

## PIPE BEVELLING MACHINE ( CAPACITY : 80mm~240mm )

### MODELS : FBM-300 SERIES



In ordering FBM-300 series, please specify the model variation such as FBM-300-3, or the pipe inside diameter in your operation.  
Please refer to page 8 in ordering Chucks separately.

#### Standard Accessories(FBM-300-2)

AC No.	Description	Qty
BIT-120E01	Bit Tool (For Exterior)	2
BIT-120F01	Bit Tool (For Surface)	2
F-117-1	Open-End Wrench (17mm)	1
F-706	Hex.Pin Wrench (6mm)	1
CASE-300-1	Steel Case	1
CASE-300-2	Steel Case	1

#### Standard Accessories(FBM-300-3)

AC No.	Description	Qty
BIT-120E01	Bit Tool (For Exterior)	2
BIT-120F01	Bit Tool (For Surface)	2
F-117-1	Open-End Wrench (17mm)	1
F-706	Hex.Pin Wrench (6mm)	1
CASE-300-1	Steel Case	1
CASE-300-2	Steel Case	1
CASE-300-3	Steel Case	1

#### FULL SET (4cases)



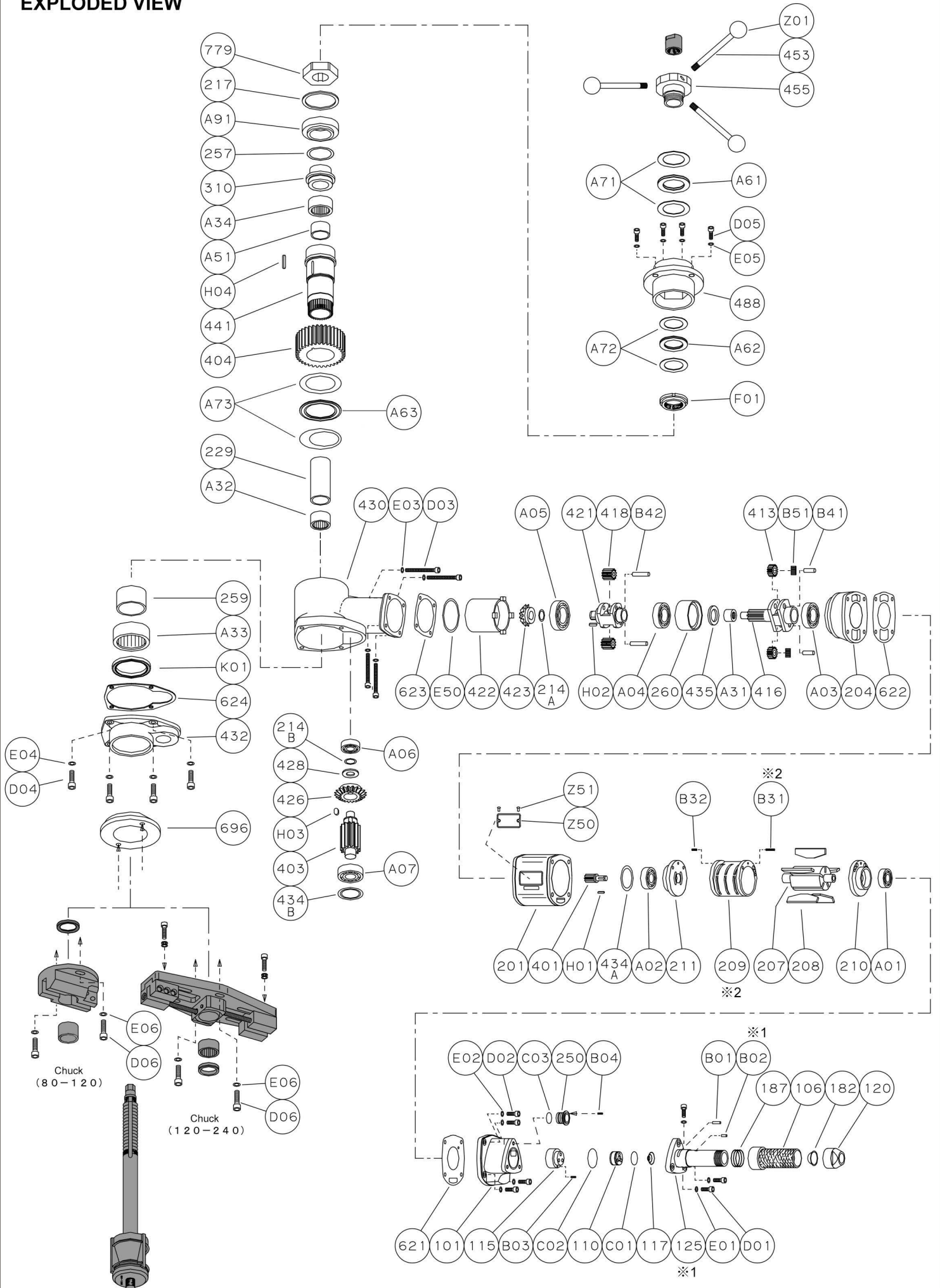
### SPECIFICATIONS

Model	Model Variation	Capacity (Pipe inside Dia.)		Free Speed (about)	Free Length (about)		Spindle Offset (about)		Overall Length (about)		Weight (about)		Air Consumption at Max. Output (about)		Air Hose Size	
		mm	in		rpm	mm	in	mm	in	mm	in	kg	lb	m <sup>3</sup> /min	ft <sup>3</sup> /min	mm
FBM-300	-2	80~120	3 <sup>9</sup> / <sub>64</sub> ~4 <sup>23</sup> / <sub>32</sub>	75	60	2 <sup>23</sup> / <sub>64</sub>	56	2 <sup>13</sup> / <sub>64</sub>	524	2 5/8	20.4	52.1	1.60	54.5	12.7	1/2
	-3	120~240	4 <sup>23</sup> / <sub>32</sub> ~9 <sup>29</sup> / <sub>64</sub>	75	60	2 <sup>23</sup> / <sub>64</sub>	135	5 <sup>5</sup> / <sub>16</sub>	603	23 <sup>47</sup> / <sub>64</sub>	28.6	58.9	1.60	54.5	12.7	1/2
	-4	80~240	3 <sup>9</sup> / <sub>64</sub> ~9 <sup>29</sup> / <sub>64</sub>	FBM-300-4 is supplied with a full set of Chuck Assemblies and Tool Holder Assemblies which are attached to FBM-300-2 and FBM-300-3.												

- Air Inset Size : Rc 1/2
- Performance figures are at 6.3 bar.

Please contact us or our distributor on 240mm - 300mm bevelling.

# EXPLODED VIEW



\*Please refer to page 4-5 on Chuck Ass'y.

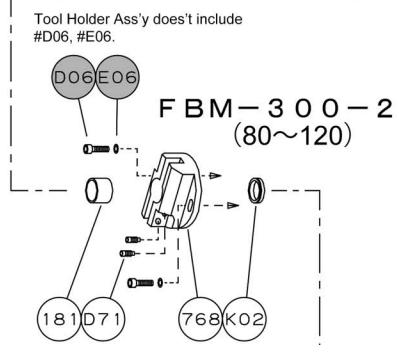
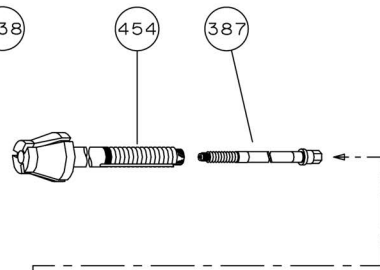
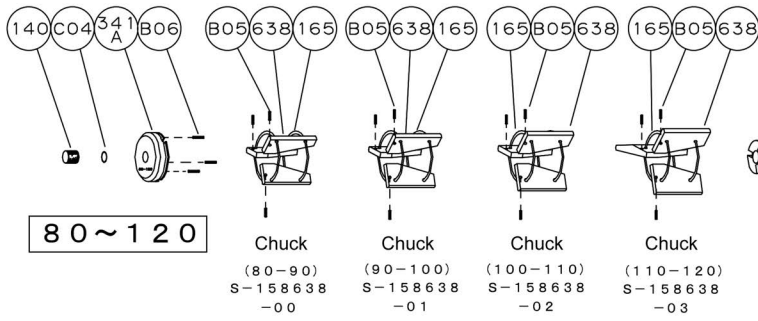
# PARTS LIST

Index No.	Part No.	Part Name	Qty	Index No.	Part No.	Part Name	Qty
—	A-078004-00	Throttle Valve Stem Ass'y		488	S-158488-00	Spindle Cover	1
106	A-078106-01	Throttle Valve Handle	1	621	S-158621-00	Packing (A)	1
110	A-077110-00	Throttle Valve	1	622	S-086622-00	Packing (B)	1
115	A-078115-00	Throttle Valve Sheet	1	623	S-086623-00	Packing (C)	1
(B03)	SP-2.510	Spring Pin	1	624	S-086624-00	Packing (D)	1
117	G-044117-00	Throttle Valve Spring	1	696	S-153696-00	Joint Nut	1
120	A-078120-02	Throttle Valve Cover	1	779	S-153779-00	Locking Clutch Holder	1
※1 125	A-078125-00	Throttle Valve Stem	1	A01	BB-6202	Ball Bearing	1
182	A-078182-00	Strainer	1	A02	BB-6203	Ball Bearing	1
187	A-011187-01	Throttle Valve Handle Spring	1	A03	BB-6005	Ball Bearing	1
B01	NR-416	Needle Roller	1	A04	BB-6005	Ball Bearing	1
※1 B02	NR-410	Needle Roller	1	A05	BB-6006	Ball Bearing	1
C01	O-S22	"O"Ring	1	A06	BB-6202	Ball Bearing	1
101	S-158101-00	Housing Cover	1	A07	BB-6204	Ball Bearing	1
201	S-158201-00	Housing	1	A31	NB-HMK1012	Needle Bearing	1
204	S-086204-01	Housing Lower Cover	1	A32	NB-HK3020	Needle Bearing	1
207	D-026207-00	Rotor	1	A33	NB-NK55/25	Needle Bearing	1
208	D-026208-00	Rotor Blade	5	A34	NB-NK35/20R	Needle Bearing	1
※2 209	D-027209-00	Cylinder	1	A51	IR-303520	Inner Race	1
( B32 )	SP-310	Spring Pin	1	A61	NB-AXK1108	Needle Bearing	1
210	D-026210-00	Cylinder Upper Plate	1	A62	NB-AXK1107	Needle Bearing	1
211	D-008211-00	Cylinder Lower Plate	1	A63	NB-AXK1111	Needle Bearing	1
214A	S-016214-00	Adjusting Washer (Shim)	( 1 )	A71	TW-AS1108	Thrust washer	2
	S-016214-03	Adjusting Washer (Shim)	( 1 )	A72	TW-AS1107	Thrust washer	2
214B	S-016214-00	Adjusting Washer (Shim)	( 1 )	A73	TW-AS1111	Thrust washer	2
	S-016214-03	Adjusting Washer (Shim)	( 1 )	A91	RB-ET32008X	Roller Bearing	1
217	S-153217-00	Bearing Cover	1	B04	SP-320	Spring Pin	1
229	S-153229-00	Bearing Spacer	1	※2 B31	SP-318	Spring Pin	1
250	S-158250-00	Exhaust Cover	1	B41	NR-722	Needle Roller	2
257	S-153257-00	Washer <t=0.2>	( 1 )	B42	NR-734	Needle Roller	2
	S-153257-01	Washer <t=0.3>	( 1 )	C02	O-S34	"O"Ring	1
	S-153257-02	Washer <t=0.5>	( 1 )	C03	O-S16	"O"Ring	1
259	S-086259-00	Inner Race	1	D01	CS-618	Cap Screw	3
260	M-019260-00	Bearing Case	1	D02	CS-625	Cap Screw	4
310	S-153310-00	Spindle Arbor	1	D03	CS-665	Cap Screw	4
401	S-086401-00	No.1 Pinion	1	D04	CS-828	Cap Screw	4
403	S-086403-00	No.2 Pinion	1	D05	CS-825	Cap Screw	4
404	S-153404-00	No.2 Gear	1	D06	CS-830	Cap Screw (FBM-300-2)	2
413	M-019413-00	No.1 Planet Gear	2		CS-835	Cap Screw (FBM-300-3)	2
( B51 )	NR-1.59.8	Needle Roller	34	E01	SW-6	Spring Washer	3
416	M-019416-00	No.1 Planet Gear Frame	1	E02	PW-6	Plain Washer	4
418	M-019418-00	No.2 Planet Gear	2	E03	PW-6	Plain Washer	4
421	S-086421-00	No.2 Planet Gear Frame	1	E04	SW-8	Spring Washer	4
422	M-019422-00	No.2 Internal Gear	1	E05	SW-8	Spring Washer	4
423	S-086423-00	Bevel Pinion	1	E06	PW-8	Plain Washer	2
426	M-019426-00	Bevel Gear	1	E50	WW-46	Wave Washer	1
428	S-086428-00	Bevel Gear Washer	1	F01	UN-FU07SC	"U"Nut	1
430	S-153430-00	No.1 Gear Case	1	H01	K-3314	key	1
432	S-086432-00	Gear Case Cover	1	H02	K-4414	key	1
434A	A-025434-00	Bearing Washer	1	H03	K-7712	key	1
434B	M-098434-00	Bearing Washer	1	H04	K-7725	key	1
435	M-019435-00	Thrust Washer	1	K01	OS-VC58726	Oil Seal	1
441	S-153441-00	Spindle (B)	1	Z01	GR-3B32	Glip	3
453	S-086453-00	Feed Screw Handle	3	Z50	NP-3015	Name Plate	1
455	S-158455-00	Feed Sleeve	1	Z51	NPN-0X3.2	Screw Rivet	2

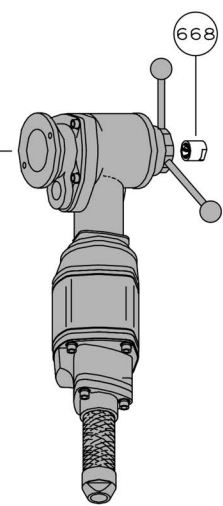
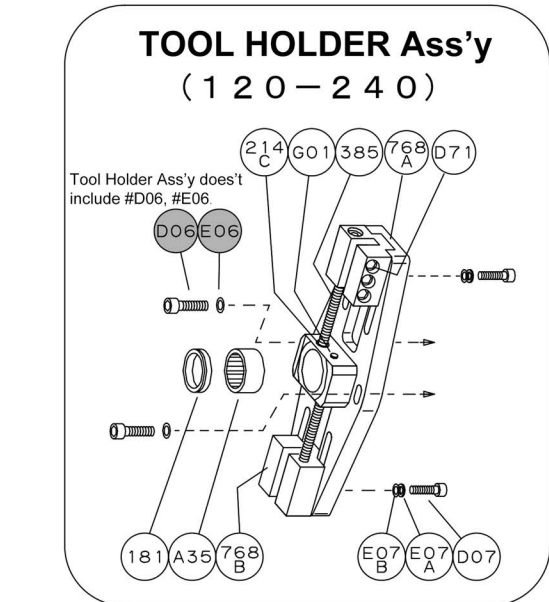
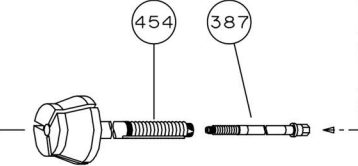
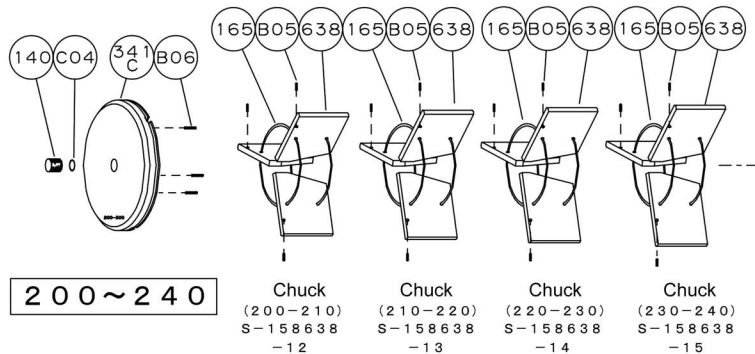
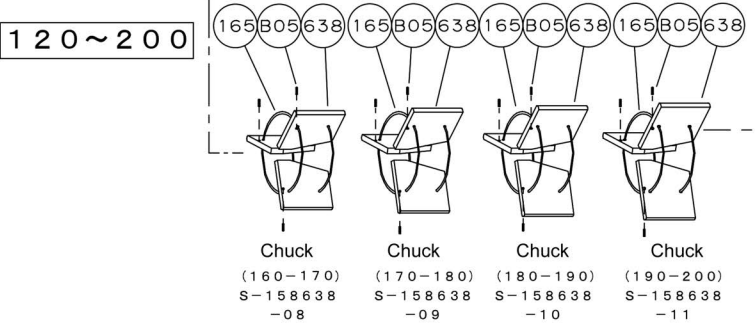
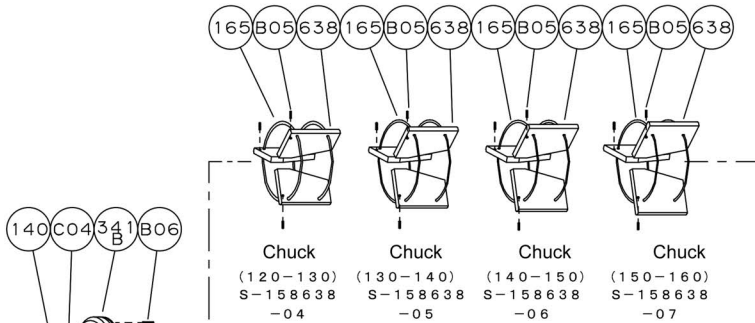
Please refer to page 5 on Chuck parts.

- The related parts are shown in a thick frame.
- #115, #209, and #413 are supplied together with parts shown in ( ).
- Specify parts number and quantity when ordering.
- ※1 When you order #125, please order #B02 together.
- ※2 When you order #209, please order #B04 together.

# CHUCK Ass'y



## TOOL HOLDER Ass'y



# PARTS LIST : CHUCKS AND TOOL HOLDERS

Index No.	Part No.	Part Name	Qty
<b>FBM-300-2 (80mm~120mm)</b>			
—	S-153018-00	Tool Holder Ass'y <80-120>	
181	S-086181-00	Bushing (B)	1
768	S-153768-00	Tool Holder <80-120>	1
D71	SS-1212K	Set Screw	4
K02	OS-VB30425	Oil Seal	1
—	S-158016-00	Chuck Ass'y <80-120>	
140	S-158140-00	Cup Nut	1
341A	S-158341-00	Chuck Collar	1
( B06 )	SP-318	Spring Pin	3
387	S-158387-00	Locking Bolt	1
454	S-158454-01	Feed Screw	1
668	S-158668-00	Nut	1
C04	O-P9	"O"Ring	1
—	S-158040-00	Chuck Blade Ass'y <80-90>	
165	S-158165-00	Stop Ring	2
638	S-158638-00	Chuck <80-90>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-01	Chuck Blade Ass'y <90-100>	
165	S-158165-00	Stop Ring	2
638	S-158638-01	Chuck <90-100>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-02	Chuck Blade Ass'y <100-110>	
165	S-158165-00	Stop Ring	2
638	S-158638-02	Chuck <100-110>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-03	Chuck Blade Ass'y <110-120>	
165	S-158165-00	Stop Ring	2
638	S-158638-03	Chuck <110-120>	3
( B05 )	SP-314	Spring Pin	3
<b>FBM-300-3 (120mm~240mm)</b>			
—	S-158018-00	Tool Holder Ass'y <120-240>	
181	S-158181-00	Bushing (B)	1
214C	G-041214-00	Adjusting Washer (Shim)	2
385	S-158385-00	Adjusting Screw	2
768A	S-158768-00	Tool Holder	1
768B	S-158768-01	Tool Holder	2
A35	NB-HK3018L	Needle Bearing	1
D07	CS-830	Cap Screw	4
D71	SS-1212K	Set Screw	6
E07A	SW-8	Spring Washer	4
E07B	PW-8	Plain Washer	4
G01	SR-E4	Snap Ring	2
—	S-158016-01	Chuck Ass'y <120-240>	
140	S-158140-00	Cup Nut	1
341B	S-158341-01	Chuck Collar <120-200>	1
( B06 )	SP-318	Spring Pin	3
341C	S-158341-02	Chuck Collar <200-240>	1
( B06 )	SP-318	Spring Pin	3
387	S-158387-00	Locking Bolt	1
454	S-158454-02	Feed Screw	1
668	S-158668-00	Nut	1
C04	O-P9	"O"Ring	1
—	S-158040-04	Chuck Blade Ass'y <120-130>	
165	S-158165-01	Stop Ring	2
638	S-158638-04	Chuck <120-130>	3
( B05 )	SP-314	Spring Pin	3

Index No.	Part No.	Part Name	Qty
—	S-158040-05	Chuck Blade Ass'y <130-140>	
165	S-158165-01	Stop Ring	2
638	S-158638-05	Chuck <130-140>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-06	Chuck Blade Ass'y <140-150>	
165	S-158165-01	Stop Ring	2
638	S-158638-06	Chuck <140-150>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-07	Chuck Blade Ass'y <150-160>	
165	S-158165-01	Stop Ring	2
638	S-158638-07	Chuck <150-160>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-08	Chuck Blade Ass'y <160-170>	
165	S-158165-01	Stop Ring	2
638	S-158638-08	Chuck <160-170>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-09	Chuck Blade Ass'y <170-180>	
165	S-158165-01	Stop Ring	2
638	S-158638-09	Chuck <170-180>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-10	Chuck Blade Ass'y <180-190>	
165	S-158165-01	Stop Ring	2
638	S-158638-10	Chuck <180-190>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-11	Chuck Blade Ass'y <190-200>	
165	S-158165-01	Stop Ring	2
638	S-158638-11	Chuck <190-200>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-12	Chuck Blade Ass'y <200-210>	
165	S-158165-01	Stop Ring	2
638	S-158638-12	Chuck <200-210>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-13	Chuck Blade Ass'y <210-220>	
165	S-158165-01	Stop Ring	2
638	S-158638-13	Chuck <210-220>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-14	Chuck Blade Ass'y <220-230>	
165	S-158165-01	Stop Ring	2
638	S-158638-14	Chuck <220-230>	3
( B05 )	SP-314	Spring Pin	3
—	S-158040-15	Chuck Blade Ass'y <230-240>	
165	S-158165-01	Stop Ring	2
638	S-158638-15	Chuck <230-240>	3
( B05 )	SP-314	Spring Pin	3

## Full Set

### FBM-300-4 (80mm~240mm)

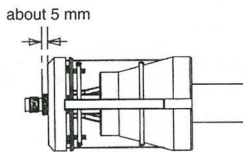
FBM-300-4 is supplied with a full set of Chucks Attached to FBM-300-2 and FBM-300-3.

- The related parts are shown in a thick frame.
- #341A, #341B, #341C and #638 are supplied together with parts shown in ( ).
- Specify parts number and quantity when ordering.

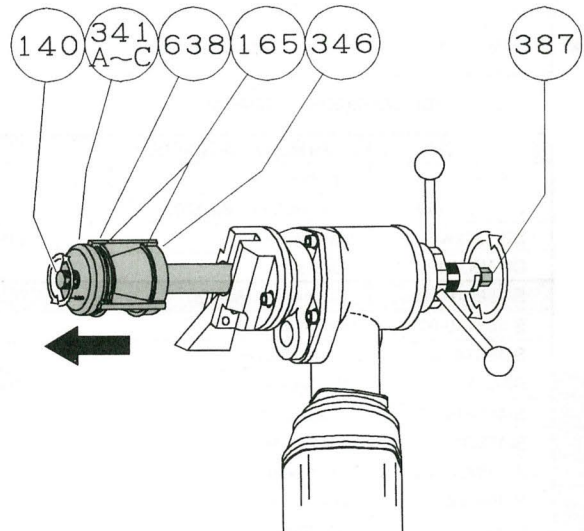
## Mounting and Dismounting of Chuck

### ■ Chuck Mounting

1. Each Chuck Variation consists of 3 pcs. of the Chuck(638) and 2 pcs. of the Stop Ring(165). 3 pcs. of Chucks are linked with the Stop Rings. Please choose the Chuck suitable for the inside diameter of the pipe to be used in your operation.
2. Set the Stop Ring around the outside of 3 pcs. Spring Pins provided on the Chuck Collar(either of 341A, 341B, or 341C). Set 3 pcs. Chuck(638) into 3 Grooves provided on the Check Collar.
3. Slide 3 pcs. Chuck into 3 Slots provided in the Chuck Body(346).
4. Turn right the Hex. part of the Locking Bolt(387) for firm fixing of Chuck-to-Chuck Body until the thread part of the Locking Bolt comes up by about 5 mm from the surface of the Chuck Collar.



5. Fix with the Cup Nut(140) the end of the Locking Bolt(387). This is the completion of the Chuck mounting.

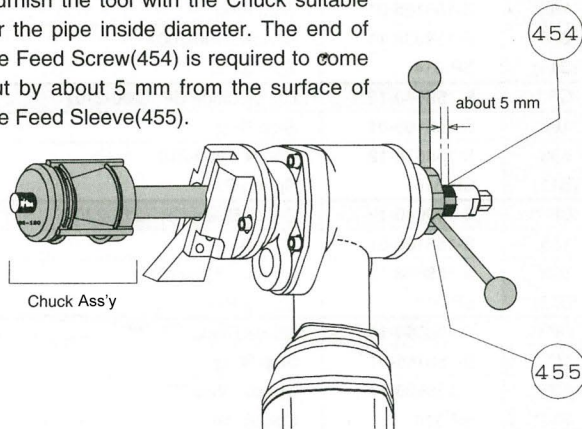


### ■ Chuck Dismounting

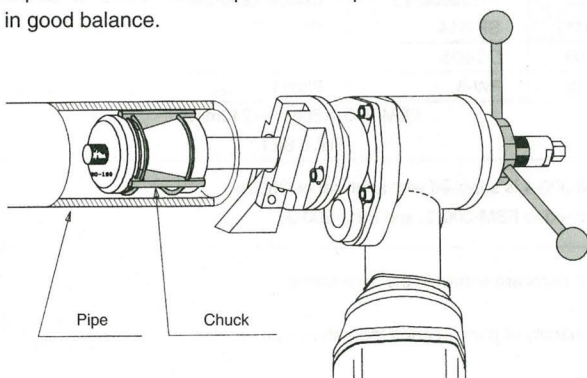
1. Turn left the Cup Nut(140) for the removal. Be careful not to miss the O Ring inserted in the Cup Nut.
2. Turn left 17 mm Hex. part(Handle side) of the Locking Bolt(387) until the Stop Ring(165), holding 3 pcs. of Chucks(638), gets loosen completely. Pull back the Chuck Collar(341) and the Chuck(638) to the arrow direction.

## Tool Mounting to Pipe

1. Furnish the tool with the Chuck suitable for the pipe inside diameter. The end of the Feed Screw(454) is required to come out by about 5 mm from the surface of the Feed Sleeve(455).

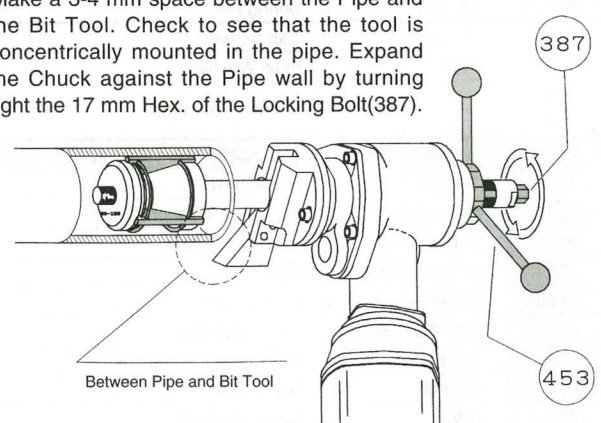


- 2 Set the Chuck part into the Pipe.  
3 pcs. of Chuck are required to be positioned in good balance.



The Spring Balancer is recommended to be used for easy tool setting and effective bevelling operation.

- 3 Make a 3-4 mm space between the Pipe and the Bit Tool. Check to see that the tool is concentrically mounted in the pipe. Expand the Chuck against the Pipe wall by turning right the 17 mm Hex. of the Locking Bolt(387).



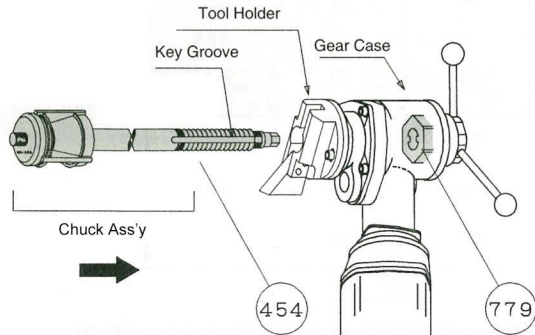
### ■ Tool Dismounting from Pipe

After completion of the bevelling operation, turn left the Handle Grip(453) to have the Bit Tool separated from the Pipe by about 3-4 mm. Turn left the 17 Hex. head of the Locking Bolt(387) until the turning load gets lighter and gets heavier again. Turn by further 30° degree to separate the Chuck part from the Pipe wall.

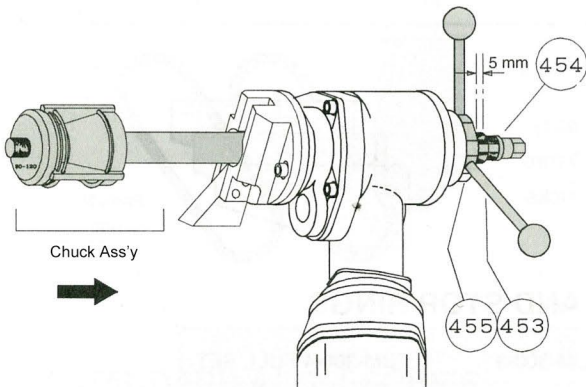
## Mounting and Dismounting of Chuck Assembly

### ■ Chuck Ass'y Mounting to Tool

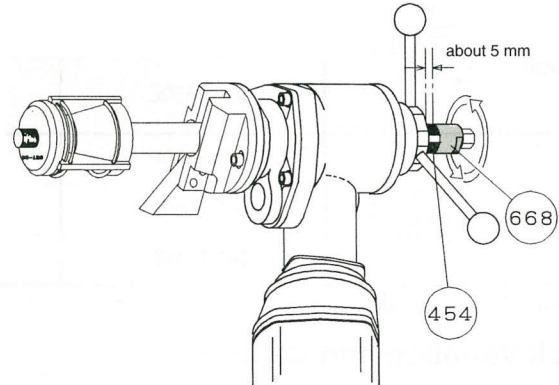
1. Insert the Feed Screw(454) of the Chuck Assembly into the Gear Case(430) until it contacts the Locking Clutch Holder(779).
2. (two) Locking Keys are provided in the Locking Clutch Holder(779). (two) Grooves are provided on the Feed screw(454). When the head of the Feed Screw contacts the Locking Clutch Holder, rotate it left or right the Feed Screw for mating the Grooves with the Locking Keys.



3. Keep on pushing the Chuck Assembly against the Gear Case and turn right the Handle Grip(453) for pulling up the Chuck Assembly.
4. Keep on turning the Handle Grip until the thread part of the Feed Screw comes up by about 5 mm from the surface of the Feed Sleeve(455).

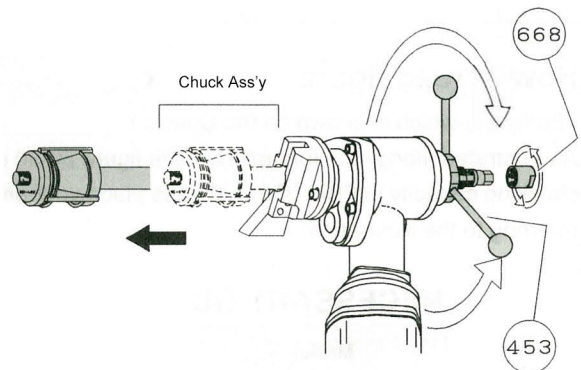


5. Fix the Feed Screw(454) with the Nut(668).



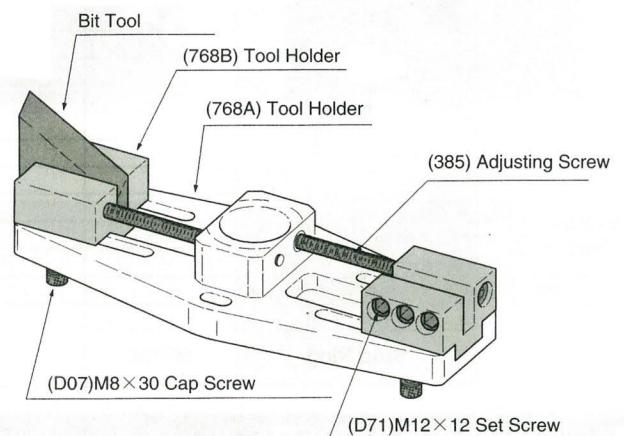
### ■ Chuck Ass'y Dismounting from Tool

1. Unfasten the Nut(668) by turning it left.
2. Turn left the Handle Grip(453) until the Chuck Assembly, feeded out to the arrow direction, separates from the tool.

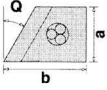
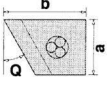
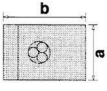


## BIT TOOL POSITION ADJUSTMENT OF 120 – 240mm CAPACITY

- 1 Fix the Bit Tool onto the Bit Holder (768B) with the Set Screw M12×12(D71).
- 2 Loosen the Cap Screw M8×30(D07).
- 3 Move the Bit Holder(768B) with the Adjusting Bolt(385) to change the position of the Bit Tool.
- 4 After the position change, firmly fasten the Cap Screw M8×30(D07).



## BIT TOOL

BIT TOOL SHAPE	PARTS No.	ANGLE	DIMENSIONS(mm)		
			a	b	THICKNESS
FOR EXTERIOR 	BIT-042E01	30°	35	50	11.5
	BIT-042E02	37.5°	35	56	
	BIT-042E03	45°	25	50	
	BIT-042E06	30°	25	40	
	BIT-120E01	30°	60	60	
FOR INTERIOR 	BIT-042B01	30°	25	40	11.5
	BIT-042B02	45°	25	50	
FOR SURFACE 	BIT-042F02	—	25	30	11.5
	BIT-120F01	—	60	40	

\* Standard Accessory : BIT-120E01 , BIT-120F01

### Chuck Variation and Capacity

The capacity of each Chuck is shown in the lists.  
Please choose the Chuck suitable for the inside diameter of the pipe to be used in your operation.

### APPLICABLE CHUCK AND PIPE (FBM-300-2)

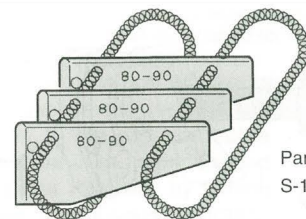
PARTS No.	S-125638-00	S-125638-01	S-125638-02	S-125638-03
PIPE SIZE	80~90	90~100	100~110	110~120

### APPLICABLE CHUCK AND PIPE (FBM-300-3)

PARTS No.	S-125638-04	S-125638-05	S-125638-06	S-125638-07	S-125638-08	S-125638-09	S-125638-10	S-125638-11	S-125638-12	S-125638-13	S-125638-14	S-125638-15
PIPE SIZE	120~130	130~140	140~150	150~160	160~170	170~180	180~190	190~200	200~210	210~220	220~230	230~240

### How to read figure on Chuck

The figure, which is shown on the Chuck, specifies its chucking capacity.  
As illustrated alongside, for instance, the figure 80-90 denotes 80-90 mm chucking capacity in FBM-300-2. Please place your order for the Chucks, referring to the illustration.



Parts No.  
S-158638-00

### NECESSARY QUANTITY OF CHUCKS AND STOP RINGS

Model	FBM-300-2		FBM-300-3		FBM-300-4 FULL SET	
	Chuck Capacity Parts Name	Qty	Chuck Capacity Parts Name	Qty	Chuck Capacity Parts Name	Qty
Chuck	80-90	3	120-130	3	80-90	3
	90-100	3	130-140	3	90-100	3
	100-110	3	140-150	3	100-110	3
	110-120	3	150-160	3	110-120	3
			160-170	3	120-130	3
			170-180	3	130-140	3
			180-190	3	140-150	3
			190-200	3	150-160	3
			200-210	3	160-170	3
			210-220	3	170-180	3
			220-230	3	180-190	3
			230-240	3	190-200	3
					200-210	3
					210-220	3
					220-230	3
				230-240	3	
Stop Ring	80-120	2	120-240	2	80-120	2
					120-240	2