & temper 400 HB max
	Structure	Homogeneous fine grain. Oil & pressure tight.
	Surface	Free of sand

BOHLER UDDEHOLM Australia
"High Performance Metals"

Cast Iron 2P Size Range

Round black										
SIZE RANGE	20	40	57.2	75	95	115	145	170	220	260
	25	45	60	80	100	120	150	180	230	310
	30	50	65	85	105	130	155	200	240	335
	35	55	70	90	110	140	160	210	250	360

Hollow					
SIZE RANGE	3”x1-1/2”	3”x2”	3’x2-1/4”	3’x2-1/2”	3”x2-3/4”
	3-1/2” x 1-1/2”	3-1/2”x2”	3-1/2”x2-1/4”	3-1/2”x2-1/2”	3-1/2” x3”
	4”x1-1/2”	4”x2”	4’x2-1/2”	4-1/2”x2”	4”x3-1/2”
	4-1/2”x2-1/2”	4”x3”	4-1/2”x3”	4-1/2”x3-1/2”	4-1/2”x4”
	5”x2”	5”x2-1/2”	5”x3”	5”x4”	5-1/2”x2”
	5-1/2”x3”	5”x3-1/2”	5”x4-1/2”	5-1/2”x2-1/2”	5-1/2”x3-1/2”
	5-1/2”x4”	5-1/2”x4-1/2”	5-1/2”x5”	6”x2”	6”x2-1/2”
	6”x3”	6”x3-1/2”	6’x4”	6”x4-1/2”	6”x5”
	6”x5-1/2”	6-1/2”x2”	” 6-1/2”x3	6-1/2”x4”	6-1/2”x4-1/2”
	6-1/2”x5”	6-1/2”x5-1/2”	7”x2-1/2”	7”x3”	7”x4”
	7”x4-1/2”	7”x5”	7”x6”	7-1/2”x5”	7-1/2”x6-1/2”
	7-1/2”x7”	8”x3-1/2”	8”x4”	8”x4-1/2”	8”x5”
	8”x6”	8”x6-1/2”	8”x7”	9”x5”	9”x6”
	9”x6-1/2”	9”x7”	9”x8”	10”x4”	10”x5”
	10”x6”	10”x7”	10”x7-1/2”	10”x8”	11x6”
	11”x7”	11”x7-1/2”	11”x8”	11”x9”	11-1/2”x8”
	11-1/2”x9”	12”x8”	12”x9”	12”x10”	13”x9”
	13”x11”	14”x10”	15”x12”		

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

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3D – DUCTILE IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Mg	Cu
	3.55	0.30	2.50	0.03	0.02	0.01	0.1	0.01	0.04	0.05

NEAREST STANDARD	AS	BS	DIN	JIS
	1831-400-250-12	2789-SNG 27/12	1693-GGG 40	FC-D45

DESCRIPTION	3D is spheroidal graphite (nodular) ductile iron.Ductile irons differ from the grey irons in that the graphite occurs as spheroids or nodules instead of flakes. The resulting material has generally higher strength than grey iron, is ductile rather than brittle, tough and readily machined. 3D is an essentially ferritic grade, having high elasticity and resistance to impact, suitable for applications involving thermal and mechanical shock. It can be welded but cannot be readily flame or induction hardened.

APPLICATIONS	Typical applications demanding resistance to corrosion and thermal and mechanical shock in marine, automotive, hydraulic, agricultural, railroad, machine tool and general manufacture. Pump bodies, glands, glass moulds, spur gears, worm gears, sprockets, heavy duty gears, impellors and rotors.

MECHANICAL PROPERTIES	Tensile Strength MPa	Permanent set stress MPa	Elongation %	Hardness range HB
	415	277	12	187 max

GENERAL PROPERTIES	
Machinability	Excellent
Micro finish	Excellent
Galvanising Enamelling	Good
Resistance to rust & acids	Very good
Damping capacity	Fair
Fatigue	Excellent
Wear resistance	Fair
Shock resistance	Excellent
Heat treatment	Not applicable
Structure	Homogeneous fine grain. Oil & pressure tight.
Surface	Free of sand

	Round black									
SIZE RANGE	40	65	90	115	140	170	200	250	360	
	45	70	95	120	145	175	210	260	410	
	50	75	100	125	150	180	220	285	460	
	55	80	105	130	155	185	230	310	485	
	60	85	110	135	160	190	240	335		

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

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4E – GREY IRON

Typical Analysis (Ave. values %)	C	Mn	Si	Ni	Cr	Mo	P	S	Al	Cu
	3.35	0.45	2.60	0.08	0.08	0.01	0.10	0.08	0.01	0.30

NEAREST STANDARD	AS	BS	DIN	JIS
	1830-T250	1452-Grade 17	1691-GG35	FC-25

DESCRIPTION	4E continuous cast bars consist of a uniform partial pearlitic structure from the bar surface to the core. This material is ideally suited to high speed machining with significant improvements in cutting tool life and reductions in drill wander which occurs when the drill point gravitates to a softer surface. 4E has a typical fine grain size of 7-8 in dense homogeneous matrix. These properties ensure its suitability in applications demanding the ability to withstand high pressures without leaking.

APPLICATIONS	Pistons, support bearings, glands, slide bearings, distributor blocks, manifolds. Guide rails, scale bars, spindle sleeves spacers, bushings, gear wheels, spur gears, change gears, pulleys, gear racks. Oil pump gears, impellors, plate valves. Angle plates, marking plates, V-blocks, round-tables. Gears, V-pulleys, sprockets, clutch drums, taper-lock brakes, racks, pinions, plus countless components covering many industries. Moulds, blow moulds.

MECHANICAL PROPERTIES	Tensile Strength MPa	Compressive Strength MPa	Hardness range HB
	220-260	700-800	170-220

GENERAL PROPERTIES	Machinability	Excellent.
	Micro finish	Excellent.
	Enamelling	Good.
	Resistance to rust & acids	Very good.
	Damping capacity	Very good.
	Sliding	Excellent.
	Structure	Homogeneous, extremely fine grain. Oil pressure tight, free of blow holes.
	Surface	Free of sand.

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Cast Iron 4E Size Range

Round black										
SIZE RANGE	25	50	75	100	130	160	185	230	335	
	30	55	80	105	140	1650	190	240	360	
	35	60	85	110	145	170	200	260	385	
	40	65	90	115	150	175	210	285	410	
	45	70	95	120	155	180	220	310		
Square black										
SIZE RANGE	50x50									

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

LOCATIONS

Bohler Uddeholm Australia Pty Ltd ABN 15000013052

Sydney	129-135 McCredie Rd Guildford	2161	Ph (02) 8724 5554	Fax (02) 8724 5555
Newcastle	3 Pavilion Pl Cardiff	2285	Ph (02) 4954 6611	Fax (02) 4956 5773
Albury	1 Eames St Albury	2640	Ph (02) 6041 3399	Fax (02) 6041 1820
Wollongong	40 Doyle Ave Unanderra	2526	Ph (02) 4272 6544	Fax (02) 4272 7563
Marayong	1/21 Binney Rd Marayong	2148	Ph (02) 9831 4431	Fax (02) 9671 1682
Melbourne	282-290 Greens Rd Dandenong	3175	Ph (03) 9767 5554	Fax (03) 9767 5555
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
Kewdale	5 Beete St Welshpool	6106	Ph (08) 9350 9582	Fax (08) 9350 9683
Launceston	20 Murphy St Invermay	7248	Ph (03) 6334 3542	Fax (03) 6331 4001

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