



STAR SINTERED PRODUCTS LTD.

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STAR FERRITE

INTRODUCTION

FERRITE IMPEDER CORE

Ferrite Impeder Cores are used for concentration of magnetic flux in high frequency, RF, induction welding of steel tubes and pipes. In this application ferrite core experience temperature upto 150°C and the core properties must be optimised for this environment. Properties which influence the efficiency and the speed of the process are:

1. A high permeability (μ) material to ensure high degree of magnetic flux concentration.
2. A high saturation flux density B_s , at the working temperature, which determines, the maximum field in which the ferrite core can usually perform.
3. A high curie temperature at which the material ceased to concentrate magnetic flux, due to loss of ferrimagnetic properties.

For these applications, special ferrite materials are offered. They are having following excellent physical properties.

- (a) High curie temperature and a low temperature dependence of the initial permeability and of magnetic flux density in the working temperature range.
- (b) A high saturation flux density in the working temperature range upto 1500c
- (c) Low losses with increase of temperature
- (d) A relative high amplitude permeability
- (e) A high stability of the initial permeability vs. frequency upto 1MHz.

Following four types of Impeder Core are produced and supplied:

Fig.- 1 Solid Plain Core- P

Fig.- 2 Solid Fluted Core- F

Fig.- 3 Hollow Fluted Core- FH

Fig.-1 Solid Plain Core -P

Fig.-2 Solid Fluted Core -F

Fig.-4 Hollow Fluted Core -FH

SP 20 Material Properties

Property	Symbol	Unit	SP 20
Initial Permeability (T = 25 0C)	μ_i		2300 $\pm$ 20%
Flux Density (H = 1200 A/m, f = 10 kHz)	B_s (25°C) (100°C)	mT mT	>490 >390
Residual Flux Density	B_r (25°C)	mT	>130
Coercive Force H_c	H_c	A/m	<15
Curie Temperature	T_c	°C	>200
Resistivity	ρ	Ω .CM	8
Density	d	Kg/m ³	4850

The overall straightness of Impeder Core is excellent and is controlled by passing it through a 200mm long gauge with an inner diameter equal to, nominal outer diameter of the Core plus 1.0mm.

All types of Impeder Core are supplied in a nominal length, equal to 200+ 2mm

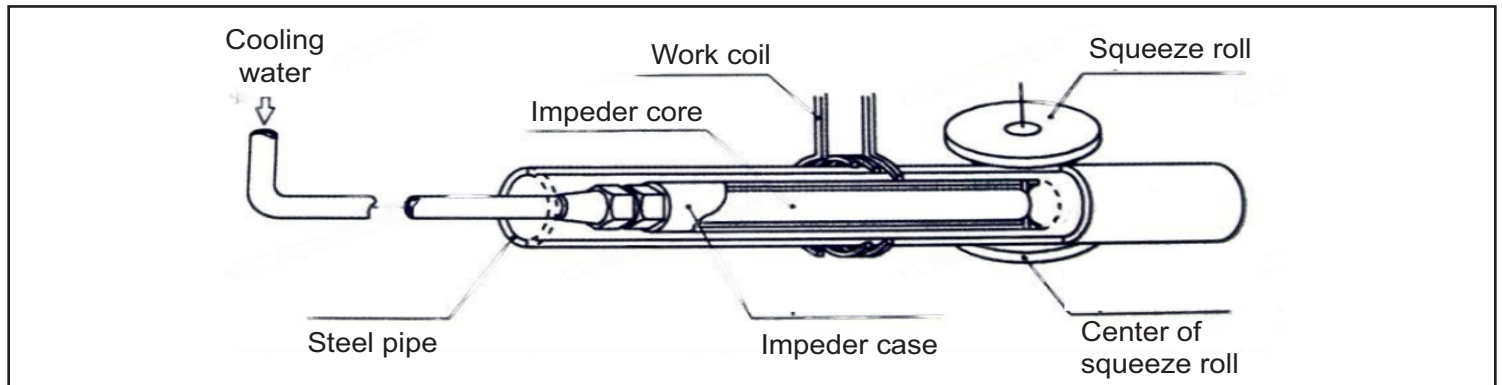


Figure-1	Size		OD (mm)	Id (mm)	L (mm)	Segment	
	2 x 200	P	2 $\pm$ 0.1		200 $\pm$ 2	1	
	3 x 200	P	3 $\pm$ 0.2		200 $\pm$ 2	1	
	4 x 200	P	4 $\pm$ 0.2		200 $\pm$ 2	1	
	5 x 200	P	5 $\pm$ 0.2		200 $\pm$ 2	1	
	6 x 200	P	6 $\pm$ 0.2		200 $\pm$ 2	1	
	7 x 200	P	7 $\pm$ 0.2		200 $\pm$ 2	1	
	8 x 200	P	8 $\pm$ 0.2		200 $\pm$ 2	1	
	9 x 200	P	9 $\pm$ 0.2		200 $\pm$ 2	1	
	10 x 200	P	10 $\pm$ 0.3		200 $\pm$ 2	1	
	11 x 200	P	11 $\pm$ 0.3		200 $\pm$ 2	1	
	12 x 200	P	12 $\pm$ 0.3		200 $\pm$ 2	1	
	13 x 200	P	13 $\pm$ 0.3		200 $\pm$ 2	1	
	14 x 200	P	14 $\pm$ 0.4		200 $\pm$ 2	1	

Fig. - 1



Fig. - 2



Fig. -



IMPEDER CORE

Figure-2	Size		OD (mm)	Id (mm)	L (mm)	Segment	Grove
	4 x 200	F	4 ± 0.2		200 ± 2	1	6
	5 x 200	F	5 ± 0.2		200 ± 2	1	6
	6 x 200	F	6 ± 0.2		200 ± 2	1	6
	7 x 200	F	7 ± 0.2		200 ± 2	1	6
	8 x 200	F	8 ± 0.2		200 ± 2	1	6
	9 x 200	F	9 ± 0.2		200 ± 2	1	6
	10 x 200	F	10 ± 0.2		200 ± 2	1	6
	11 x 200	F	11 ± 0.2		200 ± 2	1	6
	12 x 200	F	12 ± 0.2		200 ± 2	1	8
	13 x 200	F	13 ± 0.2		200 ± 2	1	8
	14 x 200	F	14 ± 0.2		200 ± 2	1	8
	15 x 200	F	15 ± 0.2		200 ± 2	1	8
	16 x 200	F	16 ± 0.2		200 ± 2	1	8
	17 x 200	F	17 ± 0.2		200 ± 2	1	8
	18 x 200	F	18 ± 0.2		200 ± 2	1	8

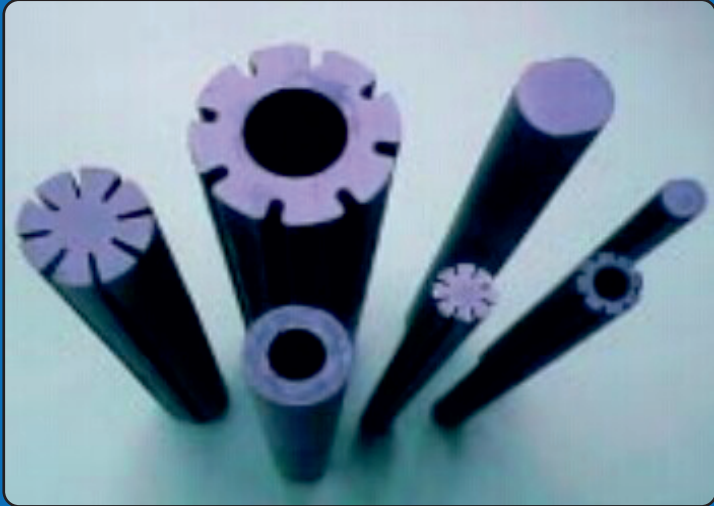
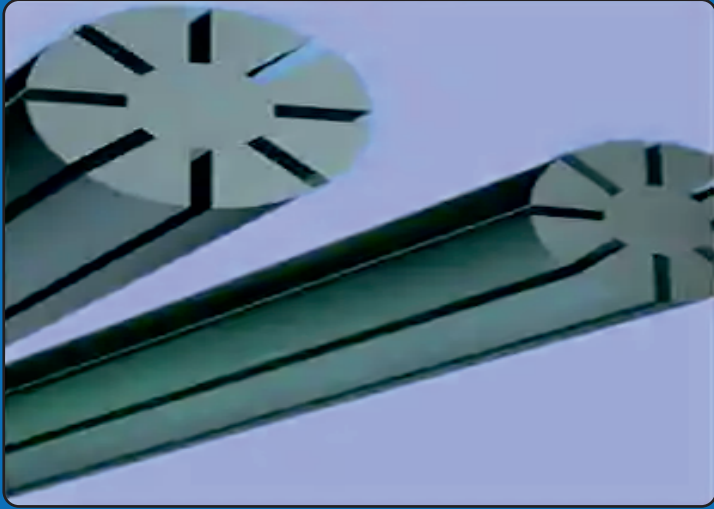
Figure-3	Size		OD (mm)	Id (mm)	L (mm)	Segment	Grove
	6 x 2 x 200	FH	6 ± 0.2	2 ± 0.2	200 ± 2	1	6
	7 x 2 x 200	FH	7 ± 0.2	2 ± 0.2	200 ± 2	1	6
	8 x 2 x 200	FH	8 ± 0.2	3 ± 0.3	200 ± 2	1	6
	9 x 3 x 200	FH	9 ± 0.2	3 ± 0.3	200 ± 2	1	6
	10 x 3 x 200	FH	10 ± 0.3	3 ± 0.3	200 ± 2	1	6
	11 x 3 x 200	FH	11 ± 0.3	3 ± 0.3	200 ± 2	1	6
	12 x 4 x 200	FH	12 ± 0.3	4 ± 0.3	200 ± 2	1	8
	13 x 4 x 200	FH	13 ± 0.3	4 ± 0.3	200 ± 2	1	8
	14 x 5 x 200	FH	14 ± 0.4	5 ± 0.3	200 ± 2	1	8
	15 x 5 x 200	FH	15 ± 0.4	5 ± 0.3	200 ± 2	1	8
	16 x 5 x 200	FH	16 ± 0.4	5 ± 0.3	200 ± 2	1	8
	17 x 5 x 200	FH	17 ± 0.4	5 ± 0.3	200 ± 2	1	8
	18 x 5 x 200	FH	18 ± 0.4	5 ± 0.3	200 ± 2	8	8
	19 x 6 x 200	FH	19 ± 0.4	6 ± 0.3	200 ± 2	8	8
	20 x 10 x 200	FH	20 ± 0.4	10 ± 0.4	200 ± 2	8	8
	21 x 10 x 200	FH	21 ± 0.5	10 ± 0.4	200 ± 2	8	8
	22 x 11 x 200	FH	22 ± 0.5	11 ± 0.5	200 ± 2	8	8
	22 x 6 x 200	FH	22 ± 0.5	6 ± 0.5	200 ± 2	8	8
	23 x 11 x 200	FH	23 ± 0.5	11 ± 0.5	200 ± 2	8	8
	24 x 12 x 200	FH	24 ± 0.5	12 ± 0.5	200 ± 2	8	8
	25 x 12 x 200	FH	25 ± 0.5	12 ± 0.5	200 ± 2	8	8
	26 x 13 x 200	FH	26 ± 0.5	13 ± 0.5	200 ± 2	8	8
	27 x 13 x 200	FH	27 ± 0.5	13 ± 0.5	200 ± 2	8	8
	28 x 14 x 200	FH	28 ± 0.5	14 ± 0.5	200 ± 2	8	8
	30 x 15 x 200	FH	30 ± 0.5	15 ± 0.5	200 ± 2	8	8
	32 x 16 x 200	FH	32 ± 0.5	16 ± 0.5	200 ± 2	8	8
	32 x 13 x 200	FH	32 ± 0.5	13 ± 0.5	200 ± 2	8	8
	34 x 17 x 200	FH	34 ± 0.5	17 ± 0.5	200 ± 2	8	8
	36 x 18 x 200	FH	36 ± 0.5	18 ± 0.5	200 ± 2	8	8
	38 x 19 x 200	FH	38 ± 0.5	19 ± 0.5	200 ± 2	8	8
	40 x 20 x 200	FH	40 ± 0.1	20 ± 0.5	200 ± 2	8	8
	42 x 20 x 200	FH	42 ± 1.0	20 ± 0.5	200 ± 2	8	8
	44 x 22 x 200	FH	44 ± 1.0	22 ± 0.5	200 ± 2	8	8
	46 x 22 x 200	FH	46 ± 1.0	22 ± 0.5	200 ± 2	8	8
	48 x 25 x 200	FH	48 ± 1.2	25 ± 0.5	200 ± 2	8	8
	50 x 25 x 200	FH	50 ± 1.2	25 ± 0.5	200 ± 2	8	8
	55 x 27 x 200	FH	55 ± 1.2	27 ± 0.5	200 ± 2	8	8
	60 x 30 x 200	FH	60 ± 1.2	30 ± 0.5	200 ± 2	8	8
	65 x 30 x 200	FH	65 ± 1.2	30 ± 0.5	200 ± 2	8	8
	70 x 35 x 200	FH	70 ± 1.2	35 ± 0.5	200 ± 2	8	8
	75 x 35 x 200	FH	75 ± 1.5	35 ± 0.5	200 ± 2	8	8
	80 x 40 x 200	FH	80 ± 1.5	40 ± 0.5	200 ± 2	8	8
	85 x 40 x 200	FH	85 ± 1.5	40 ± 0.5	200 ± 2	8	8
	90 x 45 x 200	FH	90 ± 1.5	45 ± 0.5	200 ± 2	8	8
	95 x 45 x 200	FH	95 ± 1.5	45 ± 0.5	200 ± 2	8	8
	100 x 50 x 200	FH	100 ± 1.5	50 ± 0.5	200 ± 2	8	8

Figure-4	Size		OD (mm)	Id (mm)	L (mm)	Segment	Grove
Rectangular Ferrite Rod	45 x 20 x 100	FH	45 ± 0.30	5 ± 0.30	100 ± 2	4	6



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Large impeder cores for inductive pipe welding

