Ingersoll Rand

P33N PRECISION DRILLS

Ergonomics, Power and Flexibility for Multi-Task Work Environments



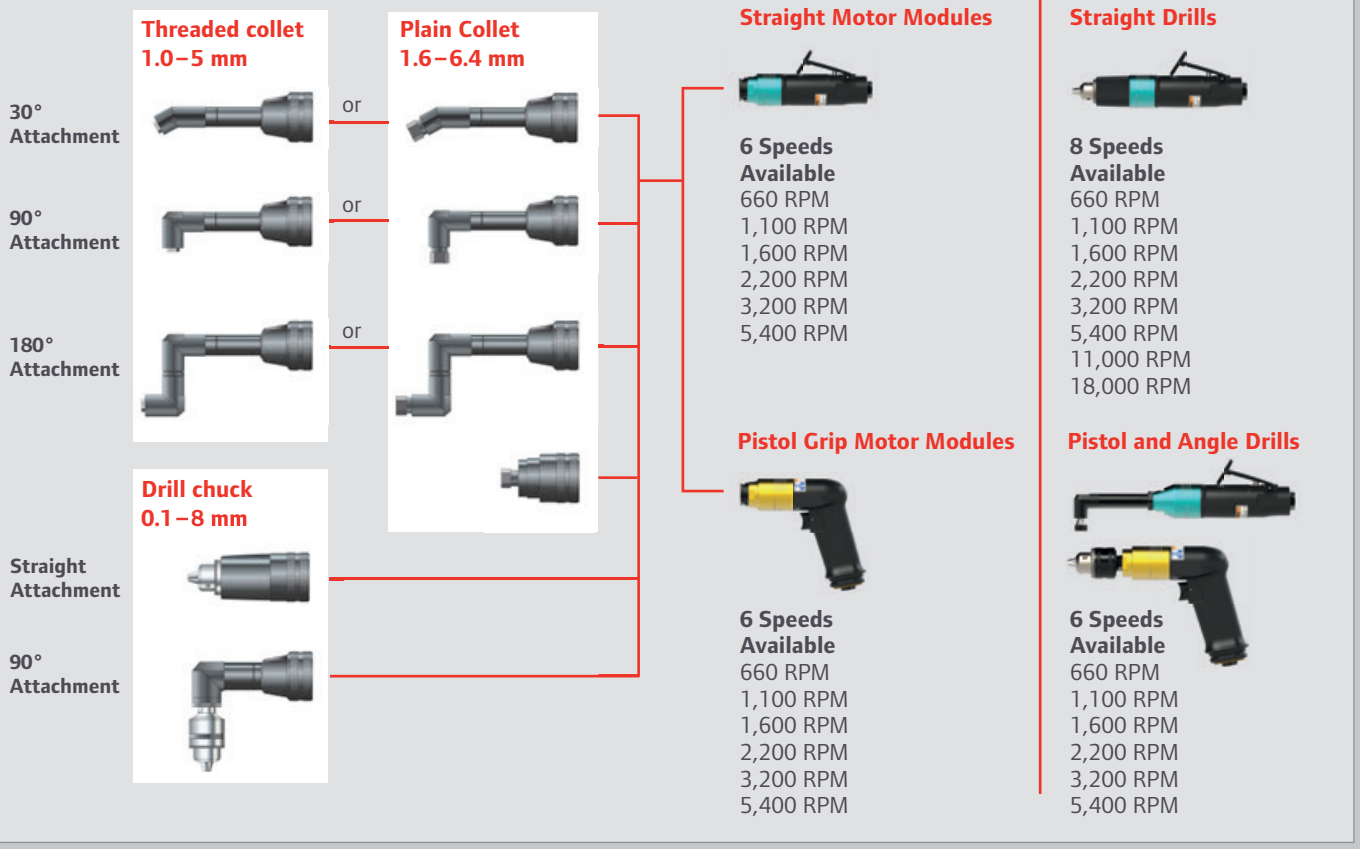
REAL TOOLS FOR REAL WORK.℠

P33N Series The New Generation of Modular Drills

When Engineering know-how, state of the art design and ergonomics meet along with quality and new requirements of flexible production: Ingersoll Rand provides you with its latest P33N generation of precision drills.

The Ingersoll Rand P33N drill range, originates as an evolution from successful P33 drill range, providing the same ideal flexibility, power and durability but with a better tool identification as well as an outstanding new ergonomics.

P33N Configurations



Flexibility and Interchangeability

- One motor 330W (0.44 hp).
- Pistol, straight or Angle version
- Wide range of speeds available, from 660 to 18,000 rpms.
- 30°, 90°, 180° angle heads
- R33 attachments are fully compatible with P33N Modular drills.
- P33N is the ideal tool for the multi-task drilling environment, it matches operator needs for accuracy and precise drilling operations according to material and application requirements.

Operator Comfort and Ergonomics

- Lube free motor for a clean working environment.
- Soft touch housing for a more ergonomic grip.
- Quick change motor and attachment to provide end user with fast changeover.

Economic Effectiveness

- Thanks to its flexibility, P33N modular air drills remain your best choice to reduce investment in motor units and attachments
- P33N range share same motor and gears to reduce inventory cost.

Adaptable to Your Application.

From aircraft manufacturing to aerospace maintenance, P33N is designed to offer flexibility and to answer for requirements of precise drilling and reaming of high technology materials for the aerospace industry.

Aircraft assembly
Wings, Cockpit, Fuselage

Helicopter assembly
Tail boom, Cabin door, Cockpit flooring

Aerospace maintenance
Fuselage replacement, Wings repair, Nacelle servicing







Drilling Selection Guide

Material	Velocity m/min	Hole Diameter 1/16" 1.5mm	1/8" 3mm	3/16" 5mm	1/4" 6mm	5/16" 8mm	3/8" 9.5mm	7/16" 11mm
Steel Alloy (300-400 Brinnel)	5-10	1,250-1,800	600-900	400-600	300-450	250-350	200-300	175-250
	Tool recommended	011-016	006	006	//	//	//	//
Cast Iron (med.-hard)	20-30	4,300-6,000	2,100-3,000	1,400-2,000	1,000-1,500	850-1,200	700-1,000	600-900
	Tool recommended	054	022-032	016-022	011-016	011	006-011	006
Mild Steel (0.2-0.3 Carbon)	25-35	5,000-6,700	2,500-3,400	1,600-2,300	1,200-1,700	950-1,350	800-1,150	700-1,000
	Tool recommended	054	032	016-022	016	011	011	011
Cast Iron (soft) / Plastic	30-45	6,000-9,000	3,000-4,500	2,000-3,000	1,500-2,300	1,200-1,800	1,000-1,530	900-1,300
	Tool recommended	054	032	022	016-022	016	011	011
Aluminum / Brass / Bronze	60-100	12,000-18,000	6,000-9,000	4,000-6,000	3,000-4,500	2,400-3,700	2,000-3,000	1,700-2,600
	Tool recommended	110	054	054	032	032	022	022
Composite	50-100	6,500-26,000	5,400-6,500	3,000-6,500	2,500-4,500	2,000-3,700	1,700-3,700	1,600-2,200
	Tool recommended	110-180	054	032	032	022-032	022-032	016-022
Fiberglass / Wood	90-150	18,000-25,000	9,000-12,000	6,000-8,200	4,600-6,100	3,700-4,900	3,000-4,000	2,600-3,500
	Tool recommended	180	110	054	054	032	032	032

Product description

MODULAR
P33N006-DMSL-B
1 2 3 4 5

1 **New generation of precision drills**
P33N

2 **Speed**
006, 011, 016, 022, 032, 054

3 **Tool shape**
P : Pistol
D : Straight

4 **Modular motor**
MSL

5 **Tool start**
blank : lever start
B : button start*

NON MODULAR
P33N006-PSL
1 2 3

1 **New generation of precision drills**
P33N

2 **Speed**
006, 011, 016, 022, 032, 054, 110**, 180**

3 **Tool shape**
PSL : Pistol
DSL : Straight

NON MODULAR ANGLE
P33N032-DASL090P45
1 2 3 4 5

1 **New generation of precision drills**
P33N

2 **Speed**
006, 011, 016, 022, 032, 054

3 **Tool shape**
DASL : Angle

4 **Head configurations**
030 : 30°
090 : 90°
180 : 180°

5 **Collet thread size**
P45 : 9/32" x 40
P64 : for plain collet

ATTACHMENT
R33M090D17P45
1 2 3 4

1 **Attachment for Modular drills**
R33

2 **Head orientation**
M000 : straight
M030 : 30°
M090 : 90°
M180 : 180°

3 **Angle head diameter**
blank : straight head
D17 : 17mm
D25 : 25mm

4 **Collet thread size**
P45 : 9/32" x 40
P64 : for plain collet
F1/4 : ¼"- 28 UNF
F5/16 : 5/16"- 24 UNF
F80 : M11x1
P80 : 8mm drill chuck
M80 : for plain collet

* *only available for 3,200 rpm and 5,400 rpm tools*
** *only available on straight shape*

KEY FEATURES

NEW

Speed color coding

All tools have a speed color identification. This provides quick identification and then avoid mistakes when comes select the tool in user toolbox.

P33N006-PSL



Modular bevel gear construction

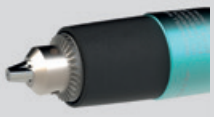
All gearing in the angle head is mounted on ball bearings to ensure perfect alignment and low noise level. One bevel gear is common throughout all heads to reduce spares inventory and to simplify repair.

High efficiency gearing

The precision gearing is mounted on precision ball bearings and high resistance bushing in composite material which ensure low vibration and smooth running.

Easy maintenance

Spare part tune up kits is available for simple and efficient maintenance of each tool. For a cost-effective management of a large number of tools, both modular and non-modular P33N drills share 95% of their spare parts.



Chuck guard on DSL & PSL model*

Prevent injuries on user's fingers and offer better support.

**Not provided on 006 and 011 model*



Quick change mechanism

The patented mechanism for attaching and orienting the drill heads is very safe and convenient to use. Attachment change is done in 3 seconds. All new modular drills are compatible with R33 attachments.

Black	18,000 rpm
Brown	11,000 rpm
Orange	5,400 rpm
Blue	3,200 rpm
Grey	2,200 rpm
White	1,600 rpm
Green	1,100 rpm
Yellow	660 rpm

NEW

Variable speed control with safety lever

All straight motor modules have a sensitive and progressive throttle for precise control (control by lever as standard). The 3,200 and 5,400 rpm motor modules are also available with button throttle control.



P33N032-DMSL

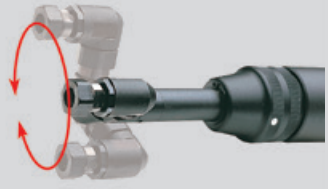
Lightweight lube-free motor and vanes

High power, high torque air motor. Identical to all models for reduced spares inventory and easy maintenance.

NEW

Ergonomics housing

Softouch PU Paint prevent from cold metal housing and reduces vibrations while securing grip with minimal grip force. Straight tool has an average diameter of 36 mm which provides optimized size for cylindrical grip.



Angle head with 360° rotating head mechanism

Modular drills, PMSL and DMSL allows the head to be located at any of 18 positions, at 20° intervals. Non modular drills DASL, are available in 3 angle configurations : 30°, 90° and 180°. Each angle head can be easily oriented through 360°



Drilling Attachment Spindles

The drilling attachments are available with plain collet,threaded collet or chuck*.

**Only on R33 attachments. Not available on DASL models.*

Air Drills

Precision Drills | Pistol

	Ref.	1 min rpm	MAX Nm rpm	kg	mm	MAX mm	mm	MAX l/s
	TRIGGER START							
	**P33N**006-PSL	660	16.0	0.95	209	10.0	20	10.0
	P33N011-PSL	1,100	9.5	0.95	209	10.0	20	10.0
	P33N016-PSL	1,600	6.8	0.95	209	8.0	20	10.0
	P33N022-PSL	2,200	4.5	0.80	194	8.0	20	10.0
	P33N032-PSL	3,200	3.2	0.80	194	6.0	20	10.0
	P33N054-PSL	5,400	1.9	0.80	194	6.0	20	10.0

Precision Drills | Inline

	Ref.	1 min rpm	MAX Nm rpm	kg	mm	MAX mm	mm	MAX l/s
	LEVER TO START							
	**P33N**006-DSL	660	16.0	0.78	235	10.0	20	10.0
	P33N011-DSL	1,100	9.5	0.78	235	10.0	20	10.0
	P33N016-DSL	1,600	6.8	0.78	227	8.0	20	10.0
	P33N022-DSL	2,200	4.5	0.65	212	8.0	20	10.0
	P33N032-DSL	3,200	3.2	0.64	212	6.0	20	10.0
	P33N054-DSL	5,400	1.9	0.65	212	6.0	20	10.0
	P33N110-DSL	11,000	0.9	0.72	227	6.0	20	10.0
	P33N180-DSL	18,000	0.6	0.63	212	6.0	20	10.0

Precision Drills | Angle

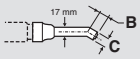
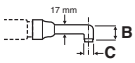
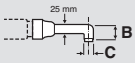
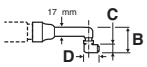
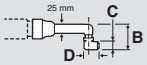
	Ref.	1 min rpm	MAX Nm rpm	kg	mm	MAX mm	mm	MAX l/s
	WITH 30° ANGLE HEAD							
	**P33N**006-DASL030P45	660	16.0	0.80	284	5	20	10.0
	P33N006-DASL030P64	660	16.0	0.81	296	6.4	32	10.0
	P33N011-DASL030P45	1,100	9.5	0.80	284	5	20	10.0
	P33N011-DASL030P64	1,100	9.5	0.81	296	6.4	32	10.0
	P33N016-DASL030P45	1,600	6.8	0.80	284	5	20	10.0
	P33N016-DASL030P64	1,600	6.8	0.81	296	6.4	32	10.0
	P33N022-DASL030P45	2,200	4.5	0.69	269	5	20	10.0
	P33N022-DASL030P64	2,200	4.5	0.70	281	6.4	32	10.0
	P33N032-DASL030P45	3,200	3.2	0.69	269	5	20	10.0
	P33N032-DASL030P64	3,200	3.2	0.70	281	6.4	32	10.0
	P33N054-DASL030P45	5,400	1.9	0.69	269	5	20	10.0
	P33N054-DASL030P64	5,400	1.9	0.70	281	6.4	32	10.0
	WITH 90° ANGLE HEAD							
	**P33N**006-DASL090P45	660	16.0	0.80	277	5	31	10.0
	P33N006-DASL090P64	660	16.0	0.81	277	6.4	43	10.0
	P33N011-DASL090P45	1,100	9.5	0.80	277	5	31	10.0
	P33N011-DASL090P64	1,100	9.5	0.81	277	6.4	43	10.0
	P33N016-DASL090P45	1,600	6.8	0.80	277	5	31	10.0
	P33N016-DASL090P64	1,600	6.8	0.81	277	6.4	43	10.0
	P33N022-DASL090P45	2,200	4.5	0.70	262	5	31	10.0
	P33N022-DASL090P64	2,200	4.5	0.71	262	6.4	43	10.0
	P33N032-DASL090P45	3,200	3.2	0.69	262	5	31	10.0
	P33N032-DASL090P64	3,200	3.2	0.70	262	6.4	43	10.0
	P33N054-DASL090P45	5,400	1.9	0.69	262	5	31	10.0
	P33N054-DASL090P64	5,400	1.9	0.70	262	6.4	43	10.0
	WITH 180° ANGLE HEAD							
	**P33N**006-DASL180P45	660	16.0	0.86	292	5	63	10.0
	P33N006-DASL180P64	660	16.0	0.88	304	6.4	63	10.0
	P33N011-DASL180P45	1,100	9.5	0.86	292	5	63	10.0
	P33N011-DASL180P64	1,100	9.5	0.88	304	6.4	63	10.0
	P33N016-DASL180P45	1,600	6.8	0.86	292	5	63	10.0
	P33N016-DASL180P64	1,600	6.8	0.88	304	6.4	63	10.0
	P33N022-DASL180P45	2,200	4.5	0.76	277	5	63	10.0
	P33N022-DASL180P64	2,200	4.5	0.78	289	6.4	63	10.0
	P33N032-DASL180P45	3,200	3.2	0.76	277	5	63	10.0
	P33N032-DASL180P64	3,200	3.2	0.78	289	6.4	63	10.0
	P33N054-DASL180P45	5,400	1.9	0.76	277	5	63	10.0
	P33N054-DASL180P64	5,400	1.9	0.78	289	6.4	63	10.0

Specifications at 6.2 bar (90 psi)

Precision Drills | Motor Modules

	Ref.	1 min rpm	MAX Nm rpm	kg	mm	mm	MAX l/s
	BUTTON CONTROL						
	**P33N**032-DMSL-B	3,200	3.2	0.53	164	20	10.0
	P33N054-DMSL-B	5,400	1.9	0.53	164	20	10.0
	LEVER CONTROL						
	P33N006-DMSL	660	16	0.63	179	20	10.0
	P33N011-DMSL	1,100	9.5	0.63	179	20	10.0
	P33N016-DMSL	1,600	6.8	0.63	179	20	10.0
	P33N022-DMSL	2,200	4.5	0.53	164	20	10.0
	P33N032-DMSL	3,200	3.2	0.53	164	20	10.0
	P33N054-DMSL	5,400	1.9	0.53	164	20	10.0
	TRIGGER START						
	**P33N**006-PMSL	660	16.0	0.82	161	20	10.0
	P33N011-PMSL	1,100	9.5	0.82	161	20	10.0
	P33N016-PMSL	1,600	6.8	0.82	161	20	10.0
	P33N022-PMSL	2,200	4.5	0.71	146	20	10.0
	P33N032-PMSL	3,200	3.2	0.70	146	20	10.0
	P33N054-PMSL	5,400	1.9	0.70	146	20	10.0

Precision Drills | Modular Drill Attachments

	Orientation	Ref.	CCN	MAX	A	B mm	C mm	D mm	kg
	straight	R33M000F1/4	53447702	8.0	A + 40	—	—	—	0.16
		R33M000F5/16	53447710	8.0	A + 40	—	—	—	0.16
		R33M000P64	53444592	6.4	A + 42	—	—	—	0.16
		R33M000M80	53444584	8.0	A + 81	—	—	—	0.38
	30°	R33M030D17F1/4	53447579	6.4	A + 118	24.0	18	—	0.24
		R33M030D17P45	53430575	5.0	A + 112	19.5	18	—	0.24
		R33M030D17P64	53430609	6.4	A + 124	31.5	18	—	0.26
	90°	R33M090D17F1/4	53447553	6.4	A + 105	36.0	18	—	0.24
		R33M090D17P45	53430567	5.0	A + 105	36.0	18	—	0.24
		R33M090D17P64	53430591	6.4	A + 105	43.5	18	—	0.26
	90°	R33M090D25F1/4	53447140	8.0	A + 78	44.0	25	—	0.34
		R33M090D25F5/16	53447165	8.0	A + 78	44.0	25	—	0.34
		R33M090D25F80	53430641	8.0	A + 78	50.0	25	—	0.36
		R33M090D25M80	53430633	8.0	A + 81	98.5	30	—	0.54
		R33M090D25P80	53430625	8.0	A + 78	54.0	25	—	0.39
	180°	R33M180D17F1/4	53447496	6.4	A + 124	64.0	18	36	0.30
		R33M180D17P45	53430583	5.0	A + 120	64.0	18	32	0.30
		R33M180D17P64	53430617	6.4	A + 131	64.0	18	44	0.32
	180°	R33M180D25F1/4	53447124	8.0	A + 99	87.5	25	44	0.40
		R33M180D25F5/16	53447157	8.0	A + 99	87.5	25	44	0.40
		R33M180D25P80	53447116	8.0	A + 109	87.5	25	54	0.45

Precision Drills | Accessories

Collets for P33 angle drills and R33 heads

THREADED COLLETS FOR P45 HEADS

Ø mm	Ref. No	CCN
1.0	120071	04371894
1.5	120072	04371902
2.0	120073	04371910
2.2	120102	04371928
2.4	120106	04371936
2.5	120074	04371944
3.0	120075	04371951
3.1	120105	04371969
3.2	120109	04374336
3.25	120104	04371985
3.3	120113	04370540
3.5	120076	04372009
3.6	123991	04372017
3.7	121552	04372025
3.8	125783	04372033
3.9	120107	04372041
4.0	120077	04372058
4.1	120103	04362232
4.2	120110	04370557
4.5	120078	04372082
4.6	120111	04372090
4.7	125784	04372108
4.8	120112	04362281
4.9	121553	04370565
5.0	120079	04372132

PLAIN COLLETS FOR P64 HEADS

Ø mm	Ref. No	CCN
1.6	128250	04372140
1.8	128251	04372157
2.0	128252	04372165
2.2	128253	04372173
2.4	128254	04372181
2.6	128255	04372199
2.8	128256	04372207
3.0	128257	04372215
3.2	128258	04370573
3.4	128259	04372231
3.6	128260	04372249
3.8	128261	04372256
4.0	128262	04372264
4.2	128263	04370581
4.4	128264	04372280
4.6	128265	04372298
4.8	128266	04370599
5.0	128267	04372314
5.2	128268	04372322
5.4	128269	04372330
5.6	128270	04372348
5.8	128271	04372355
6.0	128272	04372363
6.2	128273	04372371
6.4	128274	04372389

Accessories



Suspension Ring for Straight Drill
Ref. No.128065, CCN 53490207



Exhaust Pipe Kit
Ref. No. 131898, CCN 53446563
(Uniquely Optional for P33N Straight)



Safety Handle
Ref. No. 131 899, CCN 53446571
(Uniquely Optional for P33N Straight)



Drill chuck
Ref. No. 117269, CCN 04363081
Capacity 6 mm - 3/8"-24UNF
Ref. No. CM-115313, CCN 04372793
Capacity 8 mm - 3/8"-24UNF
Ref. No. 117311, CCN 04372801
Capacity 10 mm - 3/8"-24UNF



Spanner
Ref. No. 120143, CCN 53444022
16 mm across flats
Ref. No. 121489, CCN 53449591
Double sided (closed) : 8 mm and 9 mm

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