



USER MANUAL

TIP DRESSER

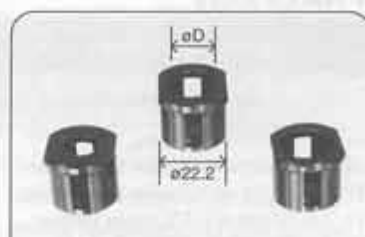
MODELS : FTD-18-1 & FTD-18A-1 (PAT.P)



FTD-18-1



FTD-18A-1



Cutter Cases

The cutter case bore diameter(ϕD) acts as a guide so that the cutter dresses at the correct location relative to the tip. Please specify a cutter case that matches the tip size.

A $\phi 16$ cutter case will be provided as a standard accessory. Please specify the cutter case size $\phi 12$ or 13 otherwise.

SPECIFICATIONS

Model	Capacity Tip Size		Max. Clamp Height		Rotational Frequency	Overall Length		Mass		Max. Air Consumption		Air Inlet Thread Size	Air Hose Size	
	mm	in	mm	in		mm	in	kg	lb	m ³ /min	ft ³ /min		mm	in
FTD-18-1	12~18	15/32~3/8	—		1,300	290	11 7/16	1.65	3.64	0.5	17.7	PT or NPT 1/4	9.5	3/8
FTD-18A-1	13~16	33/64~3/8	25	63/64	1,300	307	12 3/32	2.02	4.45	0.5	17.7	PT or NPT 1/4	9.5	3/8

Please refer to P-3 for the cutter.

The performance figures are at 0.63MPa (6.3bar).



Refer to "The Instructions and Warning for Safety Use" enclosed in each tool box.

BOLT & NUT SETTERS
SCREW DRIVERS

ABRASIVE TOOLS

DRILLS · TAPPERS

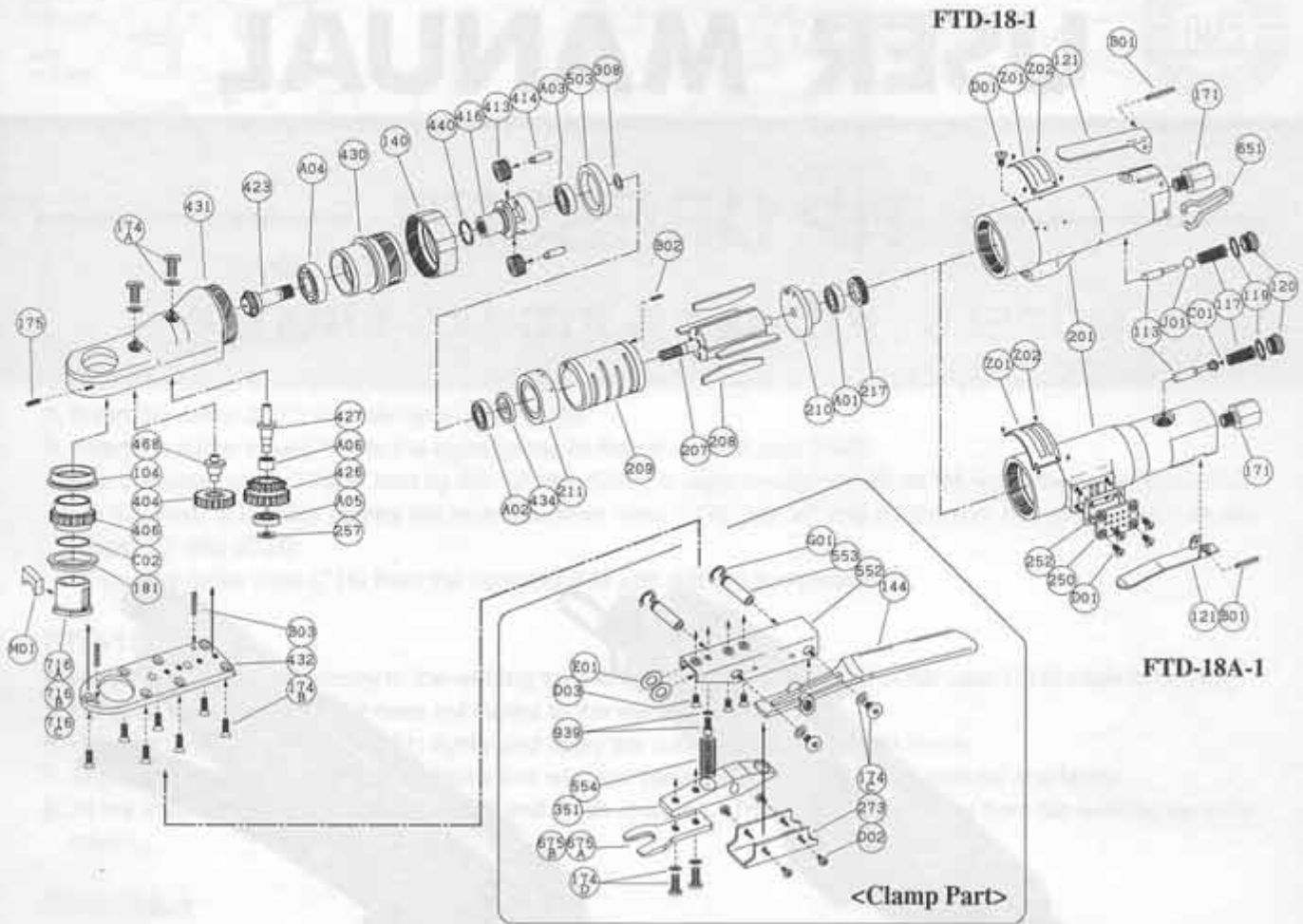
PERCUSSION TOOLS

AIR MOTORS & OTHERS

OTHER PRODUCTS

PARTS LIST MODEL : FTD-18-1 & FTD-18A-1

EXPLODED VIEW



PARTS LIST

Index No.	Parts No.	Parts Name	Qt.	Index No.	Parts No.	Parts Name	Qt.	Index No.	Parts No.	Parts Name	Qt.
FTD-18-1, FTD-18A-1								FTD-18A-1			
104	S-167104-00	Bushing	1	423	S-167423-0	Bevel Pinion	1	113	S-167113-00	Throttle Valve Rod	1
113	S-166113-00	Throttle Valve Rod	1	426	S-167426-00	Bevel Gear	1	121	S-167121-00	Throttle Valve Lever	1
117	S-167117-00	Throttle Valve Spring	1	427	S-167427-00	Bevel Gear Spindle	1	144	S-167144-00	Throttle Valve Lever 	1
119	S-167119-00	T.V. Cover Packing	1	430	S-167430-00	No.1 Gear Case	1	174C	S-167174-02	Small Screw <With CSW>	2
120	S-167120-00	Throttle Valve Cover	1	431	S-166431-00	No.2 Gear Case	1	174D	S-167174-03	Small Screw <With CSW>	2
121	S-166121-00	Throttle Valve Lever	1	432	S-166432-00	Gear Case Cover	1	201	S-167201-00	Housing	1
140	S-167140-00	Cup Nut	1	434	S-167434-00	Bearing Washer	1	207	S-167207-00	Rotor	1
171	S-167171-00	Inlet Joint <PT>	1	440	S-167440-00	Ring	1	208	S-167208-00	Rotor Blade	4
171	IB-202N00	Inlet Joint <NPT>	1	468	S-167468-00	No.2 Gear Spindle	1	209	S-167209-00	Cylinder	1
174A	S-167174-00	Small Screw <with PW>	2	503	S-167503-00	Spacer 	1	210	S-167210-00	Cylinder Upper Plate	1
174B	S-167174-01	Small Screw	7	651	S-166651-00	Hanger <FTD-18-1>	1	211	S-167211-00	Cylinder Lower Plate	1
175	S-167175-00	Small Screw 	1	716A	S-167716-00	Cutter Case <ø16>	1	217	S-167217-00	Bearing Cover	1
181	S-167181-00	Bushing 	1	716B	S-167716-01	Cutter Case <ø13>	1	257	S-167257-00	Washer	1
201	S-166201-00	Housing	1	716C	S-167716-02	Cuter Case <ø12> <FTD-18-1>	1	308	S-167308-00	Spacer	1
207	S-167207-00	Rotor	1	A01	BB-626	Ball Bearing	1	404	S-167404-00	No.2 Gear	1
208	S-167208-00	Rotor Blade	4	A02	BB-608LLB	Ball Bearing	1	406	S-167406-00	No.3 Gear	1
209	S-167209-00	Cylinder	1	A03	BB-608	Ball Bearing	1	413	S-167413-00	No.1 Planet Gear	2
210	S-167210-00	Cylinder Upper Plate	1	A04	BB-6200	Ball Bearing	1	414	S-167414-00	No.1 Planet Gear Spindle	2
211	S-167211-00	Cylinder Lower Plate	1	A05	BB-EE2	Ball Bearing	1	416	S-167416-00	No.1 Planet Gear Frame	1
217	S-167217-00	Bearing Cover	1	A06	NB-F88-TORR	Needle Bearing	1				
257	S-167257-00	Washer	1	B01	SP-322	Spring Pin	1				
308	S-167308-00	Spacer	1	B02	SP-2.58	Spring Pin	1				
404	S-167404-00	No.2 Gear	1	B03	SP-316	Spring Pin	2				
406	S-167406-00	No.3 Gear	1	C02	O-P22	"O" Ring	1				
413	S-167413-00	No.1 Planet Gear	2	D01	S-48RS	Screw	1				
414	S-167414-00	No.1 Planet Gear Spindle	2	J01	B-8U	Urethane Ball <FTD-18-1>	1				
416	S-167416-00	No.1 Planet Gear Frame	1	Z01	NP-0721	Name Plate	1				
				Z02	NPN-0x3.2	Screw Rivet	4				
				M01		Cutter	1				

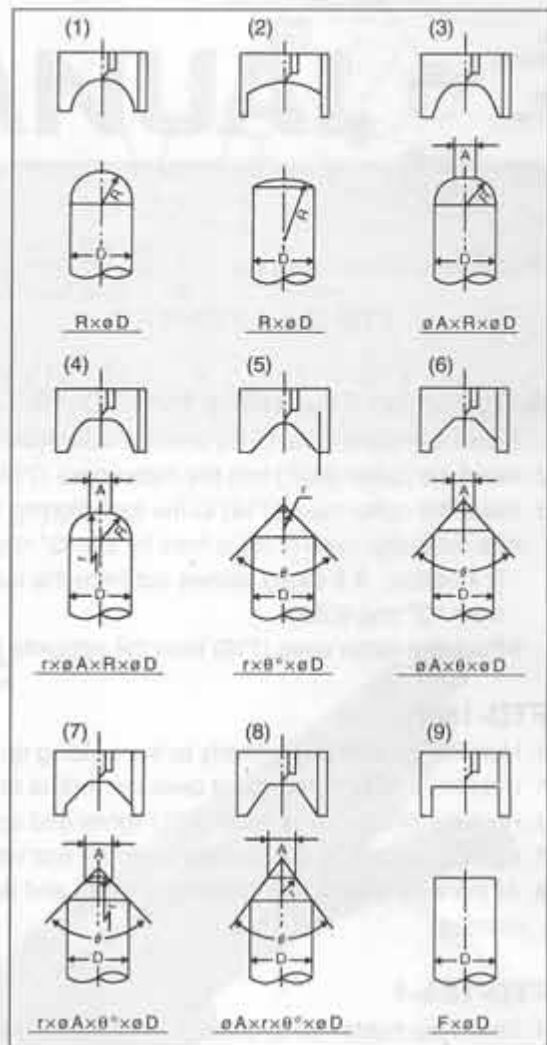
□ The standard cutter case size is ø16. Specify size in ordering.

■ Classification Table For Cutter

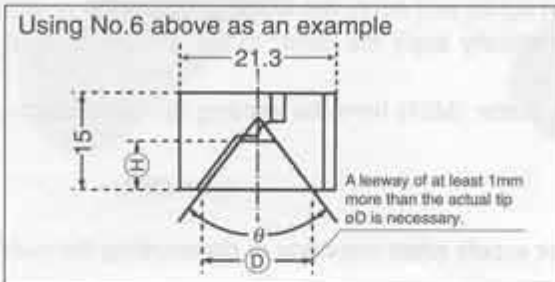
Type	Item No.	Tip shape (Nominal)	Max diameter repaired(ϕD)	Standard
(1)	CUT-1001	6R	$\phi 12$	6R $\times\phi 12$
	CUT-1002	6.5R	$\phi 13$	6.5R $\times\phi 13$
	CUT-1003	8R	$\phi 16$	8R $\times\phi 16$
(2)	CUT-2001	10R~150R	$\phi 16$	16R $\times\phi 16$
	—	—	—	—
(3)	—	$\phi A \times 6R$	$\phi 12$	—
	—	$\phi A \times 6.5R$	$\phi 13$	—
	CUT-3001	$\phi A \times 8R$	$\phi 16$	$\phi 5 \times 8R \times \phi 16$
	CUT-3002			$\phi 6 \times 8R \times \phi 16$
(4)	—	$r \times \phi A \times 6R$	$\phi 12$	—
	—	$r \times \phi A \times 6.5R$	$\phi 13$	—
	CUT-4001	$r \times \phi A \times 8R$	$\phi 16$	40 $r \times \phi 6 \times 8R \times \phi 16$
(5)	—	5~6 $r \times 60^\circ$	$\phi 13$	—
	—	3 r or more $\times 90^\circ$	$\phi 16$	—
(6)	—	7~ $\phi 9 \times 50^\circ$	$\phi 13$	—
	—	$\phi 10$ or more $\times 50^\circ$	$\phi 16$	—
	CUT-6001	5~ $\phi 7 \times 60^\circ$	$\phi 13$	$\phi 6 \times 60^\circ \times \phi 13$
	—	$\phi 8$ or more $\times 60^\circ$	$\phi 16$	—
	—	3~ $\phi 4 \times 75^\circ$	$\phi 13$	—
	CUT-6002	$\phi 5$ or more $\times 75^\circ$	$\phi 16$	$\phi 6 \times 75^\circ \times \phi 16$
	CUT-6003	$\phi 3$ or more $\times 90^\circ$	$\phi 16$	$\phi 4 \times 90^\circ \times \phi 16$
	CUT-6004			$\phi 6 \times 90^\circ \times \phi 16$
—	$\phi 3$ or more $\times 120^\circ$	$\phi 16$	—	
(7)	—	$r \times \phi A \times \theta^\circ$	ϕD	—
(8)	—	$\phi A \times r \times \theta^\circ$	ϕD	—
(9)	—	F	$\phi 16$	—

- * Beside item listed above table, minimum 10pcs. per item is required for ordering optional cutters. Specify the nominal dimensions when ordering.
- * Cutter is not provided as a standard accessory.

■ Shapes of Tip and Cutters



■ Example of Cutter Manufacturing Limitations



- (1) The cutting edge depth (H) is limited to 7.5mm (which is 1/2 of the total height of 15mm) or less due to strength considerations.
 - (2) Should the cutting edge θ° on two-blade cutters get too small, chatter will result and the finished shape will be susceptible to breakage. Therefore we limit it to a maximum of 50 degrees.
- * Cutters that do not meet the above conditions (1) and (2) can not be made.

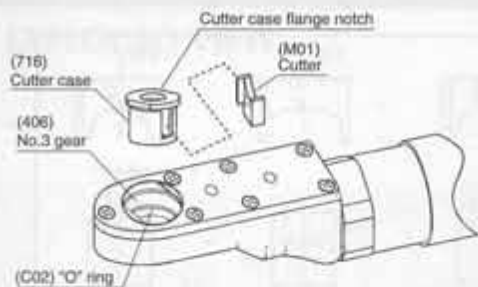
■ Cutter Nominal Dimensions and Manufacturing Dimensions

When ordering, please use the above classification table with regards to tip shape when specifying the nominal dimensions for cutters. However, depending on the shape of the tip and as long as the cutting edge depth (H) is not exceeded, we make cutters that can be used up to the maximum diameter of the tip ($\phi 16$) are made. For example, for an order for a cutter to handle 10R $\times\phi 13$ tips, the cutter we make will be specified only as 10R. The cutter to be supplied will in fact be an item for 10R $\times\phi 16$. If the tip diameter is $\phi 16$ or less, dressing can be performed with this cutter by merely replacing the cutter case with one that matches the tip diameter.

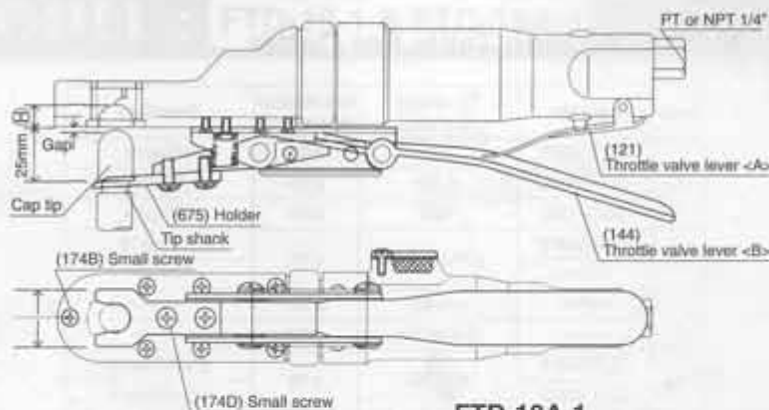
(Ordering example)	Cutter No.	Tip shape (Nominal)	Cutter Supplied	※ For difficult specifications, please send us its drawing or an actual cutter.
	(6)	$\phi 6 \times 75^\circ \times \phi 12$	→ $\phi 6 \times 75^\circ \times \phi 16$	
	(9)	F $\times\phi 13$	→ F $\times\phi 16$	

■ Cutter Repair

A cutter can be repaired two to four times. We also offer you of cutter repair. Please send as many together at once as possible.



FTD-18-1 & FTD-18A-1



FTD-18A-1

■ Operation Procedure for FTD-18-1 & FTD-18A-1

1. Select the cutter case (716) and the cutter (M01) suitable for the size and shape of the welding tip.
2. Insert the cutter (M01) into the cutter case (716).
3. Insert the cutter case (716) to the tool aligning its flange to No.3 gear (406).
 - *As the cutter case (716) is held by the "O" ring (C02), a slight resistance will be felt when the cutter case (716) is inserted. If it easily comes out from the cutter case (716), the "O" ring (C02) must be replaced as it shows worn "O" ring (C02).
 - *Push the cutter case (716) from the opposite side with a finger for removal.

FTD-18-1

4. Hold the tip dresser vertically to the welding tip and bring the opening of the cutter case (716) close to the tip.
5. Hold the tool firmly so that it does not incline to the welding tip.
6. Hold the throttle valve lever (121) lightly and apply the cutter to the welding tip slowly.
7. Apply the cutter to the welding tip lightly first with low speed, then slowly make it heavier and faster.
8. At the end, slowly stop pushing the tool and finish dressing. Then separate the tool from the welding tip while rotating.

FTD-18A-1

4. Select the holder (675) suitable in size for the tip shank (12, 13 or 16mm).
5. Reset the small screws (174D) aligning the holder (675) into the center of the welding tip.
6. Hold the tool vertically to the welding tip and insert the holder (675) into the tip shank under the cap tip.
7. Hold the tool firmly and grip the throttle valve lever (144) lightly and apply the cutter (M01) to the welding tip slowly. Patented interlocking valve mechanism will automatically apply the cutter to the welding tip lightly first with low speed, then heavier and faster gradually.
8. At the end, slowly release the lever (144) and separate the cutter (M01) from the welding tip while rotating. Then pull the holder (675) off from the tip.

Caution

- Be sure to disconnect the tool from air supply or shut off the air supply when mounting or dismounting the cutter and the cutter case.
- Make sure the cutter fits with the cutter case before use.
- Do not touch the cutter and the cutter case mounted on the tool in operation.
- Do not start the operation of the tool when the cutter is fixed on the welding tip in a jam.
- Start the tool slowly as a strong reaction torque is likely developed when repairing worn welding tip.
- Over-dressing will shorten the service life of welding tip and cutter.

We recommend you to find a suitable time for tip dressing by measuring the time for dressing in your factory.

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