



# SECTION V: SHIFTING TOOLS

2013

JP042613

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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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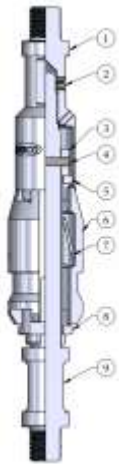
REBCO

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.

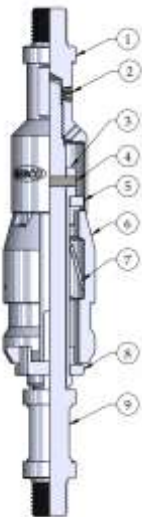


SLEEVE SIZE	1.250"	1.375"	1.500"	1.625"
ASSEMBLY NUMBER	42012012500	42012013700	42012015000	42012016200

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1	4201242	4201459	4201246	4201250
2 *	SET SCREW	1	185508210312	185508210312	185508210312	185508210312
3	COLLET	1	4201244	4201244	4201248	4201248
4 *	SHEAR PIN	1	9110130935	9110130935	9110141062	9110141062
5	TOP KEY RETAINER	1	4201458	4201458	4201247	4201251
6	KEY	2	4201455	4201460	4201443	4201444
7 *	SPRING	2	9000120	9000120	9000120	9000120
8	LOWER KEY RETAINER	1	4201243	4201461	4201335	4201337
9	BODY	1	4201245	4201245	4201249	4201249
REDRESS KIT (* Included as part of Kit)			42012024125	42012024137	42012024150	42012024162

### 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	4201439	4201234	4201234	4201391
2 *	SET SCREW	1	185508210312	185508210312	185508210312	185508210312
3	COLLET	1	4201248	4201235	4201235	4201235
4 *	SHEAR PIN	1	9110141062	9110141312	9110141312	9110141375
5	TOP KEY RETAINER	1	4201680	4201233	4201233	4201390
6	KEY	2	4201681	4201106	420131	4201387
7 *	SPRING	2	9000120	900044	900044	900044
8	LOWER KEY RETAINER	1	4201679	4201339	4201339	4201389
9	BODY	1	4201249	4201236	4201236	4201236
REDRESS KIT (* Included as part of Kit)			42012024171	42012024178	42012024187	42012024212

### 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



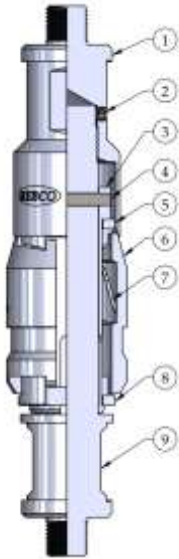
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## Type 'ROTBO' Shifting Tool Assembly: Continued

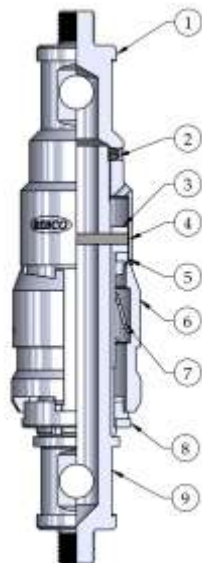


SLEEVE SIZE	2.188"	2.313"	2.562"	2.750"
ASSEMBLY NUMBER	42012021800	42012023100	42012025600	42012027500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1	4201240	4201240	4201454	4201252
2 *	SET SCREW	1	185508210312	185508210312	185508210312	185508210312
3	COLLET	1	4201238	4201238	4201238	4201346
4 *	SHEAR PIN	1	9110141620	9110141620	9110141620	9110152250
5	TOP KEY RETAINER	1	4201239	4201239	4201239	4201253
6	KEY	2	4201373	4201241	4201453	4201347
7 *	SPRING	2	900044	900044	900044	900044
8	LOWER KEY RETAINER	1	4201338	4201338	4201338	4201334
9	BODY	1	4201237	4201237	4201237	4201255
REDRESS KIT (* Included as part of Kit)			42012024231	42012024231	42012024231	42012024300

### 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: ALTERNATE (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	4201252	4201378	4201223	4201223
2 *	SET SCREW	1	185508210312	185508210312	185508210500	185508210500
3	COLLET	1	4201346	4201377	4201220	4201220
4 *	SHEAR PIN	1	9110152250	9110162980	9110153295	9110153295
5	TOP KEY RETAINER	1	4201253	4201376	4201225	4201225
6	KEY	2	4201345-1	4201380	4201226	4201226
7 *	SPRING	2	900044	900044	900044	900044
8	LOWER KEY RETAINER	1	4201334	4201375	4201340	4201340
9	BODY	1	4201255	4201379	4201222	4201222
REDRESS KIT (* Included as part of Kit)			42012024300	42012024331	42012024368	42012024381

### 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: ALTERNATE (Positive) KEY	4201349	42009	42002	420010

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



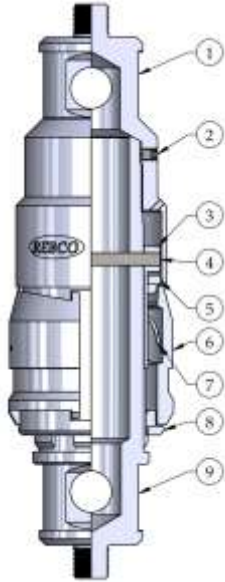
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## Type 'ROTBO' Shifting Tool Assembly: Continued



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

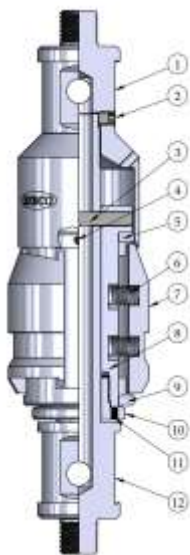
DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	TOP SUB	1	4201218	4201550	4201371
2 *	SET SCREW	1	185508210500	185508210500	185508210500
3	COLLET	1	4201220	4201549	4201369
4 *	SHEAR PIN	1	9110153295	9111463935	9111464109
5	TOP KEY RETAINER	1	4201219	4201548	4201367
6	KEY	2	4201221	4201551	4201370
7 *	SPRING	2	900044	9000122	9000122
8	LOWER KEY RETAINER	1	4201340	4201547	4201368
9	BODY	1	4201222	4201552	4201372
REDRESS KIT (* Included as part of Kit)			42012024381	42012024431	42012024456

### 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: ALTERNATE (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.



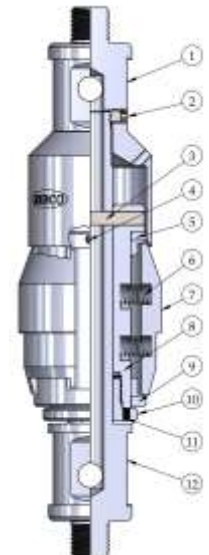
Selective Keys

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

DET	PART NAME	QTY	PART NO	PART NO
1	TOP SUB	1	4201576	4201576
2 *	SET SCREW	1	185507210437	185507210437
3 *	SHEAR PIN	1	9111483000	9111483000
4 *	SET SCREW	2	185506210500	185506210500
5	TOP KEY RETAINER	1	4201608	4201608
6 *	SPRING	4	900012	900012
7	KEY	2	4201639	4201836
8	CYLINDER	1	4201698	4201698
9	LOWER KEY RETAINER	1	4201640	4201640
10	RETAINER	1	4201699	4201699
11 *	SET SCREW	2	18551010312	18551010312
12	BODY	1	4201641	4201641
REDRESS KIT (* Included as part of Kit)			42012024242	

### 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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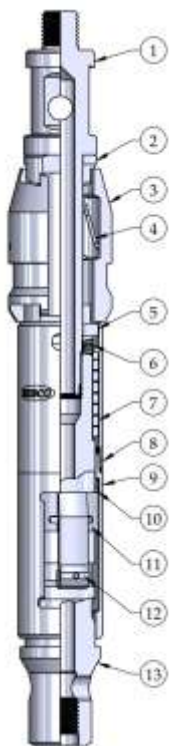
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Product Code: 142

## 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	14201118700	142011123100	142011127500	142011128100

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	FISHING NECK	1	1420121	1420117	142014	142014
2	UPPER KEY RETAINER	1	4201223	4201239	4201253	4201253
3	KEY	2	420131	4201241	4201347	4201345
4 *	KEY SPRING	2	900044	900044	900044	900044
5	LOWER KEY RETAINER	1	4201339	4201338	4201334	4201334
6 *	SET SCREW	1	None	185508210250	185508210250	185508210250
7	SPRING	1	900030	900032	900034	900034
8	SPRING HOUSING	1	1420119	1420115	142012	142012
9	DOG RETAINER	1	1420122	1420118	142013	142013
10	SPRING	1	900031	900033	900035	900035
11 *	SPLIT RING	2	41182	411813	411831	411831
12	LOCATOR DOG	2	411876	411874	411872	4118277
13	MAIN MANDREL	1	1420120	1420116	142011	142011
REDRESS KIT (* Included as part of Kit)			142011124200	142011124250	142011124300	142011124300

### 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



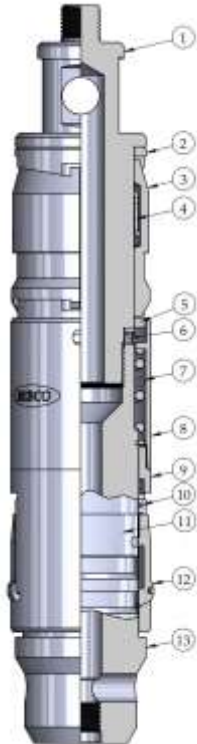
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## Type 'ROTBP' Selective Positioning Tool Assembly: Continued



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	142018	142018
2	UPPER KEY RETAINER	1	142015	142015
3	KEY	2	4201226	4201221
4 *	KEY SPRING	2	900044	900044
5	LOWER KEY RETAINER	1	1420130	142016
6 *	SET SCREW	1	185508210250	185508210250
7	SPRING	1	900036	900036
8	SPRING HOUSING	1	1420131	1420110
9	DOG RETAINER	1	1420132	142019
10	SPRING	1	900037	900037
11 *	SPLIT RING	2	411880	411880
12	LOCATOR DOG	2	411910	411884
13	MAIN MANDREL	1	142017	142017
REDRESS KIT (* Included as part of Kit)			142011124381	142011124381

### 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)

ACCESSORIES:	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	1700122800	1700122800	1700122800	1700122800
2 *	CAP SCREW	1	185606211000	185606211000	185606211000	185606211000
3	MANDREL	1	1700153400	1700153400	1700153400	1700153400
4	COLLET	1	1880190400	1880190500	1880190600	1880190700
5	CONNECTING ADJUSTOR	1	1960117300	1960117300	1960117300	1960117300
6 *	SET SCREW	1	18551110093	18551110093	18551110093	18551110093
7	CONTROL SLEEVE	1	1970156900	1970156900	1970156900	1970156900
8	NUT	1	1960118600	1960118600	1960118600	1960118600
9 *	SET SCREW	1	185506210500	185506210500	185506210500	185506210500
10	MANDREL SPRING	1	9000149	9000149	9000149	9000149
11	RETRACTOR	1	1960117600	1960117600	1960186400	1960186400
12	RETAINER SLEEVE	1	1960193200	1960193200	1960193300	1960193300
13 *	SET SCREW	1	18551110312	18551110312	18551110312	18551110312
14 *	DOG SPRING	2	9000143	9000143	9000143	9000143
15	SHIFTING DOG	2	1540130800	1540130800	1680102300	1680102300
16 *	PIN	2	18810204801	18810204801	18810204801	18810204801
17	KEY	2	1960173400	1960173400	1960173400	1960173400
18 *	SHEAR PIN	3	9110140868	9110140868	9110140868	9110140868
19 *	SET SCREW	1	18551110375	18551110375	18551110375	18551110375
20	DOG RETAINER	1	1700153300	1700153300	1700153300	1700153300
21	THREAD PROTECTOR	1	1700129100	1700129100	1700129100	1700129100
22 *	CAP SCREW	1	185606211000	185606211000	185606211000	185606211000
REDRESS KIT (* Included as part of Kit)			420320224143	420320224143	420320224143	420320224143

**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	1700122900	1700122900	1700122900
2 *	CAP SCREW	1	185606211250	185606211250	185606211250
3	MANDREL	1	1700157300	1700157300	1700157300
4	COLLET	1	1900170700	1880190800	1880190900
5	CONNECTING ADJUSTOR	1	1960119000	1960119000	1960119000
6 *	SET SCREW	1	185606210187	185606210187	185606210187
7	CONTROL SLEEVE	1	1960119100	1960119100	1960119100
8	NUT	1	1960119900	1960119900	1960119900
9 *	SET SCREW	1	185606210750	185606210750	185606210750
10	MANDREL SPRING	1	9000150	9000150	9000150
11	RETRACTOR	1	1960197300	1960197300	1960197300
12	RETAINER SLEEVE	1	1960197200	1960197200	1960197200
13 *	SET SCREW	1	18551110187	18551110187	18551110187
14 *	DOG SPRING	2	9000144	9000144	9000144
15	SHIFTING DOG	2	1970115500	1970115500	1970115500
16 *	PIN	2	18810207251	18810207251	18810207251
17	KEY	2	1960173500	1960173500	1960173500
18 *	SHEAR PIN	3	9110141330	9110141330	9110141330
19 *	SET SCREW	1	185506210500	185506210500	185506210500
20	DOG RETAINER	1	1700159000	1700159000	1700159000
21	THREAD PROTECTOR	1	1700111200	1700111200	1700111200
22 *	CAP SCREW	1	185606211000	185606211000	185606211000
REDRESS KIT (* Included as part of Kit)			420320224200	420320224200	420320224200

### 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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JP042613

REBCO

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



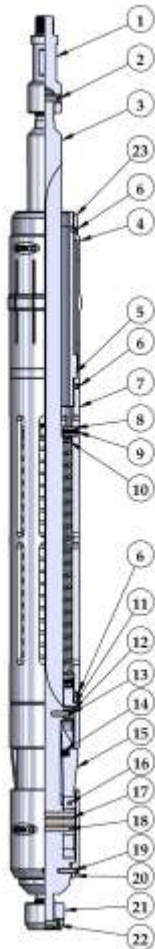
NOMINAL SIZE	2 7/8"		3 1/2"	
SIZE	2.25"	2.31"	2.75"	2.81"
ASSEMBLY NUMBER	42032022250	42032022310	42032022750	42032022810

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	FISHING NECK	1	1700111100	1700111100	1700123000	1700123000
2 *	CAP SCREW	1	185606211250	185606211250	185606211250	185606211250
3	MANDREL	1	1700108600	1700108600	1700119700	1700119700
4	COLLET	1	1880191000	1880191100	1880191200	1880191300
5	CONNECTING ADJUSTOR	1	1960149400	1960149400	1700136800	1700136800
6 *	SET SCREW	1	185606210250	185606210250	185606210250	185606210250
7	CONTROL SLEEVE	1	1960185600	1960185600	1700136900	1700136900
8	NUT	1	1960149500	1960149500	1960149500	1960149500
9 *	SET SCREW	1	185506211000	185506211000	185506211000	185506211000
10	MANDREL SPRING	1	9000141	9000141	9000142	9000142
11	RETRACTOR	1	1700109000	1700109000	1700119600	1700119600
12	RETAINER SLEEVE	1	1700108700	1700108700	1700119300	1700119300
13 *	SET SCREW	1	18551110312	18551110312	18551110312	18551110312
14 *	DOG SPRING	2	9000145	9000145	9000145	9000145
15	SHIFTING DOG	2	1960150100	1960150100	1960150100	1960150100
16 *	PIN	2	18811312501	18811312501	18811314371	18811314371
17	KEY	2	1700108900	1700108900	1700108900	1700108900
18 *	SHEAR PIN	3	9110141500	9110141500	9110142375	9110142375
19 *	SET SCREW	1	185606210375	185606210375	185606210500	185606210500
20	DOG RETAINER	1	1700108800	1700108800	1700119500	1700119500
21	THREAD PROTECTOR	1	1700111200	1700111200	1700119400	1700119400
22 *	CAP SCREW	1	185606211000	185606211000	185606211250	185606211250
<b>REDRESS KIT (* Included as part of Kit)</b>			<b>420320224250</b>	<b>420320224250</b>	<b>420320224350</b>	<b>420320224350</b>

### 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)	

## 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	1700123000	1700123000
2 *	CAP SCREW	1	185606211250	185606211250
3	MANDREL	1	2020193200	2020193200
4	COLLET	1	2020193000	2020192900
5	CONNECTING ADJUSTOR	1	2040164400	2040164400
6 *	SET SCREW	2	185606210250	185606210250
7	CONTROL SLEEVE	1	2020193300	2020193300
8	NUT	1	2020192500	2020192500
9 *	SET SCREW	1	185506211000	185506211000
10	MANDREL SPRING	1	9000129	9000129
11	RETRACTOR	1	2020192600	2020192600
12	RETAINER SLEEVE	1	2020192700	2020192700
13 *	SET SCREW	1	185606210500	185606210500
14 *	DOG SPRING	2	9000145	9000145
15	SHIFTING DOG	2	1960150100	1960150100
16 *	PIN	2	18811314371	18811314371
17	KEY	2	1700108900	1700108900
18 *	SHEAR PIN	3	9110143125	9110143125
19 *	SET SCREW	1	185606210500	185606210500
20	DOG RETAINER	1	2020193100	2020193100
21	THREAD PROTECTOR	1	1700119400	1700119400
22 *	CAP SCREW	1	185606211250	185606211250
23	COLLET PROTECTOR	1	2040164500	2040164500
REDRESS KIT (* Included as part of Kit)			420320224450	420320224450

### 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"