



# SECTION V: SHIFTING TOOLS

2021

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**SHIFTING TOOLS** were designed primarily to open or close inner sleeve in several types of Sliding Sleeves.

There are many Types of Shifting Tools designed for specific applications and its use.



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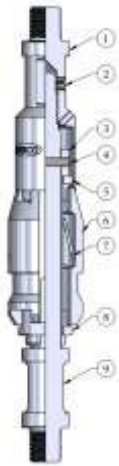
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Product Code: 42

## Type 'ROTBO' Shifting Tool Assembly: 1.250" – 4.562"

Rebco Type 'ROTBO' Shifting Tool is used to move the inner sleeve of several types of Sliding Sleeves.

The Alternate (Positive) Keys are also available. These Keys are used for specific applications.

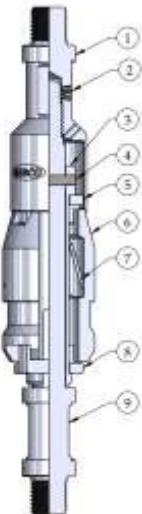


SLEEVE SIZE	1.250"	1.375"	1.500"	1.625"
ASSEMBLY NUMBER	42012012500	42012013700	42012015000	42012016200

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1				
2 *	SET SCREW	1				
3	COLLET	1				
4 *	SHEAR PIN	1				
5	TOP KEY RETAINER	1				
6	KEY	2				
7 *	SPRING	2				
8	LOWER KEY RETAINER	1				
9	BODY	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	1.39"	1.64"	1.63"	1.89"
BODY OD	1.24"	1.36"	1.42"	1.61"
LENGTH	11.1"	11.1"	12.4"	12.75"
MATERIAL	Alloy	Alloy	Alloy	Alloy
PIN THREAD	5/8" - 11	5/8" - 11	15/16" - 10	15/16" - 10
FISHING NECK SIZE	1.000"	1.000"	1.187"	1.187"
WEIGHT lbs (kg)	1.3 (.59)	2.3 (1.04)	4.0 (1.81)	4.5 (2.04)
Ref: ALTERNATE (Positive) KEY	42004	42005	42006	420180



SLEEVE SIZE	1.710"	1.781"	1.875"	2.125"
ASSEMBLY NUMBER	42012017100	42012017800	42012018700	42012021200

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1				
2 *	SET SCREW	1				
3	COLLET	1				
4 *	SHEAR PIN	1				
5	TOP KEY RETAINER	1				
6	KEY	2				
7 *	SPRING	2				
8	LOWER KEY RETAINER	1				
9	BODY	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	2.11"	2.08"	2.11"	2.49"
BODY OD	1.69"	1.75"	1.75"	1.97"
LENGTH	12.75"	12.75"	13.38"	13.3"
MATERIAL	Alloy	Alloy	Alloy	Alloy
PIN THREAD	15/16" - 10	15/16" - 10	15/16" - 10	15/16" - 10
FISHING NECK SIZE	1.187"	1.375"	1.375"	1.375"
WEIGHT lbs (kg)	4.7 (2.13)	4.8 (2.20)	5.0 (2.77)	5.5 (2.49)
Ref: ALTERNATE (Positive) KEY	42007	420137	4201153	4201388

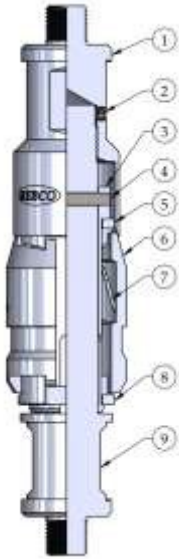


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## Type 'ROTBO' Shifting Tool Assembly: Continued

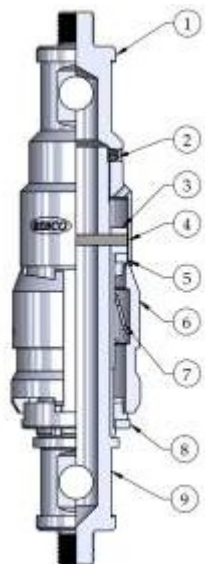


SLEEVE SIZE	2.188"	2.313"	2.562"	2.750"
ASSEMBLY NUMBER	42012021800	42012023100	42012025600	42012027500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1				
2 *	SET SCREW	1				
3	COLLET	1				
4 *	SHEAR PIN	1				
5	TOP KEY RETAINER	1				
6	KEY	2				
7 *	SPRING	2				
8	LOWER KEY RETAINER	1				
9	BODY	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	2.59"	2.59"	2.96"	3.02"
BODY OD	2.17"	2.17"	2.53"	2.71"
LENGTH	13.94"	13.94"	13.94"	14.19"
MATERIAL	Alloy	Alloy	Alloy	Alloy
PIN THREAD	15/16" - 10	15/16" - 10	15/16" - 10	1 1/16" - 10
FISHING NECK SIZE	1.750"	1.750"	1.750"	2.313"
WEIGHT lbs (kg)	7.3 (3.31)	7.60 (3.45)	9.00 (4.08)	14.0 (6.35)
Ref: <b>ALTERNATE</b> (Positive) KEY	42008	4201146	42003	420151



SLEEVE SIZE	2.813"	3.313"	3.688"	3.750"
ASSEMBLY NUMBER	42012028100	42012033100	42012036800	42012037500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1				
2 *	SET SCREW	1				
3	COLLET	1				
4 *	SHEAR PIN	1				
5	TOP KEY RETAINER	1				
6	KEY	2				
7 *	SPRING	2				
8	LOWER KEY RETAINER	1				
9	BODY	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	3.02"	3.62"	4.07"	4.15"
BODY OD	2.71"	3.25"	3.66"	3.67"
LENGTH	14.19"	16.19"	14.86"	14.86"
MATERIAL	Alloy	Alloy	Alloy	Alloy
PIN THREAD	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10
FISHING NECK SIZE	2.313"	2.313"	3.125"	3.125"
WEIGHT lbs (kg)	14.0 (6.35)	16.3 (7.39)	25.1 (11.39)	25.3 (11.5)
Ref: <b>ALTERNATE</b> (Positive) KEY	4201349	42009	42002	420010

**NOTE:** Ordering Type 'ROTBO' Shifting Tool Assembly with **POSITIVE** (Alternate) Keys, please specify

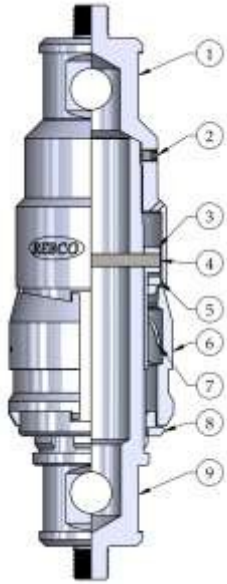


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## Type 'ROTBO' Shifting Tool Assembly: Continued



SLEEVE SIZE	3.813"	4.313"	4.562"
ASSEMBLY NUMBER	42012038100	42012043100	42012045600

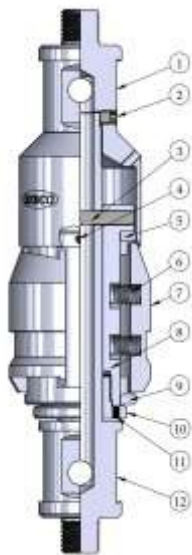
DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	TOP SUB	1			
2 *	SET SCREW	1			
3	COLLET	1			
4 *	SHEAR PIN	1			
5	TOP KEY RETAINER	1			
6	KEY	2			
7 *	SPRING	2			
8	LOWER KEY RETAINER	1			
9	BODY	1			
<b>REDRESS KIT</b> (* Included as part of Kit)					

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	4.12"	4.84"	4.93"
BODY OD	3.75"	4.25"	4.52"
LENGTH	14.86"	17.25"	17.38"
MATERIAL	Alloy	Alloy	Alloy
PIN THREAD	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10
FISHING NECK SIZE	3.125"	2.313"	3.125"
WEIGHT lbs (kg)	26.0 (11.79)	30.9 (14.05)	30.6 (13.88)
Ref: <b>ALTERNATE</b> (Positive) KEY	42001	420011	4201451

## New Type 'ROTBO' Shifting Tool Assembly: 3.437" – 3.562"

Rebco Type 'ROTBO' Shifting Tool is a new version of the 'ROTBO' Shifting Tool. The difference is that the Keys are expanded with an aid of Coil Springs.



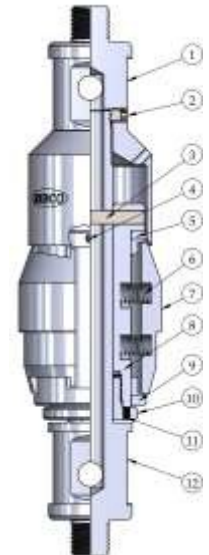
Selective Keys

SLEEVE SIZE	3.437"/3.562"		
ASSEMBLY NUMBER	Selective	420120242	
	Positive		420120278

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	TOP SUB	1			
2 *	SET SCREW	1			
3 *	SHEAR PIN	1			
4 *	SET SCREW	2			
5	TOP KEY RETAINER	1			
6 *	SPRING	4			
7	KEY	2			
8	CYLINDER	1			
9	LOWER KEY RETAINER	1			
10	RETAINER	1			
11 *	SET SCREW	2			
12	BODY	1			
<b>REDRESS KIT</b> (* Included as part of Kit)					

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	4.08"	4.08"
BODY OD	3.41"	3.41"
LENGTH	15.2"	15.2"
MATERIAL	Alloy	Alloy
PIN THREAD	1 1/16" - 10	1 1/16" - 10
FISHING NECK SIZE	2.313"	2.313"
WEIGHT lbs (kg)	18.7 (8.5)	18.7 (8.5)



Positive Keys



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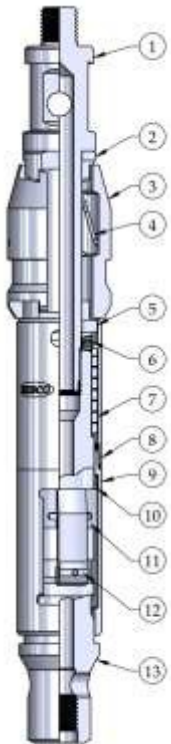
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Product Code: 142

## Type 'ROTBP' Selective Positioning Tool Assembly: 2" – 4 1/2"

Rebco Type 'ROTBP' Selective Positioning Tool is designed to select and downshift only, several types of Sliding Sleeves. The tool is made selective by the feature of the lower section.

Type 'ROTBP' Selective Positioning Tool has a trip design that holds the shifting keys retracted. This feature allows the Tool to pass through the Sliding Sleeve that is not required to be shifted.



NOMINAL SIZE	2"	2 1/2"	3"	3"
SLEEVE SIZE	1.875"	2.313"	2.750"	2.813"
ASSEMBLY NUMBER	142011118700	142011123100	142011127500	142011128100

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	FISHING NECK	1				
2	UPPER KEY RETAINER	1				
3	KEY	2				
4 *	KEY SPRING	2				
5	LOWER KEY RETAINER	1				
6 *	SET SCREW	1				
7	SPRING	1				
8	SPRING HOUSING	1				
9	DOG RETAINER	1				
10	SPRING	1				
11 *	SPLIT RING	2				
12	LOCATOR DOG	2				
13	MAIN MANDREL	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	1.94"	2.37"	2.84"	3.01"
LOCATOR DOG - MAX. OD	1.97"	2.40"	2.84"	2.90"
BODY OD	1.75"	2.18"	2.72"	2.72"
LENGTH	18.31"	18.94"	18.94"	18.94"
MATERIAL	Alloy	Alloy	Alloy	Alloy
PIN THREAD	15/16" - 10	15/16" - 10	1 1/16" - 10	1 1/16" - 10
FISHING NECK SIZE	1.375"	1.750"	2.313"	2.313"
BOTTOM THREAD CONNECTION	15/16" - 10	15/16" - 10	1 1/16" - 10	1 1/16" - 10
WEIGHT lbs (kg)	8.2 (3.72)	11.6 (5.26)	18.4 (8.35)	18.4 (8.35)

ACCESSORIES:					
Assembly Sleeve (NS)	167151413200	167151413250	167151413300	167151413300	
Test Sleeve (NS)	1671514187	1671514231	1671514275	1671514281	

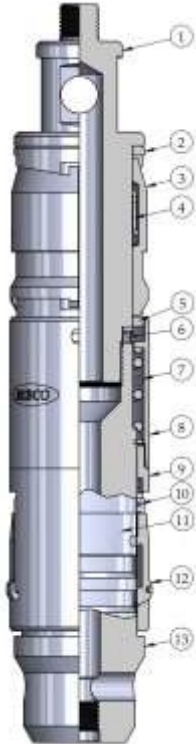


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## Type 'ROTBP' Selective Positioning Tool Assembly: Continued



NOMINAL SIZE	4 1/2"	4 1/2"
SLEEVE SIZE	3.688"	3.813"
ASSEMBLY NUMBER	142011136800	142011138100

DET	PART NAME	QTY	PART NO	PART NO
1	FISHING NECK	1		
2	UPPER KEY RETAINER	1		
3	KEY	2		
4 *	KEY SPRING	2		
5	LOWER KEY RETAINER	1		
6 *	SET SCREW	1		
7	SPRING	1		
8	SPRING HOUSING	1		
9	DOG RETAINER	1		
10	SPRING	1		
11 *	SPLIT RING	2		
12	LOCATOR DOG	2		
13	MAIN MANDREL	1		
<b>REDRESS KIT (* Included as part of Kit)</b>				

### ENGINEERING DATA:

KEYS EXPANDED – OD Min	4.07"	4.08"
LOCATOR DOG - MAX. OD	3.78"	3.91"
BODY OD	3.62"	3.75"
LENGTH	19.88"	19.88"
MATERIAL	Alloy	Alloy
PIN THREAD	1 1/16" - 10	1 1/16" - 10
FISHING NECK SIZE	2.313"	2.313"
BOTTOM THREAD CONNECTION	1 1/16" - 10	1 1/16" - 10
WEIGHT lbs (kg)	36.2 (16.42)	38.2 (17.35)

<b>ACCESSORIES:</b>	Assembly Sleeve (NS)	167151413450	167151413450
	Test Sleeve (NS)	1671514368	1671514381



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Product Code: 42

## Type 'ROTD-2' Shifting Tool Assembly: 1.900" – 4 1/2"

Rebco Type 'ROTD-2' Shifting Tool is used to provide a safe, selective and controlled method of opening and closing Type 'BL' Sliding Sleeve.

**NOTE:** Run Tool with the Collet (DET 4) up to Open Sleeves, or with Collet down (inverted position) to Close the Sleeves.

See Fig 1. For the proper adjustment procedures of Type 'ROTD-2' Shifting Tool



NOMINAL SIZE	1.900"		2 1/16"	
SIZE	1.43"	1.50"	1.56"	1.62"
ASSEMBLY NUMBER	42032021430	42032021500	42032021560	42032021620

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	FISHING NECK	1				
2 *	CAP SCREW	1				
3	MANDREL	1				
4	COLLET	1				
5	CONNECTING ADJUSTOR	1				
6 *	SET SCREW	1				
7	CONTROL SLEEVE	1				
8	NUT	1				
9 *	SET SCREW	1				
10	MANDREL SPRING	1				
11	RETRACTOR	1				
12	RETAINER SLEEVE	1				
13 *	SET SCREW	1				
14 *	DOG SPRING	2				
15	SHIFTING DOG	2				
16 *	PIN	2				
17	KEY	2				
18 *	SHEAR PIN	3				
19 *	SET SCREW	1				
20	DOG RETAINER	1				
21	THREAD PROTECTOR	1				
22 *	CAP SCREW	1				
<b>REDRESS KIT (* Included as part of Kit)</b>						

**ENGINEERING DATA:**

MAXIMUM OD - COLLET	1.468"	1.531"	1.593"	1.656"
MAXIMUM OD - BODY	1.375"		1.500"	
ADJUSTMENT LENGTH	14.94"			
PIN THREAD CONNECTION	15/16" - 10			
FISHING NECK SIZE	1.187"			
LENGTH	35.38"			
MATERIAL	Alloy			
WEIGHT lbs (kg)	8.6 (3.90)		8.7 (3.95)	



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## Type 'ROTD-2' Shifting Tool Assembly Continued



NOMINAL SIZE	2 3/8"		
SIZE	1.78"	1.81"	1.87"
ASSEMBLY NUMBER	42032021780	42032021810	42032021870

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	FISHING NECK	1			
2 *	CAP SCREW	1			
3	MANDREL	1			
4	COLLET	1			
5	CONNECTING ADJUSTOR	1			
6 *	SET SCREW	1			
7	CONTROL SLEEVE	1			
8	NUT	1			
9 *	SET SCREW	1			
10	MANDREL SPRING	1			
11	RETRACTOR	1			
12	RETAINER SLEEVE	1			
13 *	SET SCREW	1			
14 *	DOG SPRING	2			
15	SHIFTING DOG	2			
16 *	PIN	2			
17	KEY	2			
18 *	SHEAR PIN	3			
19 *	SET SCREW	1			
20	DOG RETAINER	1			
21	THREAD PROTECTOR	1			
22 *	CAP SCREW	1			
<b>REDRESS KIT</b> (* Included as part of Kit)					

### ENGINEERING DATA:

MAXIMUM OD - COLLET	1.807"	1.843"	1.906"
MAXIMUM OD - BODY	1.740"		
ADJUSTMENT LENGTH	15.69"		
PIN THREAD CONNECTION	15/16" - 10		
FISHING NECK SIZE	1.375"		
LENGTH	35.38"		
MATERIAL	Alloy		
WEIGHT lbs (kg)	14.4 (6.55)		





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## Type 'ROTD-2' Shifting Tool Assembly Continued



NOMINAL SIZE	2 7/8"		3 1/2"	
SIZE	2.25"	2.31"	2.75"	2.81"
ASSEMBLY NUMBER	42032022250	42032022310	42032022750	42032022810

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	FISHING NECK	1				
2 *	CAP SCREW	1				
3	MANDREL	1				
4	COLLET	1				
5	CONNECTING ADJUSTOR	1				
6 *	SET SCREW	1				
7	CONTROL SLEEVE	1				
8	NUT	1				
9 *	SET SCREW	1				
10	MANDREL SPRING	1				
11	RETRACTOR	1				
12	RETAINER SLEEVE	1				
13 *	SET SCREW	1				
14 *	DOG SPRING	2				
15	SHIFTING DOG	2				
16 *	PIN	2				
17	KEY	2				
18 *	SHEAR PIN	3				
19 *	SET SCREW	1				
20	DOG RETAINER	1				
21	THREAD PROTECTOR	1				
22 *	CAP SCREW	1				
<b>REDRESS KIT</b> (* Included as part of Kit)						

### ENGINEERING DATA:

MAXIMUM OD - COLLET	2.281"	2.307"	2.781"	2.843"
MAXIMUM OD - BODY	2.187"		2.687"	
ADJUSTMENT LENGTH	16.62"		17.12"	
PIN THREAD CONNECTION	15/16" - 10		1 1/16" - 10	
FISHING NECK SIZE	1.750"		2.313"	
LENGTH	39.38"		39.44"	
MATERIAL	Alloy			
WEIGHT lbs (kg)	19.8 (8.98)		31.4 (14.24)	

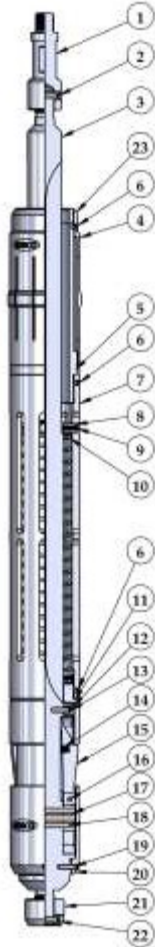


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**Type 'ROTD-2' Shifting Tool Assembly Continued**



NOMINAL SIZE	4 1/2"	
SIZE	3.68"	3.81"
ASSEMBLY NUMBER	42032023680	42032023810

DET	PART NAME	QTY	PART NO	PART NO
1	FISHING NECK	1		
2 *	CAP SCREW	1		
3	MANDREL	1		
4	COLLET	1		
5	CONNECTING ADJUSTOR	1		
6 *	SET SCREW	2		
7	CONTROL SLEEVE	1		
8	NUT	1		
9 *	SET SCREW	1		
10	MANDREL SPRING	1		
11	RETRACTOR	1		
12	RETAINER SLEEVE	1		
13 *	SET SCREW	1		
14 *	DOG SPRING	2		
15	SHIFTING DOG	2		
16 *	PIN	2		
17	KEY	2		
18 *	SHEAR PIN	3		
19 *	SET SCREW	1		
20	DOG RETAINER	1		
21	THREAD PROTECTOR	1		
22 *	CAP SCREW	1		
23	COLLET PROTECTOR	1		
<b>REDRESS KIT (* Included as part of Kit)</b>				

**ENGINEERING DATA:**

MAXIMUM OD - COLLET	3.743"	3.867"
MAXIMUM OD - BODY	3.036"	
ADJUSTMENT LENGTH	22.687"	
PIN THREAD CONNECTION	1 1/16" - 10	
FISHING NECK SIZE	2.313"	
LENGTH	47.5"	
MATERIAL	Alloy	
WEIGHT lbs (kg)	69.3 (31.45)	



**Fig 1.** Proper operation of 'ROTD-2' Shifting Tool requires that dimension 'A' be adjusted accurately and the proper Collet be installed prior to running the Tool.

NOM SIZE	SIZE	ADJUSTMENT 'A'	COLLET OD
1.900" 2 1/16"	1.43"	14 15/16"	1.468"
	1.50"		1.531"
	1.56"		1.593"
	1.62"		1.656"
2 3/8"	1.78"	15 11/16"	1.807"
	1.81"		1.843"
	1.87"		1.906"
2 7/8"	2.25"	16 5/8"	2.281"
	2.31"		2.343"
3 1/2"	2.75"	17 1/8"	2.781"
	2.81"		2.843"
4 1/2"	3.68"	22 11/16"	3.743"
	3.81"		3.867"