



PRAKASH DRILLING MACHINES

Product Catalog

Ver 2024.06

(This catalog can be best viewed as Full Screen)

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Online Presence :



Radial Drill Machines



DC411



R40AA



R40G



R40BA

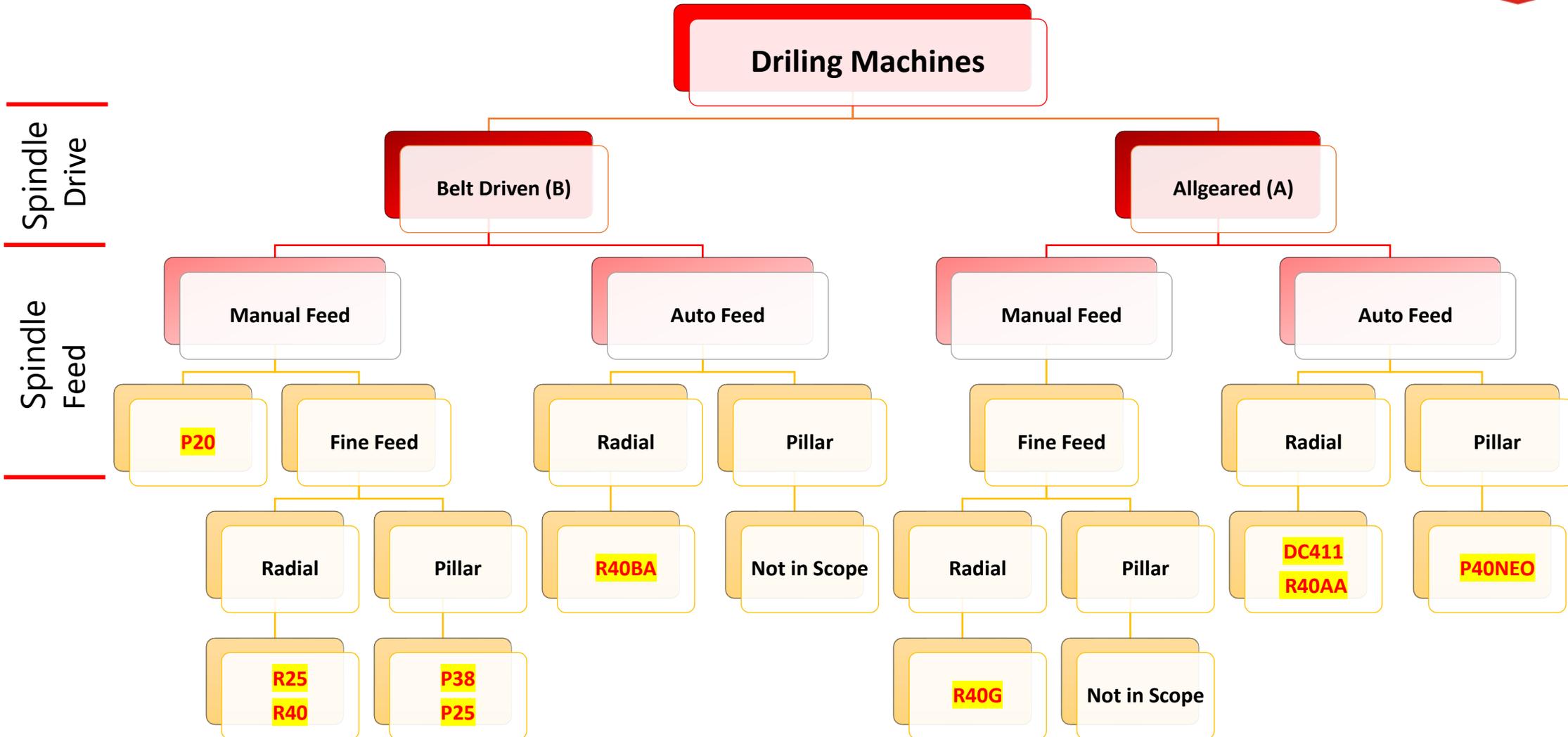


R40



R25

Types and model of machine as per drive and feed mechanisms :



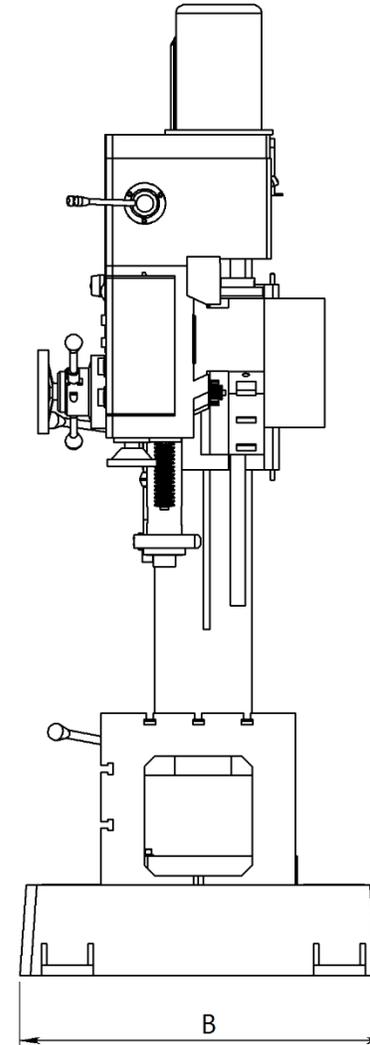
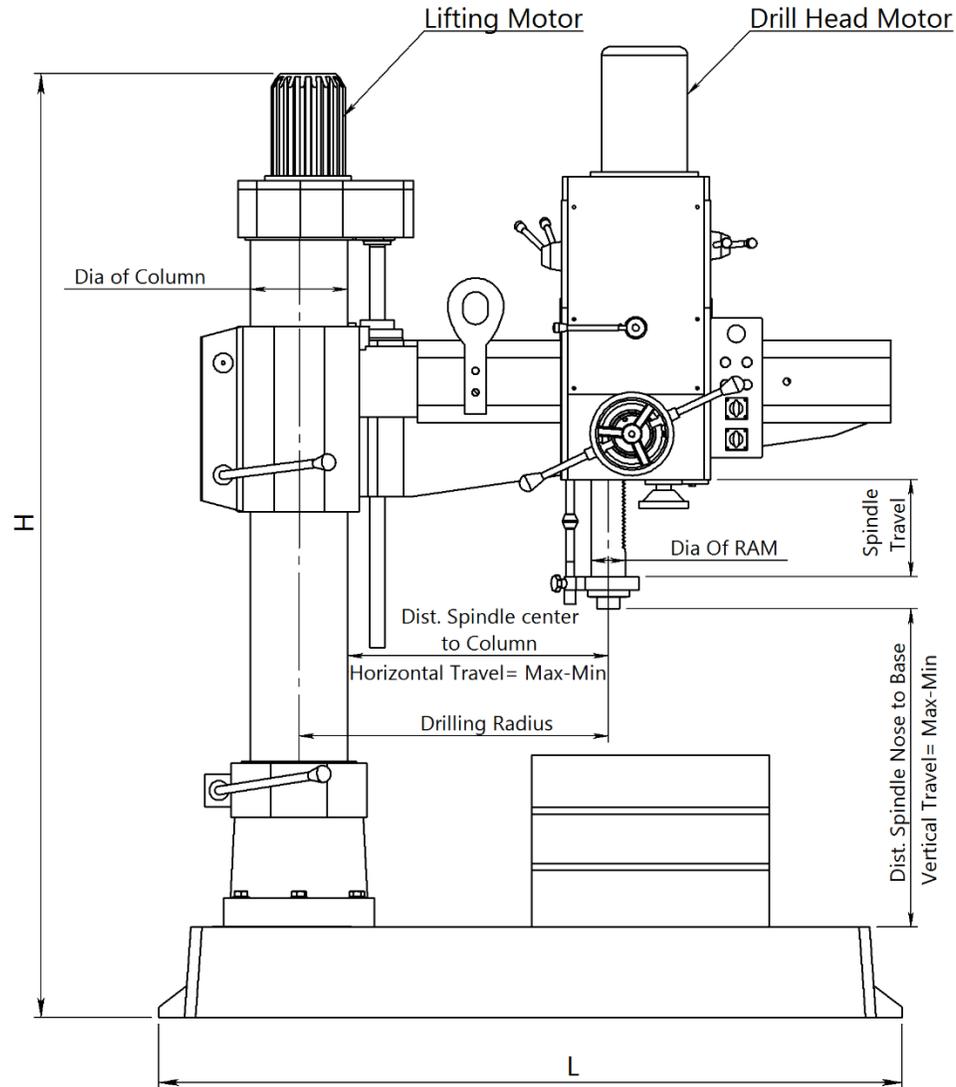
Machine selection chart as per application :



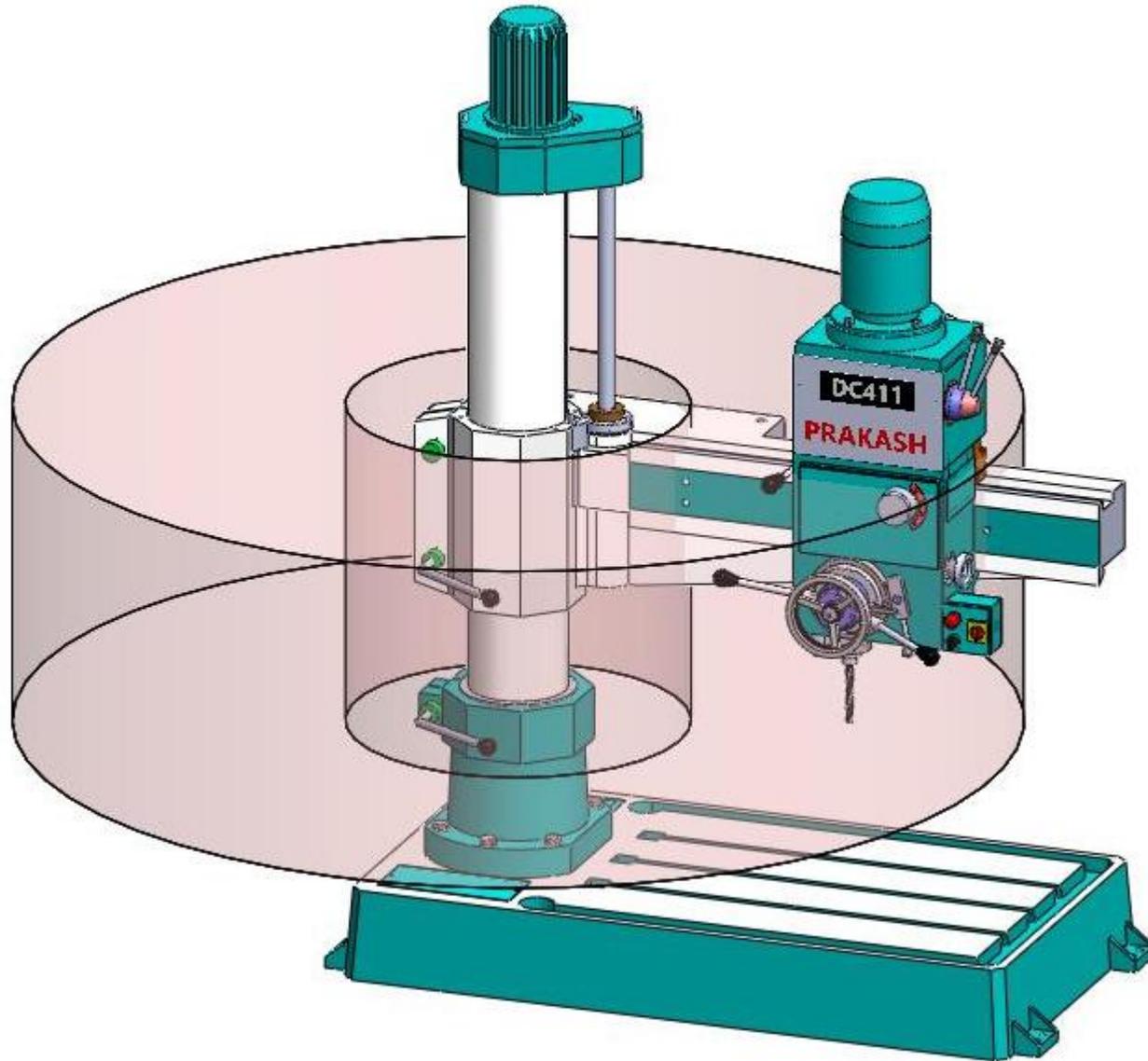
		Drilling Capacity	Workpiece Size	Production Batch Size	No. of sizes of Diff Holes in a Workpiece	Drilling	Tapping	Reaming	Boring
Radial	DC411	42	Large	Mass	More	●	●	●	●
	R40AA	40	Big	Mass	More	●	●	●	●
	R40G	40	Big	Mass	More	●	●	●	
	R40BA	40	Big	Medium	Moderate	●	●	●	●
	R40	40	Big	Medium	Moderate	●	●	●	
	R25	25	Small	Small	Moderate	●	●	●	
Pillar	P40NEO	40	Big	Mass	More	●	●	●	●
	P38	38	Big	Mass	Moderate	●	●	●	
	P25	25	Small	Mass	Moderate	●	●	●	
	P20	20	Small	Mass	Moderate	●	●	●	

This illustration is tentative only. Final selection may depend on actual applications. Please contact us for any technical information required.

How to read specifications of Radial and Pillar Drill Machines



Working Envelop Idea of Radial Drill Machine





PRAKASH DRILLING MACHINES

Radial Drill Machines



Model : **DC411**

42 mm Cap. Double Column Allgeared
Autofeed Radial Drill Machine



Model : **DC411**



42 mm Cap. Double Column Allgeared
Autofeed Radial Drill Machine

Key Features

- 1133 mm Drilling Radius
- 745 Horizontal Travel & 740 Vertical Travel
- 225 mm Column Dia.
- 80 mm Spindle Dia.
- 12 Nos of Speed with Single Speed Motor
- 4 Nos of Autofeed
- Job height of 1000mm approx. can be accommodated.



Model : **DC411**

- Easy maintenance because Main Gearbox and Autofeed gearbox are separate from headstock



Wipers for Dust proof movement of arm at both the end

Arm lock by two side clamping mechanism with single lever. Enabling **RIGID Lock**

- 12 Nos of Spindle Speeds with **SINGLE SPEED MOTOR**
- All speeds are designed for Maximum productivity for all diameters of drilling.
- Main Gearbox is Oil bath (Oil Deep)
- Main Gears are hardened & ground as standard for smooth working and long life.

Lub. Oil Pockets for Smooth Movement of body

4 Nos of Autofeed with near Geometrical Progression for maximum productivity for Drilling, Reaming, Boring

- Hardened & Ground Spindle, RAM, Pinion
- Hardened Gears, Autofeed Worm & Clutch.

Precision spindle travel depth set by Round Dial ring

- Spindle keeps rotating and only feed stops at desired depth to achieve perfect depth and no chance of tool breakage



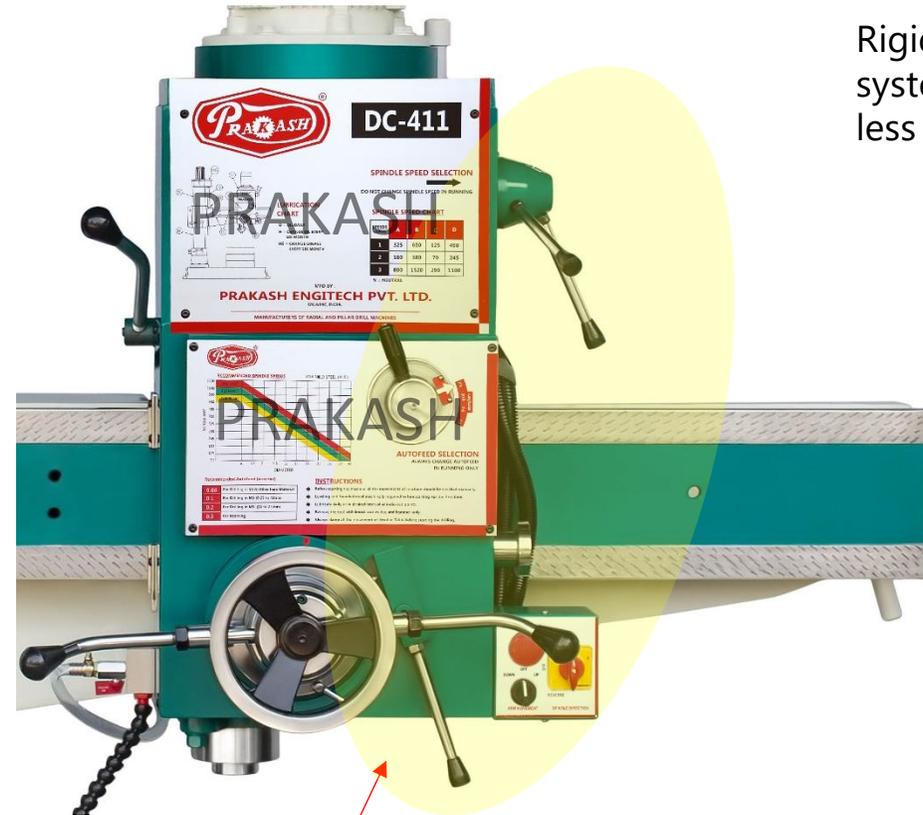
Model : **DC411**

Spindle Speeds :

- All speeds are designed for Maximum productivity for all diameters of drilling.
- Main Gearbox is Oil bath (Oil Deep)

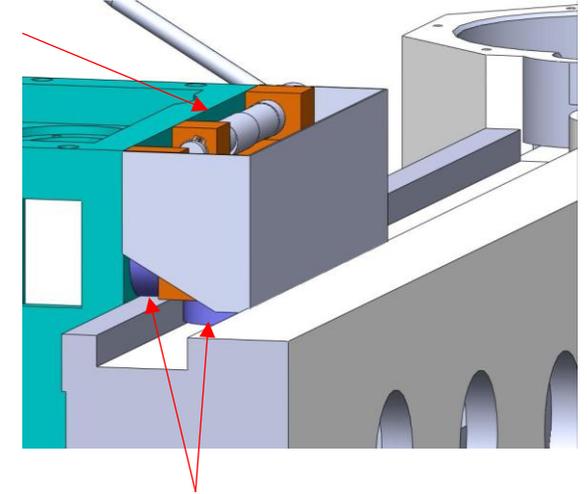
Drilling Dia. - Cutting Speed Relation for Mild Steel with HSS Drill Bit

DC411	Min	Max
Cutting Speed (m/min)		
→	16.5	21
Spindle RPM↓	Dia to be drilled (mm) ↓	
1520	3.46	4.4
1100	4.77	6.08
800	6.57	8.36
650	8.08	10.28
490	10.72	13.64
380	13.82	17.59
325	16.16	20.57
290	18.11	23.05
245	21.44	27.28
180	29.18	37.14
125	42.02	
70		



Ergonomic design with all controls on one side

Rigid head lock system with very less effort

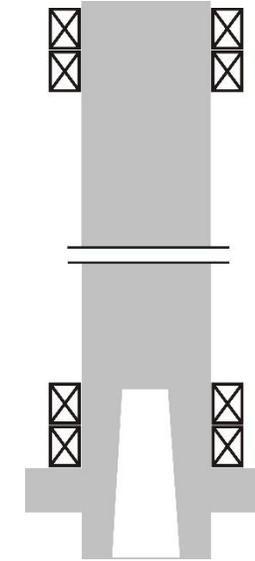
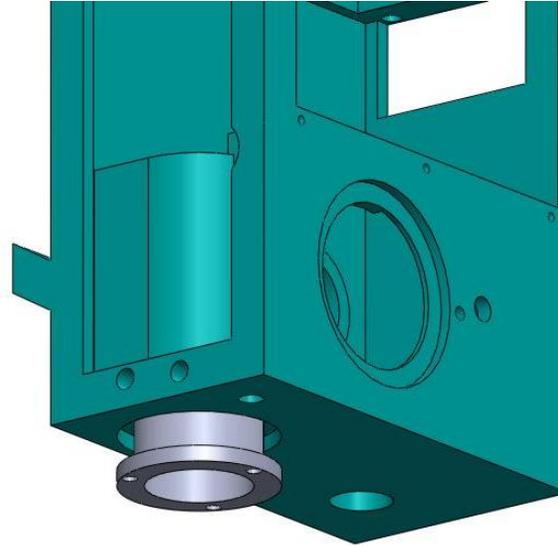
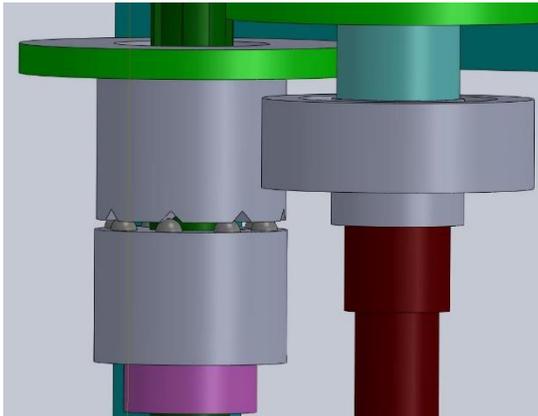


Head stock Supported on guideways by 4 bearings without hassle of keeper plate.

Arm Assembly

- Arm and column are rigidity built with reinforcement ribs to reduce distortion, to give high capacity and long lasting accuracy.
- Safety Limit switches for Arm Lock, Arm up and Arm Down positions.

Model : **DC411**



Autofeed system :

- Overload safety clutch system for Autofeed enabling tool protection and machine protection

BASE

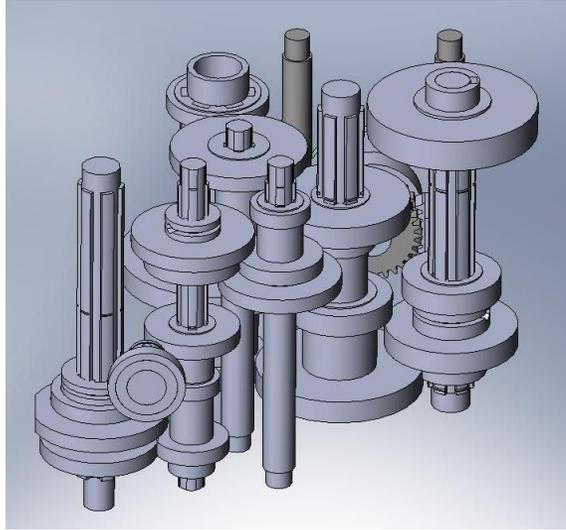
- More wider base for better working area
- In-built coolant tank of 50 litres
- Rigid Box type construction

RAM(Quill) CYLINDER LINER

- Head stock is provided with high grade cast iron cylinder liner like in automobile engines for easy sliding movement of RAM(Quill) and very long life.
- Also it ensures interchangeability when replacing after wear out.

Spindle

- Spindle supported on 4 Nos of Bearings with unique design **combination of Taper, Ball and Thrust Bearings**
- Spindle, RAM(Quill) and pinion are made up of NiCr steel with hardness of 55 HRC
- Spindle safety Limit at Maximum travel and minimum travel

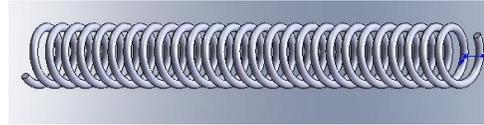


Gears

- All gears in gearbox are made up of NiCr steel with hardness of 50-55 HRC with Thickness of 15 mm
- Main Gears are hardened & ground as standard for smooth working and long life.

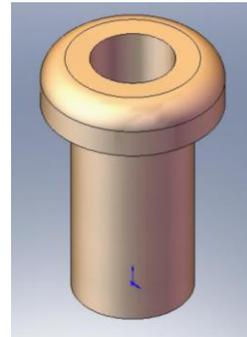
Shaft of Gears

- All shaft made of NiCr alloy steel with Hardness 55 HRC
- All four splines and six splines of shafts are GROUND on spline Grinding Machine



Spring

- Helical Wired spring for spindle retract enables zero maintenance



Lifting Nut

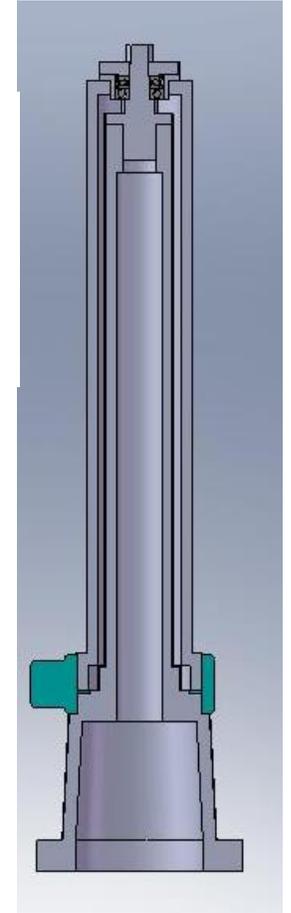
- 4" long Lifting screw nut made up Of bronze metal

Model : **DC411**



Column Assembly

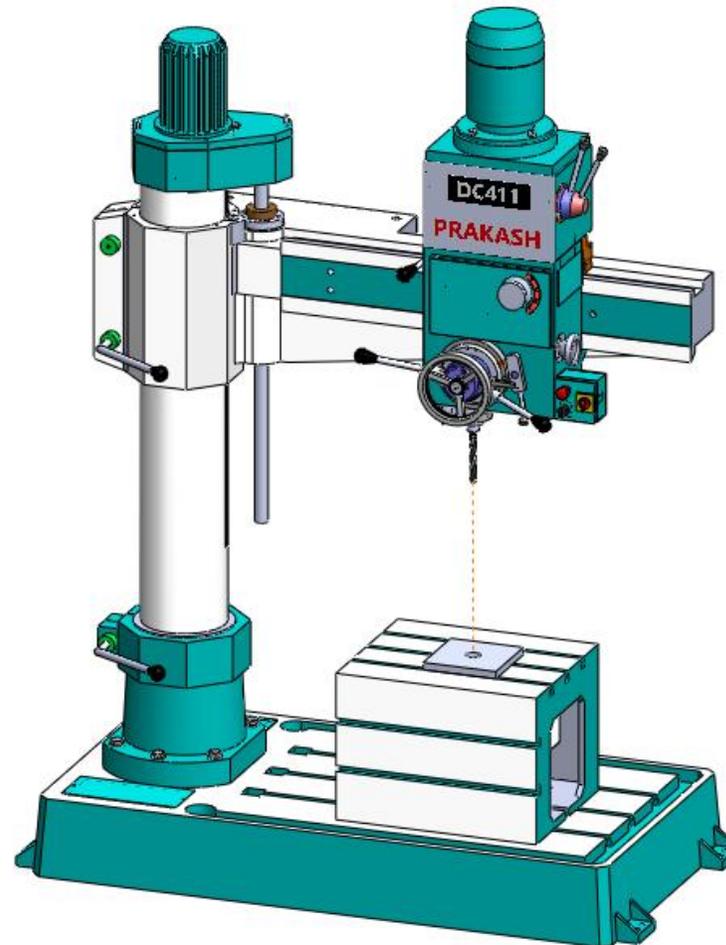
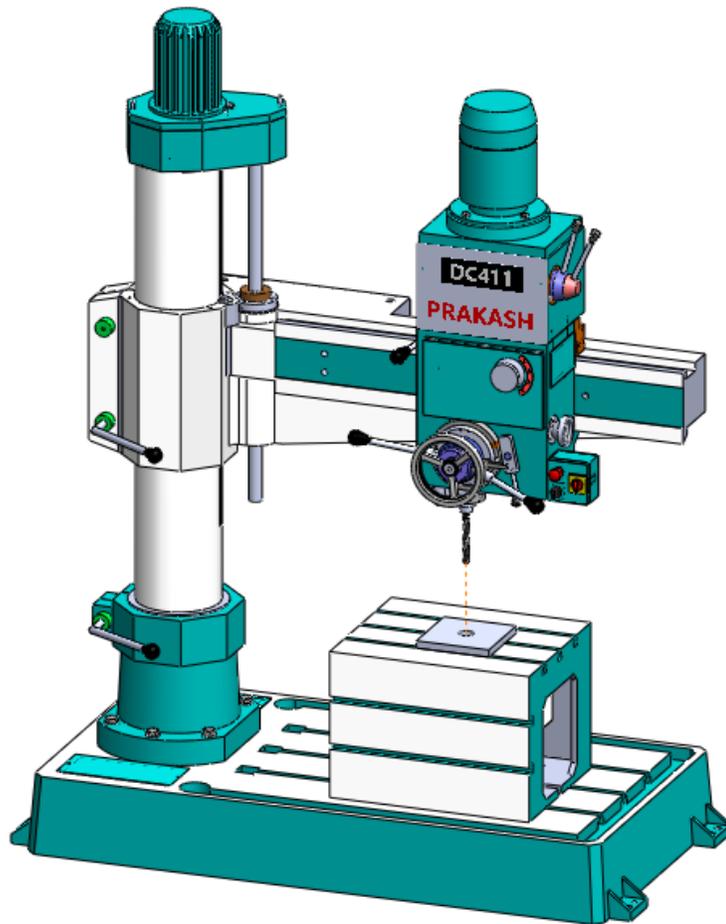
Double column type structure with Dia 225 MM and INSIDE RIBS for more rigidity and smooth movement



Catalog Map



Model : **DC411**



Key Features

- Adjusted centre remains same in DC411 machine even if head is lifted up-down.
- Useful for making pilot holes with small drills and bigger holes with long drill at the same centre.
- Also useful for tapping of holes with short tape at the same centre after drilling.

Standard Accessories

- 2HP & Electric Motor
- Electrical Panel Board
- Coolant Pump & Spout Assembly

Extra Accessories

- Drill Chuck & Arbor
- Keyless Drill Chuck & Arbor
- Work Table
- Drill vice
- Tapping Attachment (Mechanical)

Model : **DC411**



Specifications

		Description	DC -411
CAPACITY	Drilling in M.S.		42(1 5/8")
	Drilling in C.I.		50
	Rough Boring in M.S.		60
	Tapping in M.S.		25
DRILL HEAD	Spindle Taper		MT - 4
	Spindle Travel		225
	Spindle Speed (RPM x Steps)		12 Steps 70, 125, 180, 245, 290, 325, 380, 490,650, 800, 1100, 1520
	Diameter of Ram (quill)		80
	Spindle Autofeed Ranges (mm/rev.)		4 Steps 0.06, 0.12, 0.20, 0.30

		Description	DC411
WORKING RANGE	Max/Min Dist. Spindle nose base		1135/395
	Vertical Travel of Arm		740
	Max/Min Dist. Spindle centre to column		1020/275
	Horizontal Travel of Arm		745
	Max. Drilling Radius		1133
	Machine Measurement (LxBxH)		1600 x 850 x 2190
	Diameter of Column		225
	Work Table		550 x 450 x 400
	Coolant Tank		770 x 450 x 400 (50 Litres)
	Working Range (on Base)		1100 x 800
POWER	Drill Head Motor		2HP (1.5 KW) 960 rpm (Single Speed Motor) { Optional : 3HP/960 RPM }
	Lifting Motor (LxBxH)		1HP (0.75 KW) 960 RPM

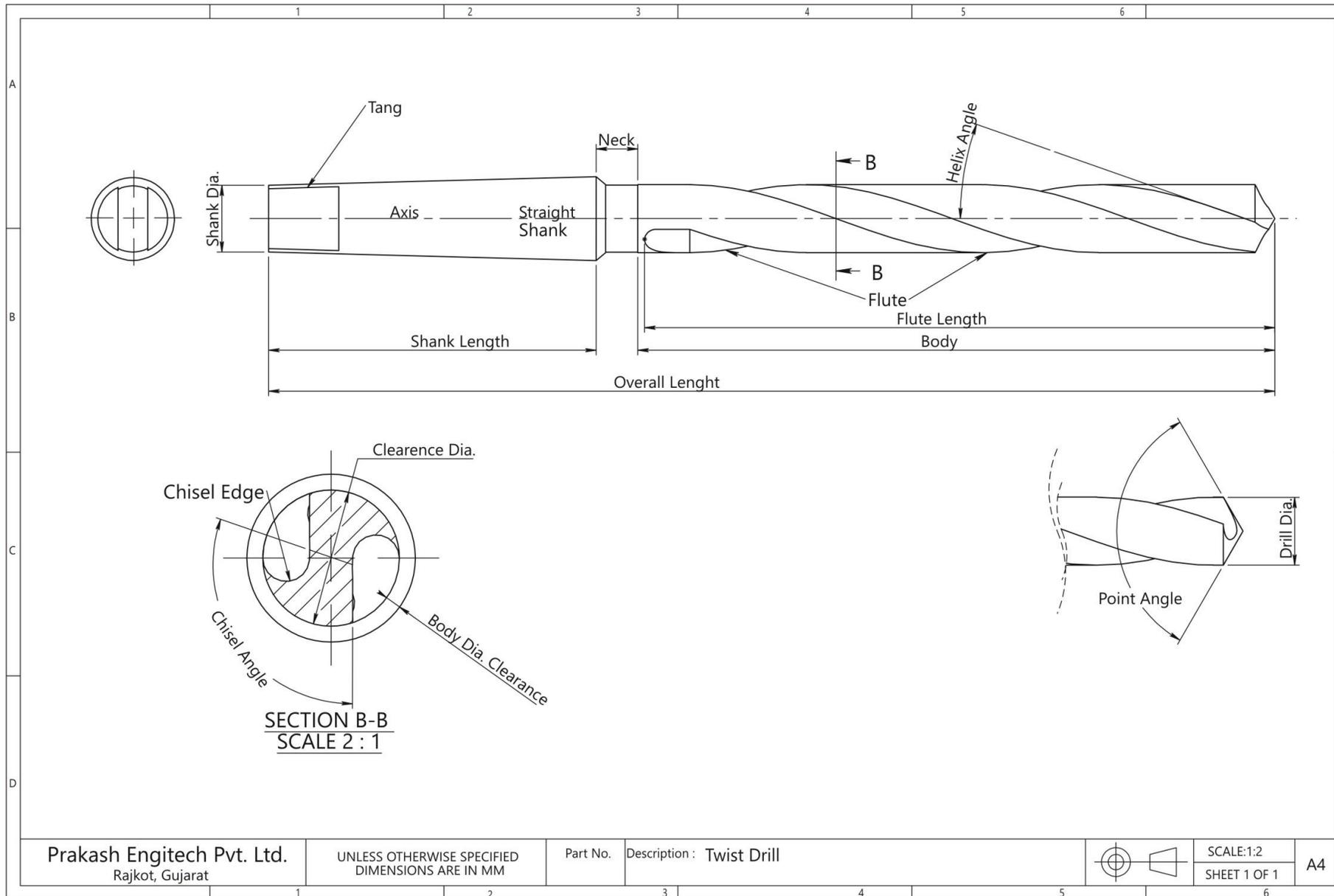


PRAKASH DRILLING MACHINES

General Drilling Data



Twist Drill Nomenclature





Nominal Dia		B.S.W.		B.S.P. & B.S.P.T.		
Fractional	Major Min Dia Inch	TPI	Drill Size	Major Min Dia	TPI	Drill Size
1/16"	0.0635	60	no.55	-	-	-
3/32"	0.095	48	no.48	-	-	-
1/8"	0.1262	40	2.55m	0.383	28	8.75m
5/32"	0.1576	32	3.10m	-	-	-
3/16"	0.1891	24	3.7m	-	-	-
7/32"	0.2204	24	11/64"	-	-	-
1/4"	0.2518	20	5.1m	0.518	19	11.8m
9/32"	0.283	20	no.1	-	-	-
5/16"	0.3143	18	6.5m	-	-	-
3/8"	0.377	16	5/16"	0.656	19	15.25m
7/16"	0.4397	14	9.25m	-	-	-
1/2"	0.5024	12	10.5m	0.825	14	3/4"
9/16"	0.5649	12	12.1m	-	-	-
5/8"	0.6274	11	13.5m	0.902	14	53/64"
11/16"	0.6899	11	19/32"	-	-	-
3/4"	0.7526	10	41/64"	1.041	14	24.5m
13/16"	0.8151	10	18.25m	-	-	-
7/8"	0.8776	9	19.25m	1.189	14	28.25m
15/16"	0.9401	9	21m	-	-	-
1"	1.0028	8	22m	1.309	11	30.75m
1.1/8"	1.128	7	24.75m	-	-	-
1.1/4"	1.253	7	1.3/32"	1.65	11	39.5m
1.3/8"	1.3782	6	1.3/16"	-	-	-
1.1/2"	1.5032	6	33.5m	1.882	11	1.25/32"
1.5/8"	1.6286	5	1.27/64"	-	-	-
1.3/4"	1.7536	5	39m	2.116	11	51.5m
1.7/8"	1.8788	4.5	1.21/32"	-	-	-
2"	1.0038	4.5	44.5m	2.343	11	2.1/4"

Drilling Size For Tapping

British Standard Whitworth
Form Threads 55° Inc.
Angle





Drilling Size For Tapping

Metric Form Threads

Nominal Dia. M.M.	SYSTEM INTERNATIONAL		
	Major Min. Dia.	Pitch	Drill Size
6	0.2378	1	5m
7	0.2772	1	6m
8	0.3168	1.25	17/64"
9	0.3561	1.25	7.7m
10	0.3957	1.5	8.4m
11	0.4351	1.5	9.5m
12	0.4746	1.75	10.25m
13	-	1.75	11.25m
14	0.5534	2	12m
16	0.6321	2	35/64"
18	0.7113	2.5	39/64"
20	0.79	2.5	11/16"
22	0.8687	2.5	49/64"
24	0.9477	3	21m
27	1.0658	3	24m
30	1.1841	3.5	26.5m
33	1.3022	3.5	29.5m
36	1.4205	4	32m
39	1.5386	4	35m
42	1.6566	4.5	37.5m
45	1.775	4.5	40.5m
48	1.8935	5	43m
52	2.0508	5	47m
56	2.2085	5.5	50.5m
60	2.366	5.5	54.5m