

Portable drilling precision for the aerospace industry

More automation in your drilling operations

In most traditional industries, close tolerance holes can be successfully drilled with a CNC machine. However, because a significant number of aircraft components are too large, too complex and too irregularly shaped to be taken to a machining center, portable drill motors must be taken to the plane itself. The wide range of hole sizes, the critically close tolerances required of those holes and the variety of materials used in the aerospace manufacturing industry demand that these portable precision drill motors be available with a broad range of cutter speeds and feed rate combinations.

As a rule of thumb Positive Feed Drills are used for holes larger than 4.8 mm / 3/16". These drills are significantly more versatile than CNC machinery but still more precise and productive than manual drills. Due to the torques generated when drilling large holes, it is not ergonomic, productive or safe to drill holes of this size manually.

PFD1500 – a useful, versatile drill

PFD1500 is a Positive Feed Drill in Right Angle execution, which is suitable for drilling critical and close tolerance holes with medium to large diameters. This drill is used all around the aircraft but is particularly useful in stacked materials and in assembly of structural parts, such as

fuselage, wing box, wing box assembly, pylon, landing gear and rudder. It is approved for use in all materials typically found in aerospace manufacturing, such as titanium, CFRP, aluminum and inco-nel.



- Governed air motor for consistent power under load, which significantly reduces cycle time.
- Double needle bearings for both feed- and drive gears ensures outstanding service life.
- The modular concept allows quick set-up, configuration and maintenance.
- The overload clutch ensures safe operation.
- The small angle head radius allows the tool to be used also in the most cramped locations around the air-plane.
- The integrated air logic controls the tool from one easily accessible button set.
- Low air consumption reduces cost for energy.
- The rapid advance option reduces cycle time.

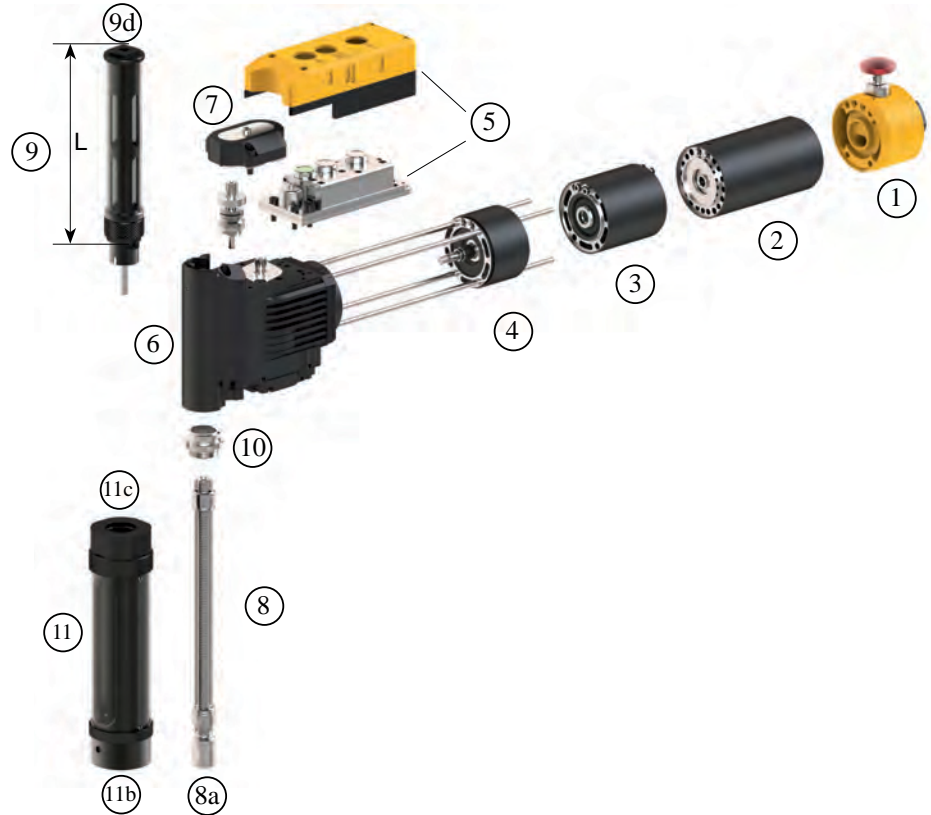


Designation	Ordering No.
Base tool without rapid advance	
PFD1500RA-100	8440 1500 00
PFD1500RA-140	8440 1500 01
PFD1500RA-180	8440 1500 02
PFD1500RA-200	8440 1500 03
PFD1500RA-270	8440 1500 04
PFD1500RA-360	8440 1500 05
PFD1500RA-400	8440 1500 06
PFD1500RA-530	8440 1500 07
PFD1500RA-670	8440 1500 08
PFD1500RA-700	8440 1500 09
PFD1500RA-900	8440 1500 10
PFD1500RA-1200	8440 1500 11
PFD1500RA-1330	8440 1500 12
PFD1500RA-1770	8440 1500 13
PFD1500RA-2360	8440 1500 14
Base tool with rapid advance	
PFD1500RA-38-R	8440 1500 33
PFD1500RA-50-R	8440 1500 34
PFD1500RA-67-R	8440 1500 35
PFD1500RA-100-R	8440 1500 36
PFD1500RA-140-R	8440 1500 37
PFD1500RA-180-R	8440 1500 38
PFD1500RA-200-R	8440 1500 39
PFD1500RA-270-R	8440 1500 40
PFD1500RA-360-R	8440 1500 41
PFD1500RA-400-R	8440 1500 42
PFD1500RA-530-R	8440 1500 43
PFD1500RA-670-R	8440 1500 44
PFD1500RA-700-R	8440 1500 45
PFD1500RA-900-R	8440 1500 46

NOTE: Base tool needs to be combined with accessories shown on separate page.

Complete system

- Base tool Item 1-6
- Feed cassette Item 7
- Spindle Item 8
- Spindle guard Item 9
- Tool nose Item 11



Tool noses (Item 11, b, c)

Length in	For bushing	Thread to tool (c)	Thread to bushing (b)	Ordering No.
For cutter up to 3/4"				
5	22000	Internal 1"-14	Internal 1"-14	4141 0261 90
8	22000	Internal 1"-14	Internal 1"-14	4141 0261 91
12	22000	Internal 1"-14	Internal 1"-14	4141 0261 92
3.25	23000	Internal 1"-14	Internal 1 1/4"-12	4141 0251 93
5	23000	Internal 1"-14	Internal 1 1/4"-12	4141 0251 90
8	23000	Internal 1"-14	Internal 1 1/4"-12	4141 0251 91
12	23000	Internal 1"-14	Internal 1 1/4"-12	4141 0251 92
3.75	24000	Internal 1"-14	Internal 1 1/2"-12	4141 0245 93
5	24000	Internal 1"-14	Internal 1 1/2"-12	4141 0245 92
8	24000	Internal 1"-14	Internal 1 1/2"-12	4141 0245 90
12	24000	Internal 1"-14	Internal 1 1/2"-12	4141 0245 91
8	25000	Internal 1"-14	Internal 2"-16	4141 0257 90
12	25000	Internal 1"-14	Internal 2"-16	4141 0257 91
For cutter up to 1 1/4"				
5IN-1-1-2-E	24000	External 1 9/16"-20 thread	Internal 1 1/2"-12	4141 0312 90
5IN-1-1-2-E	24000	External 1 9/16"-20 thread	Internal 1 1/2"-12	4141 0312 91
5IN-1-1-2-E	24000	External 1 9/16"-20 thread	Internal 1 1/2"-12	4141 0312 92
8IN-2-E	25000	External 1 9/16"-20 thread	Internal 2"-16	4141 0313 90
12IN-2-E	25000	External 1 9/16"-20 thread	Internal 2"-16	4141 0313 91

Spindles (Item 8, a)

	Length		Stroke		Thread (a)	Ordering No.
	in		in	mm		
7.5IN-3-8	7.5		2.7	69	3/8"-24	4141 0256 94
10IN-3-8	9.8		5.2	132	3/8"-24	4141 0256 90
12IN-3-8	11.8		7.2	183	3/8"-24	4141 0256 91
14IN-3-8	13.8		9.2	234	3/8"-24	4141 0256 92
16IN-3-8	15.7		11.2	284	3/8"-24	4141 0256 93
7.5IN-9-16	7.5		2.7	69	9/16"-18	4141 0004 94
9IN-9-16	8.8		4.2	107	9/16"-18	4141 0004 95
10IN-9-16	9.8		5.2	132	9/16"-18	4141 0004 90
12IN-9-16	11.8		7.2	183	9/16"-18	4141 0004 91
14IN-9-16	13.8		9.2	234	9/16"-18	4141 0004 92
16IN-9-16	15.7		11.2	284	9/16"-18	4141 0004 93
7.5IN-5-8	7.5		2.7	69	5/8"-18	4141 0224 94
9IN-5-8	8.8		4.2	107	5/8"-18	4141 0224 95
10IN-5-8	9.8		5.2	132	5/8"-18	4141 0224 90
12IN-5-8	11.8		7.2	183	5/8"-18	4141 0224 91
14IN-5-8	13.8		9.2	234	5/8"-18	4141 0224 92
16IN-5-8	15.7		11.2	284	5/8"-18	4141 0224 93

Spindle guard (Item 9, d)

For spindle	Length (L1)		Ordering No.
	in	mm	
7.5IN	3.9	99	4141 0068 94
9.0IN	5.4	137	4141 0068 95
10IN	6.4	163	4141 0068 90
12IN	8.3	211	4141 0068 91
14IN	10.3	262	4141 0068 92
16IN	12.3	313	4141 0068 93

Thread to coolant coupling 1/8" NPT (See illustration 9d)

Feed cassettes (Item 7)

Primary feed IPR	Secondary feed IPR	Ordering No.
0.001	0.016	4141 0034 91
0.002	0.015	4141 0034 92
0.003	0.014	4141 0034 93
0.004	0.013	4141 0034 94
0.006	0.010	4141 0034 95
0.008	0.008	4141 0034 96
0.010	0.006	4141 0034 97
0.013	0.004	4141 0034 98

Product accessories

Designation	Description	Ordering No
Indexer 1", adds 1.6 in of length to the tool	Indexer interface to tool nose: External 1"-20 thread	4141 0150 93
Indexer 1 9/16", adds 1.6 in of length to the tool	Indexer interface to tool nose: Internal 1 9/16"-20 thread	4141 0306 90
PFD1500 handle		4141 0302 90
Rapid advance retrofit kit		4141 0309 90
Motor valve with port	Port for connecting an external onboard dispenser or other device	4141 0098 92
Nose adapter		
for internal nose thread 2 1/4"	For nose with internal thread 2 1/4"	4141 0032 03
for internal nose thread 1.825"	For nose with internal thread 1.825"	4141 0032 07
for external nose thread 1 9/16"	For nose with external thread 1 9/16"	4141 0032 04
for 1 9/16" external to 2 1/4" external	To be used with 2 1/4" internal thread tool noses with indexer 1 9/16"	4141 0307 00
Tool nose extension 1"	Thread 1"-20	4141 0274 90
Range gear, rpm		
38/50/67		4141 0043 95
100/140/180		4141 0043 92
200/270/360		4141 0043 90
400/530/700		4141 0043 94
670/900/1200		4141 0043 93
1330/1770/2360		4141 0043 91
Chuck system		
Collet chuck for DA100 collets	External 9/16"-18 thread	4141 0282 90
Adapter 9/16" to 3/8"	For 3/8" jaw chuck mount	4141 0254 00
DA100 collet		
3/16"		4141 0300 10
15/64"		4141 0300 13
1/4"		4141 0300 14
5/16"		4141 0300 18
11/32"		4141 0300 20
3/8"		4141 0300 22
7/16"		4141 0300 26
15/32"		4141 0300 28
1/2"		4141 0300 30
9/16"		4141 0300 34
4.5 mm		4141 0305 05
5.5 mm		4141 0305 07
6.5 mm		4141 0305 09
7.0 mm		4141 0305 10
8.0 mm		4141 0305 12
9.5 mm		4141 0305 15

Vacuum device

For nose	Bushing series	Ordering No.
5	22000	4141 0250 91
8	22000	4141 0250 92
12	22000	4141 0250 94
5	23000	4141 0250 93
8	23000	4141 0250 95
12	23000	4141 0250 96
5	24000	4141 0330 90
8	24000	4141 0250 90
12	24000	4141 0250 97
8	25000	4141 0250 98
12	25000	4141 0250 99



Vacuum device



Range gear

Service Kits

Service kit for	Ordering No.
Feed cassette	4082 0037 90
Spindle guard	4081 0460 90
Head part 1	4081 0452 90
Head part 2	4081 0453 90
Head part 3	4081 0455 90
Range gear	4081 0458 90
Motor	4081 0457 90
Motor valve	4081 0456 90



Vacuum device with tool nose



Handle

NOTE: Please see the product information sheet (PI) available at <http://servaidweb.atlascopco.com> for a complete list of spare parts.