



# Wolferal<sup>®</sup> renowned for quality for over 60 years

## WOLFERAL<sup>®</sup> OILFEED CHIPBREAKER DRILLS

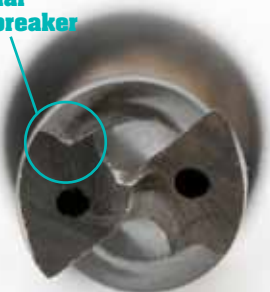
- ✓ Suitable for use with Mist Coolants, Soluble Oils or Air Cooled / Dry Drilling (using compressed air only). Air / Coolant pressure to be at a minimum of 5 BAR.
- ✓ Higher Coolant Pressure will reduce heat generated and extend Tool Life.
- ✓ Interchangeable end of side Feed / Cross Hole Feed by removal or replacement of Grub Screw.
- ✓ Swarf is produced in chip form, via special chipbreakers in the flutes, the air or coolant pressure easily ejecting the chips from the cutting face. Easy to clear from the machine.
- ✓ All European Structural Drill sizes manufactured and held in stock. Other sizes can be manufactured to order.
- ✓ Wolferal Drills have through coolant holes near the point this enabling more coolant at the point of penetration, for possible faster penetration rates.



Specifically designed for the Steel Structural Industry and for use in modern Structural drilling machines (Peddinghaus - Kaltenbach - APS - Voordman) to give:

- Maximum Drilling Performance
- Longer Tool Life between regrinds
- Lower Cost Per Hole
- Reduction in Production Costs

Special Chipbreaker



### BASIC FEED AND SPEED RATE GUIDE For Machines with Through Spindle Coolant

Drill Diam.	PEDDINGHAUS/KALTENBACH				FICEP/VOORDMAN			
	Speed RPM	Feed M/min	Feed mm/rev	Feed/Penetration mm/min	Speed RPM	Feed M/min	Feed mm/rev	Feed/Penetration mm/min
14mm	520	23	0.38	198	455	20	0.30	136
18mm	406	23	0.50	203	354	20	0.40	142
22mm	332	23	0.42	139	289	20	0.45	130
26mm	281	23	0.50	140.5	245	20	0.50	122
33mm	221	23	0.63	139	193	20	0.60	116
36mm	208	23.5	0.67	139	168	19	0.60	101

The above data to be used when drilling 43 A Grade Material. For harder materials such as 50 grades, reduce the drilling speed (rpm) but MAINTAIN THE FEED RATE (mm/rev).

The feed rate determines the speed at which the hole is drilled (Penetration Rate), NOT the rpm. The Chipbreaking action likes to be worked to perform to its real potential.

To further reduce production time, increase Penetration Rate over the basic guide, INCREASE THE FEED RATE ONLY. Pay careful attention to the stresses that may be imposed on the machine. Too high rpm against an inappropriate feed rate will burn out the drill.

Point Angle Suggestions: Steel Structural Materials 168/170\* PIP Point, Stainless Steel and Nimonics 130/135\* Point.

Accurate Point Grinding and Point Thinning is essential to maximise drilling potential, reduce Torsional Stresses and Tool wear to extend life between regrinds and reduce costs.

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# CARDINAL<sup>®</sup> renowned for quality for over 80 years

## CARDINAL<sup>®</sup> OILFEED CHIPBREAKER DRILLS

- ✓ Suitable for use with Mist Coolants, Soluble Oils or Air Cooled/Dry Drilling (using compressed air only). Air/Coolant pressure to be at a minimum of 5 BAR.
- ✓ Higher Coolant Pressure will reduce heat generated and extend Tool Life.
- ✓ Interchangeable end of side Feed/Cross Hole Feed by removal or replacement of Grub Screw.
- ✓ Swarf is produced in chip form, via special chipbreakers in the flutes, the air or coolant pressure easily ejecting the chips from the cutting face. Easy to clear from the machine. via special chipbreakers in the flutes
- ✓ All European Structural Drill sizes manufactured and held in stock. Other sizes can be manufactured to order.
- ✓ Cardinal drills have coolant holes nearer the outside edge of the drill enabling more coolant to be in contact with the outer edge this helps performance before re-sharpening.



Specifically designed for the Steel Structural Industry and for use in modern Structural drilling machines (Peddinghaus - Kaltenbach - APS - Voordman)

- to give: **Maximum Drilling Performance**
- Longer Tool Life between regrinds**
- Lower Cost Per Hole**
- Reduction in Production Costs**

### BASIC FEED AND SPEED RATE GUIDE

For Machines with Through Spindle Coolant Drill

DIAM MM	SPEED	FEED/REV
14mm	450-500	0.20 - 0.25mm
18mm	354-400	0.25 - 0.30mm
22mm	290-330	0.30 - 0.36mm
26mm	240-280	0.36 - 0.40mm
30mm	200-240	0.40 - 0.50mm

The above data to be used when drilling 43 A Grade Material. For harder materials such as 50 grades, reduce the drilling speed (rpm) but MAINTAIN THE FEED RATE (mm/rev).

Special Chipbreaker



The feed rate determines the speed at which the hole is drilled (Penetration Rate), NOT the rpm. The Chipbreaking action likes to be worked to perform to its real potential.

The Swarf should be a straw colour to indicate the drill is not over heating. If the Swarf is blue then the speeds or fee is too high and the drill will blunt quickly.

To further reduce production time, increase Penetration Rate over the basic guide, INCREASE THE FEED RATE ONLY. Pay careful attention to the stresses that may be imposed on the machine. Too high rpm against an inappropriate feed rate will burn out the drill.

Drill Point Angle Suggestions: Steel Structural Materials 168/170\* PIP Point, Stainless Steel and Nimonics 130/135\* Point

Accurate Point Grinding and Point Thinning is essential to maximise drilling potential, reduce Torsional Stresses and Tool wear to extend life between regrinds and reduce costs.

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