

METAL CIRCULAR SAW BLADES · HSS-DM05 · HSS-Co5 · HSS-DIN · SOLID CARBIDE



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ONLINE



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Index

Tooth shapes

BW	For cutting profile and pipes.	
HZ	For cutting solid material and thicker profiles, pipes > 3 mm	
BR	Special geometry for cutting pipes and profiles. In comparison to tooth shape BW has this BR shape double the number of cutting edges. This results to a much higher number of cuts and smooth surface finish. Price and time of delivery on request.	

Recommended number of teeth for cutting solid material

Crosscut d mm	Pitch	Tooth shape	Ø mm 175	Ø mm 200	Ø mm 250	Ø mm 275	Ø mm 300	Ø mm 315	Ø mm 350	Ø mm 370	Ø mm 400	Ø mm 425	Ø mm 450	Ø mm 500	Ø mm 560
			*40 mm	*45 mm	*60 mm	*65 mm	*70 mm	*75 mm	*80 mm	*86 mm	*96 mm	*106 mm	*112 mm	*128 mm	*145 mm
10 mm	5	HZ	110	130	160	180	180	200	220	220	250	260	280	310	350
20 mm	6	HZ	90	100	128	140	160	160	180	190	200	220	230	260	300
30 mm	8	HZ	70	80	100	110	120	120	140	140	160	160	180	200	220
50 mm	8	HZ			100	90	120	120	140	140	160	160	180	200	220
70 mm	10	HZ					94	100	110	110	120	130	140	160	180
90 mm	12	HZ					80	80	90	90	110	110	120	130	150
110 mm	14	HZ								80	80	80	90	100	120
130 mm	14	HZ									80	80	90	100	120
150 mm	16	HZ											80	90	100
160 mm	16	HZ												90	100
180 mm	18	HZ												80	90

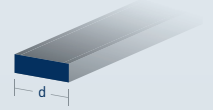
* Maximum cutting capacity

Recommended number of teeth for cutting pipes and profiles

Wall thickness S mm	Pitch	Tooth shape	Ø mm 175	Ø mm 200	Ø mm 250	Ø mm 275	Ø mm 300	Ø mm 315	Ø mm 350	Ø mm 370	Ø mm 400	Ø mm 425	Ø mm 450	Ø mm 500	Ø mm 560
			*40 mm	*45 mm	*60 mm	*65 mm	*70 mm	*75 mm	*80 mm	*86 mm	*96 mm	*106 mm	*112 mm	*128 mm	*145 mm
0.5 mm	3	BW	180	200	250	280	300	320	350	380					
1.0 mm	4	BW, BR	140	160	200	220	220	240	280	290	310	320	350	390	
2.0 mm	4.5	BW, BR	120	140	180	200	210	230	250	260	280	290	310	350	390
3.0 mm	5	BW, BR	110	130	160	180	180	200	220	230	250	260	280	310	350
4.0 mm	6	HZ, BR	90	100	130	140	160	170	180	200	200	220	230	260	290
5.0 mm	8	HZ, BR		80	100	110	120	130	140	150	160	170	180	200	220
6.0 mm	9	HZ, BR			90	100	110	120	130	130	140	150	160	180	200
7.0 mm	10	HZ, BR						100	110	120	120	130	140	160	180
8.0 mm	11	HZ, BR											130	140	160
9.0 mm	12	HZ, BR												130	150
10.0 mm	13	HZ												120	130

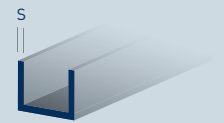
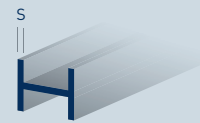
* Maximum cutting capacity

Cutting parameters solid material



Materials		fz (mm/z)		Cutting speed Vc (m/min)			
		Feed per tooth		5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
		Min	Max				
Steel	< 500 N/mm ²	0.025	0.08	30-40	30-50	-	-
	< 800 N/mm ²	0.025	0.07	20-35	25-40	-	-
	< 1200 N/mm ²	0.02	0.06	-	-	15-25	15-30
Stainless steel		0.01	0.06	-	-	10-25	10-30
Cast iron		0.025	0.05	-	-	20-30	30-50
Aluminium		0.04	0.09	-	500-900	-	-
Bronze		0.04	0.07	-	200-400	-	-
Copper		0.04	0.06	-	200-300	-	-
Brass		0.04	0.08	-	400-600	-	-
Zinc Alloy		0.025	0.08	-	30-100	-	-
Inconel		0.025	0.05	-	-	-	16-45
Titanium		0.02	0.05	-	-	-	15-30

Cutting parameters pipes and profiles



Materials		fz (mm/z)		Cutting speed Vc (m/min)			
		Feed per tooth		5 1000 HSS-DMo5 Steam treated	5 1040 5 1305 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
		Min	Max				
Steel	< 500 N/mm ²	0.025	0.24	45-130	70-230	-	-
	< 800 N/mm ²	0.025	0.18	30-100	45-140	-	-
	< 1200 N/mm ²	0.02	0.12	-	-	15-50	25-100
Stainless steel		0.01	0.12	-	-	15-45	16-80
Cast iron		0.025	0.05	-	-	15-45	30-65
Aluminium		0.025	0.12	-	1000-1600	-	-
Bronze		0.04	0.07	-	200-400	-	-
Copper		0.04	0.06	-	200-300	-	-
Brass		0.04	0.08	-	400-600	-	-
Zinc Alloy		0.025	0.08	-	30-100	-	-
Inconel		0.02	0.08	-	-	-	16-45
Titanium		0.02	0.08	-	-	-	15-30

Determination of cutting speed Vc

$$Vc \text{ (m/min)} = \frac{D \cdot \pi \cdot n}{1000}$$

Determination of feed rate Vf

$$Vf \text{ (mm/min)} = fz \cdot n \cdot Z$$

Determination of revolution speed n

$$n \text{ (min}^{-1}\text{)} = \frac{Vc \cdot 1000}{D \cdot \pi}$$

fz (mm/z) = Feed per tooth
 D (mm) = Saw blade diameter
 Z = Number of teeth
 n (min⁻¹) = rpm

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5 1000

HSS-DMo5
(M2)-DIN
1.3343

Steam treated



APPLICATION



Steel

< 800 N

See from page 1225

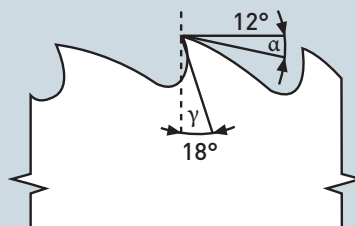
For steels $\leq 800 \text{ N/mm}^2$ **HSS-DMo5:** High-speed steel which includes vanadium, wolfram and Molybdenum. This results to:

- Very good mechanical characteristics and excellent strength with a hardness of $64 \pm 1 \text{ HRC}$.

'Steam treated' is a surface modification by CO_2 oxidation. Circular saws are let to tempering in overheated steam of around 350°C . This results to:

- Microporosity arised on surface enables better coolant distribution
- Surface hardness of 900 HV.
- Extremely fine surface layer decreases the friction (antifriction). Coefficient friction 0.60.

Cutting angles



TOOTH SHAPE

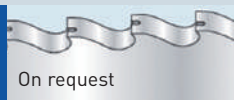
BW



HZ



BR



On request

SIDE RUNOUT

 $\varnothing 200-225 = 0.15$ $\varnothing 250-300 = 0.20$ $\varnothing 315-400 = 0.25$ $\varnothing 425-450 = 0.30$ $\varnothing 500 = 0.35$ Reduced side runout
on request

Movie



Kx coated

5 1040
HSS-DMo5
(M2)-DIN
1.3343

APPLICATION

			
Steel	Alu	Copper, copper alloys	Zinc alloy
< 800 N			

See from page 1225



For steel/stainless steel $\leq 800 \text{ N/mm}^2$
Aluminium, copper, brass

HSS-DMo5: High-speed steel which includes vanadium, wolfram and Molybdenum. This results to:

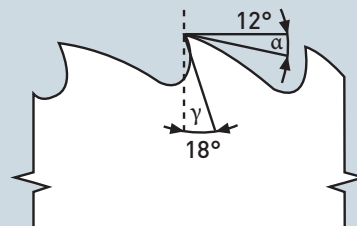
- Very good mechanical characteristics and excellent strength with a hardness of $64 \pm 1 \text{ HRC}$.

Kx coating: Provides much longer tool life than steam treated blades (see Art. 5 1000).

Furthermore:

- High resistance in high work temperatures. Therefore ideal also in cuts with insufficient cooling, minimal cooling, spray oil (mist).
- Due to low friction coefficient (0.45) and high surface hardness of 3500 HV suitable for higher cutting speed. Therefore ideal for automatic machines.

Cutting angles



TOOTH SHAPE

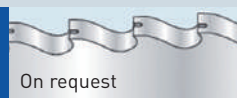
BW



HZ



BR



On request

SIDE RUNOUT

 $\varnothing 200-225 = 0.15$ $\varnothing 250-300 = 0.20$ $\varnothing 315-400 = 0.25$ $\varnothing 425-450 = 0.30$ $\varnothing 500 = 0.35$

Reduced side runout
on request

Movie



1221

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5 1300

HSS-Co5
Cobalt 5%
(M35)-DIN 1.3243

Steam treated



APPLICATION

Steel	Stainless	Grey cast iron
< 1200 N		

See from page 1225

For steel/stainless steel $\leq 1200 \text{ N/mm}^2$
Cast iron, bronze, zinc alloy, inconel

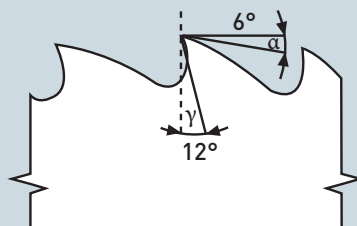
HSS-Co5: Strongly alloyed high speed steel with content of wolfram, molybdenum and **cobalt**. Cobalt obstructs critical grain growth and above all, maintains an excellent degree of hardness at high operating temperatures. These characteristics are very important when cutting very high-alloy materials such as stainless steel and very hard metals, which tend to develop high temperatures in the cutting zone.

Hardness of this steel: $65 \pm 1 \text{ HRC}$.

'**Steam treated**' is a surface modification by CO_2 oxidation. Circular saws are let to tempering in overheated steam of around 350°C . This results to:

- Microporosity arised on surface enables better coolant distribution
- Surface hardness of 900 HV.
- Extremely fine surface layer decreases the friction (antifriction). Coefficient friction 0.60.

Cutting angles



TOOTH SHAPE

BW	
HZ	
BR	On request

SIDE RUNOUT

$\varnothing 200-225 = 0.15$
$\varnothing 250-300 = 0.20$
$\varnothing 315-400 = 0.25$
$\varnothing 425-450 = 0.30$
$\varnothing 500 = 0.35$

Reduced side runout
on request

Movie



Kx coated

5 1340

HSS-Co5
Cobalt 5%
(M35)-DIN 1.3243

APPLICATION

				
Steel	Stainless	Grey cast iron	Inconel	Titanium
< 1200 N				

See from page 1225

For steel/stainless steel $\leq 1200 \text{ N/mm}^2$
Cast iron, bronze, zinc alloy, inconel

HSS-Co5: Strongly alloyed high speed steel with content of wolfram, molybdenum and **cobalt**. Cobalt obstructs critical grain growth and above all, maintains an excellent degree of hardness at high operating temperatures. These characteristics are very important when cutting very high-alloy materials such as stainless steel and very hard metals, which tend to develop high temperatures in the cutting zone.

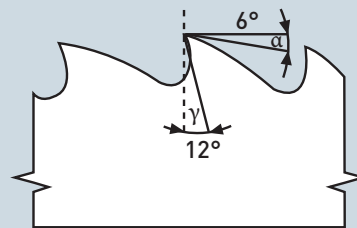
Hardness of this steel: $65 \pm 1 \text{ HRC}$.

Kx coating: Provides much longer tool life than steam treated blades (see Art. 5 1300).

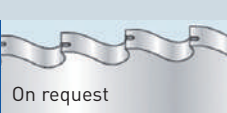
Furthermore:

- High resistance in high work temperatures. Therefore ideal also in cuts with insufficient cooling, minimal cooling, spray oil (mist).
- Due to low friction coefficient (0.50) and high surface hardness of 3500 HV suitable for higher cutting speed. Therefore ideal for automatic machines.

Cutting angles



TOOTH SHAPE

BW	
HZ	
BR	 On request

SIDE RUNOUT

$\varnothing 200-225 = 0.15$
$\varnothing 250-300 = 0.20$
$\varnothing 315-400 = 0.25$
$\varnothing 425-450 = 0.30$
$\varnothing 500 = 0.35$

Reduced side runout
on request

Movie



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5 1305

HSS-DMo5
(M2)-DIN
1.3343

Kx coated + profile geometry



APPLICATION

Steel	Alu	Copper, copper alloys	Zinc alloy
< 800 N			

Best cutting geometry for cutting pipes, profiles made of steel/stainless steel $\leq 800 \text{ N/mm}^2$ and made of aluminium, copper, brass

Price and time of delivery on request

HSS-DMo5: High-speed steel which includes vanadium, wolfram and Molybdenum. This results to:

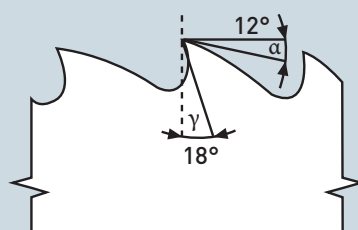
- Very good mechanical characteristics and excellent strength with a hardness of $64 \pm 1 \text{ HRC}$.

Kx coating: Provides much longer tool life than steam treated blades (see Art. 5 1000).

Furthermore:

- High resistance in high work temperatures. Therefore ideal also in cuts with insufficient cooling, minimal cooling, spray oil (mist).
- Due to low friction coefficient (0.45) and high surface hardness of 3500 HV suitable for higher cutting speed. Therefore ideal for automatic machines.

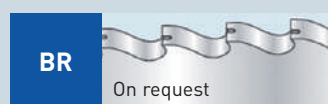
Cutting angles



Profile Geometry (BR)



TOOTH SHAPE



BR

On request

SIDE RUNOUT

Ø 200–225 = 0.15

Ø 250–300 = 0.20

Ø 315–400 = 0.25

Ø 425–450 = 0.30

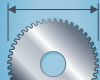
Ø 500 = 0.35

Reduced side runout
on request

Movie



Application see page

					1220	1221	1222	1223
					5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
					Art.	Art.	Art.	Art.
								
200	1.2	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 200 010	-	-	-
200	1.2	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 020	-	-	-
200	1.2	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 030	-	-	-
200	1.2	32	140 BW	2-8-45+2-9-50+2-11-63	% 5 1000 200 040	-	-	-
200	1.6	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 200 050	-	-	-
200	1.6	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 060	-	-	-
200	1.6	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 070	-	-	-
200	1.6	32	100 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 200 080	-	-	-
200	1.8	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 200 090	-	-	-
200	1.8	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 100	-	-	-
200	1.8	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 110	-	-	-
200	2.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 200 130	-	-	-
200	2.0	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 140	-	-	-
200	2.0	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 150	-	-	-
200	2.0	32	130 BW	2-8-45+2-9-50+2-11-63	• 5 1000 200 160	-	-	-
200	2.0	32	100 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 200 170	-	-	-
200	2.0	32	0	-	% 5 1000 200 180	-	-	-
200	2.0	32	200 BW	-	% 5 1000 200 190	-	-	-
200	2.0	32	160 BW	-	-	-	-	-
200	2.0	32	130 BW	-	% 5 1000 200 210	-	-	-
200	2.0	32	100 HZ	-	% 5 1000 200 220	-	-	-
210	2.0	32	0	2-8-45+2-9-50+2-11-63	-	-	% 5 1300 210 010	-
210	2.0	32	210 BW	2-8-45+2-9-50+2-11-63	% 5 1000 210 020	-	-	-
210	2.0	32	160 BW	2-8-45+2-9-50+2-11-63	-	-	-	-
210	2.0	32	120 HZ	2-8-45+2-9-50+2-11-63	-	% 5 1040 210 027	-	-
210	2.0	40	0	2-8-55 + 4-11-63	% 5 1000 210 030	-	% 5 1300 210 030	-
210	2.0	40	160 BW	2-8-55 + 4-11-63	% 5 1000 210 040	-	-	-
225	1.2	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 225 010	-	-	-
225	1.2	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 020	-	-	-
225	1.2	32	180 BW	2-8-45+2-9-50+2-11-63	% 5 1000 225 030	-	-	-
225	1.2	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 040	-	-	-
225	1.6	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 225 050	-	-	-
225	1.6	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 060	-	-	-
225	1.6	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 070	-	-	-
225	1.6	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 080	-	-	-
225	1.6	32	120 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 225 090	-	-	-
225	1.6	40	0	2-8-55 + 4-11-63	% 5 1000 225 100	-	% 5 1300 225 100	-
225	1.6	40	180 BW	2-8-55 + 4-11-63	% 5 1000 225 110	-	-	-
225	1.6	40	120 HZ	2-8-55 + 4-11-63	% 5 1000 225 120	-	-	-
225	2.0	32	0	2 NL REMS/Roller	% 5 1000 225 130	-	-	-
225	2.0	32	220 BW	2 NL REMS/Roller	-	-	-	-
225	2.0	32	180 BW	2 NL REMS/Roller	-	% 5 1040 225 150	% 5 1300 225 150	-
225	2.0	32	120 HZ	2 NL REMS/Roller	% 5 1000 225 160	% 5 1040 225 160	-	-
225	2.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 225 170	-	• 5 1300 225 170	-
225	2.0	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 180	• 5 1040 225 180	• 5 1300 225 180	-
225	2.0	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 225 190	• 5 1040 225 190	• 5 1300 225 190	-
225	2.0	32	160 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 225 200	• 5 1040 225 200	• 5 1300 225 200	-
225	2.0	32	120 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 225 210	• 5 1040 225 210	• 5 1300 225 210	-
225	2.0	32	90 BW	2-8-45+2-9-50+2-11-63	% 5 1000 225 220	-	-	-
225	2.0	32	0	4-9-50 + 4-11-63	% 5 1000 225 230	-	-	-
225	2.0	32	220 BW	4-9-50 + 4-11-63	-	-	-	-
225	2.0	32	160 BW	4-9-50 + 4-11-63	% 5 1000 225 250	-	-	-
225	2.0	32	120 BW	4-9-50 + 4-11-63	% 5 1000 225 260	-	-	-
225	2.0	32	90 HZ	4-9-50 + 4-11-63	% 5 1000 225 270	-	-	-
225	2.0	40	0	2-8-55 + 4-11-63	% 5 1000 225 280	-	% 5 1300 225 280	-
225	2.0	40	220 BW	2-8-55 + 4-11-63	% 5 1000 225 290	% 5 1040 225 290	-	-

% Sale item. While stocks last.

Other dimensions are available on request

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Application see page

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			BW 		5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
			HZ 		Art.	Art.	Art.	Art.
225	2.0	40	180 BW	2-8-55 + 4-11-63	% 5 1000 225 300	% 5 1040 225 300	-	-
225	2.0	40	160 BW	2-8-55 + 4-11-63	% 5 1000 225 310	% 5 1040 225 310	% 5 1300 225 310	-
225	2.0	40	120 HZ	2-8-55 + 4-11-63	-	% 5 1040 225 320	% 5 1300 225 320	-
225	2.0	40	90 HZ	2-8-55 + 4-11-63	% 5 1000 225 330	% 5 1040 225 330	-	-
225	2.5	32	0	2-8-45+2-9-50+2-11-63	% 5 1000 225 340	-	-	-
225	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	-	-	-	-
225	2.5	32	160 BW	2-8-45+2-9-50+2-11-63	-	-	-	-
225	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-
225	2.5	32	90 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 225 380	-	-	-
225	2.5	40	0	2-8-55 + 4-11-63	% 5 1000 225 390	-	-	-
225	2.5	40	220 BW	2-8-55 + 4-11-63	-	-	-	-
225	2.5	40	120 HZ	2-8-55 + 4-11-63	-	-	-	-
250	1.2	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 250 010	-	• 5 1300 250 010	-
250	1.2	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 020	-	-	-
250	1.2	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 030	-	-	-
250	1.2	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 040	-	-	-
250	1.2	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 050	-	-	-
250	1.6	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 250 060	-	• 5 1300 250 060	-
250	1.6	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 070	-	-	-
250	1.6	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 080	-	-	-
250	1.6	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 090	-	-	-
250	1.6	32	160 BW	2-8-45+2-9-50+2-11-63	% 5 1000 250 100	-	-	-
250	1.6	32	128 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 250 110	-	-	-
250	1.6	40	0	2-8-55 + 4-12-64	% 5 1000 250 120	-	-	-
250	2.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 250 150	-	• 5 1300 250 150	-
250	2.0	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 160	• 5 1040 250 160	• 5 1300 250 160	• 5 1340 250 160
250	2.0	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 170	• 5 1040 250 170	• 5 1300 250 170	• 5 1340 250 170
250	2.0	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 180	• 5 1040 250 180	• 5 1300 250 180	• 5 1340 250 180
250	2.0	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 190	• 5 1040 250 190	• 5 1300 250 190	-
250	2.0	32	140 BW	2-8-45+2-9-50+2-11-63	% 5 1000 250 200	-	-	-
250	2.0	32	128 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 250 210	• 5 1040 250 210	• 5 1300 250 210	-
250	2.0	32	100 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 250 220	% 5 1040 250 220	• 5 1300 250 220	-
250	2.0	32	0	4-9-50 + 4-11-63	% 5 1000 250 230	-	% 5 1300 250 230	-
250	2.0	32	200 BW	4-9-50 + 4-11-63	-	-	-	-
250	2.0	32	100 HZ	4-9-50 + 4-11-63	-	-	-	-
250	2.0	40	0	2-8-55 + 4-12-64	• 5 1000 250 280	-	• 5 1300 250 280	-
250	2.0	40	240 BW	2-8-55 + 4-12-64	• 5 1000 250 290	• 5 1040 250 290	• 5 1300 250 290	• 5 1340 250 290
250	2.0	40	200 BW	2-8-55 + 4-12-64	• 5 1000 250 300	• 5 1040 250 300	• 5 1300 250 300	• 5 1340 250 300
250	2.0	40	180 BW	2-8-55 + 4-12-64	% 5 1000 250 310	• 5 1040 250 310	• 5 1300 250 310	• 5 1340 250 310
250	2.0	40	160 BW	2-8-55 + 4-12-64	• 5 1000 250 320	• 5 1040 250 320	• 5 1300 250 320	-
250	2.0	40	128 HZ	2-8-55 + 4-12-64	• 5 1000 250 330	• 5 1040 250 330	• 5 1300 250 330	-
250	2.0	40	100 HZ	2-8-55 + 4-12-64	• 5 1000 250 340	• 5 1040 250 340	• 5 1300 250 340	-
250	2.5	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 250 350	-	• 5 1300 250 350	-
250	2.5	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 360	% 5 1040 250 360	-	• 5 1340 250 360
250	2.5	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 370	% 5 1040 250 370	• 5 1300 250 370	• 5 1340 250 370
250	2.5	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 250 380	• 5 1040 250 380	• 5 1300 250 380	• 5 1340 250 380
250	2.5	32	128 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 250 390	• 5 1040 250 390	• 5 1300 250 390	-
250	2.5	32	100 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 250 400	% 5 1040 250 400	• 5 1300 250 400	-
250	2.5	32	0	4-9-50 + 4-11-63	% 5 1000 250 410	-	-	-
250	2.5	32	128 HZ	4-9-50 + 4-11-63	% 5 1000 250 420	-	-	-
250	2.5	32	100 HZ	4-9-50 + 4-11-63	% 5 1000 250 430	-	-	-
250	2.5	40	0	2-8-55 + 4-12-64	• 5 1000 250 440	-	• 5 1300 250 440	-
250	2.5	40	240 BW	2-8-55 + 4-12-64	• 5 1000 250 450	% 5 1040 250 450	% 5 1300 250 450	-
250	2.5	40	200 BW	2-8-55 + 4-12-64	• 5 1000 250 460	% 5 1040 250 460	• 5 1300 250 460	-
250	2.5	40	160 BW	2-8-55 + 4-12-64	• 5 1000 250 470	% 5 1040 250 470	• 5 1300 250 470	-
250	2.5	40	128 HZ	2-8-55 + 4-12-64	• 5 1000 250 480	% 5 1040 250 480	• 5 1300 250 480	-

% Sale item. While stocks last.

Other dimensions are available on request

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CONTACT INFORMATION

For more information please call +353 49 435 2138 or send an email to ask@atagroup.ie

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					1220	1221	1222	1223
					5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
					Art.	Art.	Art.	Art.
	250	2.5	40	BW HZ	2-8-55 + 4-12-64	% 5 1000 250 490	% 5 1040 250 490	% 5 1300 250 490
	275	1.6	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 275 010	-	• 5 1300 275 010
	275	1.6	32	280 BW	2-8-45+2-9-50+2-11-63	% 5 1000 275 020	-	-
	275	1.6	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 030	-	-
	275	1.6	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 040	-	-
	275	2.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 275 050	-	• 5 1300 275 050
	275	2.0	32	280 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 060	• 5 1040 275 060	• 5 1300 275 060
	275	2.0	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 070	• 5 1040 275 070	• 5 1300 275 070
	275	2.0	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 080	• 5 1040 275 080	• 5 1300 275 080
	275	2.0	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 090	• 5 1040 275 090	% 5 1300 275 090
	275	2.0	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 100	-	% 5 1300 275 100
	275	2.0	32	140 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 275 110	% 5 1040 275 110	• 5 1300 275 110
	275	2.0	32	110 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 275 120	% 5 1040 275 120	• 5 1300 275 120
	275	2.0	32	0	4-9-50 + 4-11-63	-	-	-
	275	2.0	32	220 BW	4-9-50 + 4-11-63	-	-	-
	275	2.0	32	160 BW	4-9-50 + 4-11-63	• 5 1000 275 160	-	-
	275	2.0	32	140 HZ	4-9-50 + 4-11-63	-	-	-
	275	2.0	32	110 HZ	4-9-50 + 4-11-63	-	-	-
	275	1.6	40	0	2-8-55 + 4-12-64	• 5 1000 275 190	-	• 5 1300 275 190
	275	1.6	40	280 BW	2-8-55 + 4-12-64	• 5 1000 275 200	-	-
	275	1.6	40	220 BW	2-8-55 + 4-12-64	% 5 1000 275 210	-	-
	275	1.6	40	180 BW	2-8-55 + 4-12-64	• 5 1000 275 220	-	-
	275	2.0	40	0	2-8-55 + 4-12-64	• 5 1000 275 230	-	• 5 1300 275 230
	275	2.0	40	280 BW	2-8-55 + 4-12-64	• 5 1000 275 240	% 5 1040 275 240	• 5 1300 275 240
	275	2.0	40	220 BW	2-8-55 + 4-12-64	• 5 1000 275 250	• 5 1040 275 250	• 5 1300 275 250
	275	2.0	40	200 BW	2-8-55 + 4-12-64	-	-	• 5 1300 275 260
	275	2.0	40	180 BW	2-8-55 + 4-12-64	% 5 1000 275 270	-	% 5 1300 275 270
	275	2.0	40	160 BW	2-8-55 + 4-12-64	• 5 1000 275 280	-	% 5 1300 275 280
	275	2.0	40	140 HZ	2-8-55 + 4-12-64	• 5 1000 275 290	• 5 1040 275 290	% 5 1300 275 290
	275	2.5	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 275 300	-	• 5 1300 275 300
	275	2.5	32	280 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 310	-	• 5 1300 275 310
	275	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 320	• 5 1040 275 320	• 5 1300 275 320
	275	2.5	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 330	• 5 1040 275 330	• 5 1300 275 330
	275	2.5	32	160 BW	2-8-45+2-9-50+2-11-63	• 5 1000 275 340	-	• 5 1300 275 340
	275	2.5	32	140 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 275 350	• 5 1040 275 350	• 5 1300 275 350
	275	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	-	-	-
	275	2.5	32	110 HZ	2-8-45+2-9-50+2-11-63	-	-	-
	275	2.5	32	90 HZ	2-8-45+2-9-50+2-11-63	-	-	-
	275	2.5	32	0	4-9-50 + 4-11-63	-	-	-
	275	2.5	32	280 BW	4-9-50 + 4-11-63	-	-	-
	275	2.5	32	220 BW	4-9-50 + 4-11-63	-	-	-
	275	2.5	32	160 BW	4-9-50 + 4-11-63	% 5 1000 275 420	-	-
	275	2.5	32	140 HZ	4-9-50 + 4-11-63	-	-	-
	275	2.5	32	120 HZ	4-9-50 + 4-11-63	% 5 1000 275 440	-	-
	275	2.5	32	110 HZ	4-9-50 + 4-11-63	% 5 1000 275 450	-	-
	275	2.5	32	90 HZ	4-9-50 + 4-11-63	% 5 1000 275 460	-	-
	275	2.5	40	0	2-8-55 + 4-12-64	• 5 1000 275 470	-	• 5 1300 275 470
	275	2.5	40	280 BW	2-8-55 + 4-12-64	• 5 1000 275 480	• 5 1040 275 480	• 5 1300 275 480
	275	2.5	40	220 BW	2-8-55 + 4-12-64	• 5 1000 275 490	• 5 1040 275 490	• 5 1300 275 490
	275	2.5	40	180 BW	2-8-55 + 4-12-64	• 5 1000 275 500	• 5 1040 275 500	• 5 1300 275 500
	275	2.5	40	160 BW	2-8-55 + 4-12-64	• 5 1000 275 510	• 5 1040 275 510	• 5 1300 275 510
	275	2.5	40	140 HZ	2-8-55 + 4-12-64	• 5 1000 275 520	• 5 1040 275 520	• 5 1300 275 520
	275	2.5	40	120 HZ	2-8-55 + 4-12-64	• 5 1000 275 530	-	-
	275	2.5	40	110 HZ	2-8-55 + 4-12-64	• 5 1000 275 540	-	-
	275	2.5	40	90 HZ	2-8-55 + 4-12-64	• 5 1000 275 550	-	-
	275	3.0	32	0	2-8-45+2-9-50+2-11-63	% 5 1000 275 560	-	-

% Sale item. While stocks last.

Other dimensions are available on request

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			BW 	HZ 		5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
						Art.	Art.	Art.	Art.
									
275	3.0	32	220 BW	2-8-45+2-9-50+2-11-63	%	5 1000 275 570	-	-	-
275	3.0	32	140 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-	-
275	3.0	32	110 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-	-
275	3.0	32	0	4-9-50 + 4-11-63	%	5 1000 275 600	-	-	-
275	3.0	40	0	2-8-55 + 4-12-64	%	5 1000 275 610	-	-	-
275	3.0	40	220 BW	2-8-55 + 4-12-64	%	5 1000 275 620	-	-	-
300	1.6	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 300 010	-	• 5 1300 300 010	-
300	1.6	32	300 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 020	-	-	-
300	1.6	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 030	-	-	-
300	1.6	32	180 BW	2-8-45+2-9-50+2-11-63	-	-	-	-	-
300	2.0	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 300 050	-	• 5 1300 300 050	-
300	2.0	32	300 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 060	-	-	-
300	2.0	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 070	-	-	-
300	2.0	32	180 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 080	-	-	-
300	2.5	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 300 090	-	• 5 1300 300 090	-
300	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 100	• 5 1040 300 100	• 5 1300 300 100	• 5 1340 300 100
300	2.5	32	200 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 110	% 5 1040 300 110	• 5 1300 300 110	• 5 1340 300 110
300	2.5	32	180 BW	2-8-45+2-9-50+2-11-63	•	5 1000 300 120	• 5 1040 300 120	• 5 1300 300 120	-
300	2.5	32	160 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 300 130	% 5 1040 300 130	• 5 1300 300 130	• 5 1340 300 130
300	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 300 140	• 5 1040 300 140	• 5 1300 300 140	-
300	2.5	32	100 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 300 150	-	-	-
300	2.5	32	0	-	%	5 1000 300 160	-	-	-
300	2.5	32	220 BW	-	-	-	-	-	-
300	2.5	32	200 BW	-	%	5 1000 300 180	-	-	-
300	2.5	32	160 HZ	-	%	5 1000 300 190	-	-	-
300	2.5	32	120 HZ	-	%	5 1000 300 200	-	-	-
300	2.5	40	0	2-8-55 + 4-12-64	•	5 1000 300 210	-	• 5 1300 300 210	-
300	2.5	40	220 BW	2-8-55 + 4-12-64	•	5 1000 300 220	• 5 1040 300 220	• 5 1300 300 220	• 5 1340 300 220
300	2.5	40	200 BW	2-8-55 + 4-12-64	•	5 1000 300 230	% 5 1040 300 230	• 5 1300 300 230	-
300	2.5	40	180 BW	2-8-55 + 4-12-64	•	5 1000 300 240	-	• 5 1300 300 240	% 5 1340 300 240
300	2.5	40	160 HZ	2-8-55 + 4-12-64	•	5 1000 300 250	• 5 1040 300 250	• 5 1300 300 250	• 5 1340 300 250
300	2.5	40	120 HZ	2-8-55 + 4-12-64	•	5 1000 300 260	• 5 1040 300 260	• 5 1300 300 260	-
300	2.5	40	100 HZ	2-8-55 + 4-12-64	•	5 1000 300 270	-	-	-
300	3.0	32	160 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-	-
300	3.0	32	120 HZ	2-8-45+2-9-50+2-11-63	%	5 1000 300 290	-	-	-
300	3.0	32	0	-	%	5 1000 300 300	-	-	-
300	3.0	40	0	2-8-55 + 4-12-64	%	5 1000 300 310	-	-	-
300	3.0	40	160 HZ	2-8-55 + 4-12-64	-	-	-	-	-
300	3.0	40	120 HZ	2-8-55 + 4-12-64	-	-	-	-	-
315	1.6	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 315 010	-	• 5 1300 315 010	-
315	1.6	32	300 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 020	-	-	-
315	1.6	32	240 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 030	-	-	-
315	1.6	32	220 BW	2-8-45+2-9-50+2-11-63	%	5 1000 315 040	-	-	-
315	1.6	32	200 BW	2-8-45+2-9-50+2-11-63	%	5 1000 315 050	-	-	-
315	1.6	40	0	2-8-55 + 4-12-64	•	5 1000 315 060	-	• 5 1300 315 060	-
315	1.6	40	300 BW	2-8-55 + 4-12-64	•	5 1000 315 070	-	-	-
315	1.6	40	240 BW	2-8-55 + 4-12-64	%	5 1000 315 080	-	-	-
315	1.6	40	220 BW	2-8-55 + 4-12-64	%	5 1000 315 090	-	-	-
315	1.6	40	200 BW	2-8-55 + 4-12-64	•	5 1000 315 100	-	-	-
315	2.0	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 315 110	-	• 5 1300 315 110	-
315	2.0	32	300 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 120	-	-	-
315	2.0	32	240 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 130	-	-	-
315	2.0	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 140	-	-	-
315	2.0	32	200 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 150	-	-	-
315	2.0	32	180 BW	2-8-45+2-9-50+2-11-63	•	5 1000 315 160	-	-	-
315	2.0	40	0	2-8-55 + 4-12-64	•	5 1000 315 170	-	• 5 1300 315 170	-

% Sale item. While stocks last.

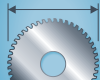
Other dimensions are available on request

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CONTACT INFORMATION

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Application see page

					1220	1221	1222	1223
					5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
					Art.	Art.	Art.	Art.
			 BW  HZ					
315	2.0	40	300 BW	2-8-55 + 4-12-64	-	-	-	-
315	2.0	40	240 BW	2-8-55 + 4-12-64	% 5 1000 315 190	-	-	-
315	2.0	40	220 BW	2-8-55 + 4-12-64	% 5 1000 315 200	-	-	-
315	2.0	40	200 BW	2-8-55 + 4-12-64	• 5 1000 315 210	-	-	-
315	2.0	40	180 BW	2-8-55 + 4-12-64	• 5 1000 315 220	-	-	-
315	2.5	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 315 230	-	• 5 1300 315 230	-
315	2.5	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 240	• 5 1040 315 240	• 5 1300 315 240	• 5 1340 315 240
315	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 250	• 5 1040 315 250	• 5 1300 315 250	• 5 1340 315 250
315	2.5	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 260	• 5 1040 315 260	• 5 1300 315 260	• 5 1340 315 260
315	2.5	32	180 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 270	-	• 5 1300 315 270	• 5 1340 315 270
315	2.5	32	160 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 315 280	• 5 1040 315 280	• 5 1300 315 280	• 5 1340 315 280
315	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 315 290	• 5 1040 315 290	• 5 1300 315 290	• 5 1340 315 290
315	2.5	32	100 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-
315	2.5	40	0	2-8-55 + 4-12-64	• 5 1000 315 300	-	• 5 1300 315 300	-
315	2.5	40	240 BW	2-8-55 + 4-12-64	• 5 1000 315 310	• 5 1040 315 310	• 5 1300 315 310	• 5 1340 315 310
315	2.5	40	220 BW	2-8-55 + 4-12-64	• 5 1000 315 320	• 5 1040 315 320	• 5 1300 315 320	• 5 1340 315 320
315	2.5	40	200 BW	2-8-55 + 4-12-64	• 5 1000 315 330	• 5 1040 315 330	• 5 1300 315 330	• 5 1340 315 330
315	2.5	40	180 BW	2-8-55 + 4-12-64	• 5 1000 315 340	• 5 1040 315 340	• 5 1300 315 340	• 5 1340 315 340
315	2.5	40	160 HZ	2-8-55 + 4-12-64	• 5 1000 315 350	-	• 5 1300 315 350	• 5 1340 315 350
315	2.5	40	120 HZ	2-8-55 + 4-12-64	• 5 1000 315 360	-	• 5 1300 315 360	-
315	2.5	40	100 HZ	2-8-55 + 4-12-64	-	-	-	-
315	2.5	50	0	4-15-80 + 4-14-85	-	-	-	-
315	2.5	50	240 BW	4-15-80 + 4-14-85	% 5 1000 315 390	-	-	-
315	2.5	50	160 HZ	4-15-80 + 4-14-85	-	-	-	-
315	2.5	50	120 HZ	4-15-80 + 4-14-85	-	-	-	-
315	3.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 315 420	-	• 5 1300 315 420	-
315	3.0	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 430	• 5 1040 315 430	% 5 1300 315 430	-
315	3.0	32	200 BW	2-8-45+2-9-50+2-11-63	• 5 1000 315 440	• 5 1040 315 440	• 5 1300 315 440	-
315	3.0	32	160 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 315 450	• 5 1040 315 450	• 5 1300 315 450	-
315	3.0	32	120 HZ	2-8-45+2-9-50+2-11-63	-	-	-	-
315	3.0	32	100 HZ	2-8-45+2-9-50+2-11-63	-	% 5 1040 315 457	% 5 1300 315 457	-
315	3.0	40	0	2-8-55 + 4-12-64	• 5 1000 315 460	-	• 5 1300 315 460	-
315	3.0	40	240 BW	2-8-55 + 4-12-64	• 5 1000 315 470	% 5 1040 315 470	% 5 1300 315 470	-
315	3.0	40	200 BW	2-8-55 + 4-12-64	• 5 1000 315 480	% 5 1040 315 480	• 5 1300 315 480	-
315	3.0	40	160 HZ	2-8-55 + 4-12-64	• 5 1000 315 490	• 5 1040 315 490	• 5 1300 315 490	-
315	3.0	40	120 HZ	2-8-55 + 4-12-64	-	-	% 5 1300 315 500	-
315	3.0	40	100 HZ	2-8-55 + 4-12-64	-	% 5 1040 315 510	-	-
315	3.0	50	0	4-15-80 + 4-14-85	% 5 1000 315 520	-	-	-
315	3.0	50	160 HZ	4-15-80 + 4-14-85	-	-	-	-
315	3.0	50	120 HZ	4-15-80 + 4-14-85	-	-	-	-
325	2.5	40	0	2-8-55 + 4-12-64	• 5 1000 325 010	-	• 5 1300 325 010	-
325	2.5	40	160 HZ	2-8-55 + 4-12-64	• 5 1000 325 020	-	• 5 1300 325 020	-
325	3.0	40	0	2-9-55 + 4-12-64	-	-	% 5 1300 325 030	-
325	3.0	40	160 HZ	2-9-55 + 4-12-64	-	-	-	-
350	2.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 350 010	-	• 5 1300 350 010	-
350	2.0	32	350 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 020	• 5 1040 350 020	-	• 5 1340 350 020
350	2.0	32	280 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 030	• 5 1040 350 030	• 5 1300 350 030	• 5 1340 350 030
350	2.0	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 040	• 5 1040 350 040	% 5 1300 350 040	• 5 1340 350 040
350	2.0	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 050	• 5 1040 350 050	• 5 1300 350 050	• 5 1340 350 050
350	2.5	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 350 060	-	• 5 1300 350 060	-
350	2.5	32	350 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 070	• 5 1040 350 070	• 5 1300 350 070	• 5 1340 350 070
350	2.5	32	280 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 080	• 5 1040 350 080	• 5 1300 350 080	• 5 1340 350 080
350	2.5	32	240 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 090	• 5 1040 350 090	• 5 1300 350 090	• 5 1340 350 090
350	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	• 5 1000 350 100	% 5 1040 350 100	• 5 1300 350 100	• 5 1340 350 100
350	2.5	32	180 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 350 110	• 5 1040 350 110	• 5 1300 350 110	• 5 1340 350 110
350	2.5	32	160 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 350 120	• 5 1040 350 120	• 5 1300 350 120	• 5 1340 350 120

% Sale item. While stocks last.

Other dimensions are available on request

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			BW 	HZ 		5 1000 HSS-DMo5 Steam treated Art.	5 1040 HSS-DMo5 Kx-coated Art.	5 1300 HSS-Co5 Steam treated Art.	5 1340 HSS-Co5 Kx-coated Art.
350	2.5	32	140 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 130	-	-	-
350	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 140	-	-	-
350	2.5	40	0	2-8-55+4-12-64	•	5 1000 350 150	-	• 5 1300 350 150	-
350	2.5	40	350 BW	2-8-55+4-12-64	%	5 1000 350 160	% 5 1040 350 160	• 5 1300 350 160	• 5 1340 350 160
350	2.5	40	280 BW	2-8-55+4-12-64	•	5 1000 350 170	% 5 1040 350 170	• 5 1300 350 170	• 5 1340 350 170
350	2.5	40	240 BW	2-8-55+4-12-64	•	5 1000 350 180	• 5 1040 350 180	• 5 1300 350 180	• 5 1340 350 180
350	2.5	40	220 BW	2-8-55+4-12-64	•	5 1000 350 190	• 5 1040 350 190	• 5 1300 350 190	• 5 1340 350 190
350	2.5	40	180 HZ	2-8-55+4-12-64	•	5 1000 350 200	• 5 1040 350 200	• 5 1300 350 200	-
350	2.5	40	160 HZ	2-8-55+4-12-64	•	5 1000 350 205	• 5 1040 350 205	• 5 1300 350 205	• 5 1340 350 205
350	2.5	40	120 HZ	2-8-55 + 4-12-64	-	-	-	-	-
350	2.5	50	0	4-15-80 + 4-14-85	%	5 1000 350 210	-	-	-
350	2.5	50	220 BW	4-15-80 + 4-14-85	%	5 1000 350 220	-	-	-
350	2.5	50	160 HZ	4-15-80 + 4-14-85	-	-	-	-	-
350	2.5	50	120 HZ	4-15-80 + 4-14-85	%	5 1000 350 240	-	-	-
350	2.5	50	100 HZ	4-15-80 + 4-14-85	%	5 1000 350 250	-	-	-
350	3.0	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 350 260	-	• 5 1300 350 260	-
350	3.0	32	280 BW	2-8-45+2-9-50+2-11-63	•	5 1000 350 270	% 5 1040 350 270	• 5 1300 350 270	• 5 1340 350 270
350	3.0	32	240 BW	2-8-45+2-9-50+2-11-63	%	5 1000 350 280	% 5 1040 350 280	% 5 1300 350 280	% 5 1340 350 280
350	3.0	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 350 290	• 5 1040 350 290	• 5 1300 350 290	• 5 1340 350 290
350	3.0	32	200 BW	2-8-45+2-9-50+2-11-63	•	5 1000 350 300	% 5 1040 350 300	• 5 1300 350 300	% 5 1340 350 300
350	3.0	32	180 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 310	• 5 1040 350 310	• 5 1300 350 310	• 5 1340 350 310
350	3.0	32	160 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 320	% 5 1040 350 320	• 5 1300 350 320	% 5 1340 350 320
350	3.0	32	140 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 330	• 5 1040 350 330	% 5 1300 350 330	-
350	3.0	32	120 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 350 340	% 5 1040 350 340	% 5 1300 350 340	-
350	3.0	40	0	2-8-55+4-12-64	•	5 1000 350 350	-	• 5 1300 350 350	-
350	3.0	40	280 BW	2-8-55+4-12-64	•	5 1000 350 360	• 5 1040 350 360	• 5 1300 350 360	• 5 1340 350 360
350	3.0	40	240 BW	2-8-55+4-12-64	%	5 1000 350 370	% 5 1040 350 370	% 5 1300 350 370	• 5 1340 350 370
350	3.0	40	220 BW	2-8-55+4-12-64	•	5 1000 350 380	% 5 1040 350 380	• 5 1300 350 380	• 5 1340 350 380
350	3.0	40	200 BW	2-8-55+4-12-64	•	5 1000 350 390	% 5 1040 350 390	• 5 1300 350 390	• 5 1340 350 390
350	3.0	40	180 HZ	2-8-55+4-12-64	•	5 1000 350 400	• 5 1040 350 400	• 5 1300 350 400	• 5 1340 350 400
350	3.0	40	160 HZ	2-8-55+4-12-64	•	5 1000 350 410	% 5 1040 350 410	• 5 1300 350 410	• 5 1340 350 410
350	3.0	40	140 HZ	2-8-55+4-12-64	•	5 1000 350 420	• 5 1040 350 420	• 5 1300 350 420	• 5 1340 350 420
350	3.0	40	120 HZ	2-8-55+4-12-64	•	5 1000 350 430	-	• 5 1300 350 430	-
350	3.0	40	110 HZ	2-8-55+4-12-64	•	5 1000 350 440	• 5 1040 350 440	-	-
350	3.0	40	90 HZ	2-8-55+4-12-64	•	5 1000 350 450	• 5 1040 350 450	• 5 1300 350 450	-
350	3.0	50	0	4-15-80 + 4-14-85	•	5 1000 350 460	-	• 5 1300 350 460	-
350	3.0	50	220 BW	4-15-80 + 4-14-85	•	5 1000 350 470	-	• 5 1300 350 470	-
350	3.0	50	180 HZ	4-15-80 + 4-14-85	%	5 1000 350 480	-	% 5 1300 350 480	-
350	3.0	50	160 HZ	4-15-80 + 4-14-85	•	5 1000 350 490	% 5 1040 350 490	• 5 1300 350 490	-
350	3.0	50	140 HZ	4-15-80 + 4-14-85	•	5 1000 350 500	-	% 5 1300 350 500	-
350	3.0	50	120 HZ	4-15-80 + 4-14-85	•	5 1000 350 510	% 5 1040 350 510	• 5 1300 350 510	-
350	3.0	50	100 HZ	4-15-80 + 4-14-85	%	5 1000 350 520	% 5 1040 350 520	-	-
360	3.5	50	0	4-15-80 + 4-14-85	%	5 1000 360 010	-	-	-
360	3.5	50	120 HZ	4-15-80 + 4-14-85	-	-	-	-	-
370	2.5	32	0	2-8-45+2-9-50+2-11-63	•	5 1000 370 010	-	• 5 1300 370 010	-
370	2.5	32	220 BW	2-8-45+2-9-50+2-11-63	•	5 1000 370 020	-	-	-
370	2.5	32	160 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 370 030	-	-	-
370	2.5	32	120 HZ	2-8-45+2-9-50+2-11-63	•	5 1000 370 040	-	-	-
370	2.5	40	0	2-8-55+4-12-64	•	5 1000 370 050	-	• 5 1300 370 050	-
370	2.5	40	220 BW	2-8-55+4-12-64	•	5 1000 370 060	-	-	-
370	2.5	40	160 HZ	2-8-55+4-12-64	•	5 1000 370 070	-	-	-
370	2.5	40	120 HZ	2-8-55+4-12-64	%	5 1000 370 080	-	-	-
370	2.5	50	0	4-15-80 + 4-14-85	•	5 1000 370 090	-	• 5 1300 370 090	-
370	2.5	50	220 BW	4-15-80 + 4-14-85	•	5 1000 370 100	-	-	-
370	2.5	50	160 HZ	4-15-80 + 4-14-85	%	5 1000 370 110	-	-	-
370	2.5	50	120 HZ	4-15-80 + 4-14-85	%	5 1000 370 120	-	-	-

* Sale item. While stocks last.

Other dimensions are available on request

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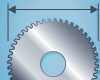
CONTACT INFORMATION

For more information please call +353 49 435 2138 or send an email to ask@atagroup.ie



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					1220	1221	1222	1223
					5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
					Art.	Art.	Art.	Art.
			 BW  HZ					
370	3.0	40	0	2-8-55+4-12-64	• 5 1000 370 130	-	• 5 1300 370 130	-
370	3.0	40	220 BW	2-8-55+4-12-64	• 5 1000 370 140	-	-	-
370	3.0	40	160 HZ	2-8-55+4-12-64	• 5 1000 370 150	-	-	-
370	3.0	40	120 HZ	2-8-55+4-12-64	• 5 1000 370 160	-	-	-
370	3.0	50	0	4-15-80 + 4-14-85	• 5 1000 370 170	-	• 5 1300 370 170	-
370	3.0	50	220 BW	4-15-80 + 4-14-85	• 5 1000 370 180	% 5 1040 370 180	• 5 1300 370 180	-
370	3.0	50	160 HZ	4-15-80 + 4-14-85	• 5 1000 370 190	• 5 1040 370 190	• 5 1300 370 190	-
370	3.0	50	120 HZ	4-15-80 + 4-14-85	• 5 1000 370 200	% 5 1040 370 200	• 5 1300 370 200	-
370	3.0	50	100 HZ	4-15-80 + 4-14-85	• 5 1000 370 210	• 5 1040 370 210	• 5 1300 370 210	-
400	2.5	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 400 010	-	• 5 1300 400 010	-
400	2.5	32	240 BW	2-8-45+2-9-50+2-11-63	% 5 1000 400 020	-	-	-
400	2.5	32	200 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 400 030	-	-	-
400	2.5	32	160 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 400 040	-	-	-
400	2.5	50	0	4-15-80+4-14-85	% 5 1000 400 050	-	• 5 1300 400 050	-
400	2.5	50	240 BW	4-15-80+4-14-85	• 5 1000 400 060	-	-	-
400	2.5	50	200 HZ	4-15-80+4-14-85	% 5 1000 400 070	-	-	-
400	2.5	50	160 HZ	4-15-80+4-14-85	• 5 1000 400 080	-	-	-
400	3.0	32	0	2-8-45+2-9-50+2-11-63	• 5 1000 400 090	-	• 5 1300 400 090	-
400	3.0	32	200 HZ	2-8-45+2-9-50+2-11-63	• 5 1000 400 100	-	-	-
400	3.0	32	160 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 400 110	-	-	-
400	3.0	32	120 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 400 120	-	-	-
400	3.0	32	100 HZ	2-8-45+2-9-50+2-11-63	% 5 1000 400 130	-	-	-
400	3.0	40	0	2-8-55+4-12-64	• 5 1000 400 140	-	• 5 1300 400 140	-
400	3.0	40	200 HZ	2-8-55+4-12-64	• 5 1000 400 150	-	% 5 1300 400 150	-
400	3.0	40	160 HZ	2-8-55+4-12-64	• 5 1000 400 160	-	• 5 1300 400 160	-
400	3.0	40	120 HZ	2-8-55+4-12-64	% 5 1000 400 170	-	% 5 1300 400 170	-
400	3.0	40	100 HZ	2-8-55+4-12-64	• 5 1000 400 180	-	% 5 1300 400 180	-
400	3.0	50	0	4-15-80+4-14-85	• 5 1000 400 190	-	% 5 1300 400 190	-
400	3.0	50	200 HZ	4-15-80+4-14-85	• 5 1000 400 200	-	• 5 1300 400 200	-
400	3.0	50	160 HZ	4-15-80+4-14-85	• 5 1000 400 210	-	% 5 1300 400 210	-
400	3.0	50	120 HZ	4-15-80+4-14-85	• 5 1000 400 220	-	• 5 1300 400 220	-
400	3.0	50	100 HZ	4-15-80+4-14-85	• 5 1000 400 230	-	• 5 1300 400 230	-
400	3.5	40	0	2-15-80 + 4-12-64	-	-	-	-
400	3.5	40	160 HZ	2-15-80 + 4-12-64	-	-	-	-
400	3.5	40	120 HZ	2-15-80 + 4-12-64	% 5 1000 400 260	-	-	-
400	3.5	50	0	4-15-80+4-14-85	• 5 1000 400 270	-	• 5 1300 400 270	-
400	3.5	50	200 HZ	4-15-80+4-14-85	• 5 1000 400 280	-	• 5 1300 400 280	-
400	3.5	50	160 HZ	4-15-80+4-14-85	• 5 1000 400 290	-	• 5 1300 400 290	-
400	3.5	50	120 HZ	4-15-80+4-14-85	• 5 1000 400 300	-	-	-
400	3.5	50	100 HZ	4-15-80+4-14-85	• 5 1000 400 310	-	% 5 1300 400 310	-
400	4.0	40	0	2-15-80 + 4-12-64	% 5 1000 400 320	-	% 5 1300 400 320	-
400	4.0	40	200 HZ	2-15-80 + 4-12-64	% 5 1000 400 330	-	-	-
400	4.0	40	120 HZ	2-15-80 + 4-12-64	% 5 1000 400 340	-	-	-
400	4.0	40	100 HZ	2-15-80 + 4-12-64	-	-	-	-
400	4.0	50	0	4-15-80+4-14-85	• 5 1000 400 360	-	• 5 1300 400 360	-
400	4.0	50	200 HZ	4-15-80+4-14-85	• 5 1000 400 370	-	% 5 1300 400 370	-
400	4.0	50	160 HZ	4-15-80+4-14-85	• 5 1000 400 380	-	• 5 1300 400 380	-
400	4.0	50	120 HZ	4-15-80+4-14-85	• 5 1000 400 390	-	• 5 1300 400 390	-
400	4.0	50	100 HZ	4-15-80+4-14-85	• 5 1000 400 400	-	• 5 1300 400 400	-
425	3.0	40	0	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 010	-	-	-
425	3.0	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 020	-	-	-
425	3.0	40	120 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 030	-	-	-
425	3.0	50	0	4-15-80+4-14-85	• 5 1000 425 040	-	• 5 1300 425 040	-
425	3.0	50	220 HZ	4-15-80+4-14-85	• 5 1000 425 050	-	-	-
425	3.0	50	160 HZ	4-15-80+4-14-85	• 5 1000 425 060	-	-	-
425	3.0	50	120 HZ	4-15-80+4-14-85	-	-	-	-

% Sale item. While stocks last.

Other dimensions are available on request

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			BW HZ		5 1000 HSS-DMo5 Steam treated	5 1040 HSS-DMo5 Kx-coated	5 1300 HSS-Co5 Steam treated	5 1340 HSS-Co5 Kx-coated
					Art.	Art.	Art.	Art.
425	3.5	40	0	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 425 080	-	• 5 1300 425 080	-
425	3.5	40	220 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 090	-	-	-
425	3.5	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 425 100	-	-	-
425	3.5	50	0	4-15-80+4-14-85	• 5 1000 425 110	-	• 5 1300 425 110	-
425	3.5	50	220 HZ	4-15-80+4-14-85	• 5 1000 425 120	-	-	-
425	3.5	50	160 HZ	4-15-80+4-14-85	• 5 1000 425 130	-	-	-
425	3.5	50	120 HZ	4-15-80+4-14-85	-	-	-	-
425	4.0	40	0	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 150	-	% 5 1300 425 150	-
425	4.0	40	220 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 160	-	-	-
425	4.0	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 425 170	-	-	-
425	4.0	40	120 HZ	2-15-80 + 2-15-100 + 4-12-64	-	-	-	-
425	4.0	50	0	4-15-80+4-14-85	• 5 1000 425 190	-	• 5 1300 425 190	-
425	4.0	50	76 HZ	4-15-80+4-14-85	-	-	-	-
450	3.0	40	0	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 010	-	• 5 1300 450 010	-
450	3.0	40	240 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 020	-	-	-
450	3.0	40	200 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 450 030	-	-	-
450	3.0	40	180 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 040	-	-	-
450	3.0	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 450 050	-	-	-
450	3.0	40	120 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 060	-	-	-
450	3.0	50	0	4-15-80+4-14-85	• 5 1000 450 070	-	• 5 1300 450 070	-
450	3.0	50	240 HZ	4-15-80+4-14-85	• 5 1000 450 080	-	-	-
450	3.0	50	200 HZ	4-15-80+4-14-85	% 5 1000 450 090	-	-	-
450	3.0	50	180 HZ	4-15-80+4-14-85	% 5 1000 450 100	-	-	-
450	3.0	50	160 HZ	4-15-80+4-14-85	• 5 1000 450 110	-	-	-
450	3.0	50	120 HZ	4-15-80+4-14-85	• 5 1000 450 120	-	-	-
450	3.5	40	0	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 130	-	• 5 1300 450 130	-
450	3.5	40	240 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 140	-	% 5 1300 450 140	-
450	3.5	40	200 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 450 150	-	-	-
450	3.5	40	180 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 160	-	-	-
450	3.5	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 170	-	-	-
450	3.5	40	120 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 180	-	-	-
450	3.5	50	0	4-15-80+4-14-85	• 5 1000 450 190	-	• 5 1300 450 190	-
450	3.5	50	240 HZ	4-15-80+4-14-85	% 5 1000 450 200	-	-	-
450	3.5	50	200 HZ	4-15-80+4-14-85	% 5 1000 450 210	-	-	-
450	3.5	50	180 HZ	4-15-80+4-14-85	• 5 1000 450 220	-	-	-
450	3.5	50	160 HZ	4-15-80+4-14-85	% 5 1000 450 230	-	-	-
450	3.5	50	120 HZ	4-15-80+4-14-85	• 5 1000 450 240	-	-	-
450	4.0	40	0	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 250	-	• 5 1300 450 250	-
450	4.0	40	240 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 260	-	-	-
450	4.0	40	200 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 450 270	-	-	-
450	4.0	40	180 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 280	-	-	-
450	4.0	40	160 HZ	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 450 290	-	-	-
450	4.0	40	120 HZ	2-15-80 + 2-15-100 + 4-12-64	• 5 1000 450 300	-	-	-
450	4.0	50	0	4-15-80+4-14-85	• 5 1000 450 310	-	• 5 1300 450 310	-
450	4.0	50	240 HZ	4-15-80+4-14-85	• 5 1000 450 320	-	-	-
450	4.0	50	180 HZ	4-15-80+4-14-85	• 5 1000 450 330	-	-	-
450	4.0	50	120 HZ	4-15-80+4-14-85	• 5 1000 450 340	-	-	-
500	4.0	40	0	2-15-80 + 2-15-100 + 4-12-64	% 5 1000 500 010	-	% 5 1300 500 010	-
500	4.0	40	260 HZ	2-15-80 + 2-15-100 + 4-12-64	-	-	-	-

% Sale item. While stocks last.

Other dimensions are available on request

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CONTACT INFORMATION

For more information please call +353 49 435 2138 or send an email to ask@atagroup.ie

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