

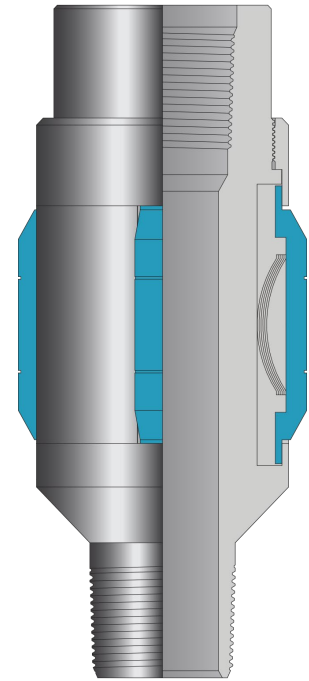
## Drag Assembly - Casing Collar Locator

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### Drag Assembly

The NOV Drag Assembly is designed with drag blocks supported with inconel springs. It is commonly run with selective acidizing equipment to anchor the bottom hole assembly enabling torque transmission to rotational valves.

The centralizing effect of the Drag Assembly increases tool life, especially in Cup Type Acid Tools.

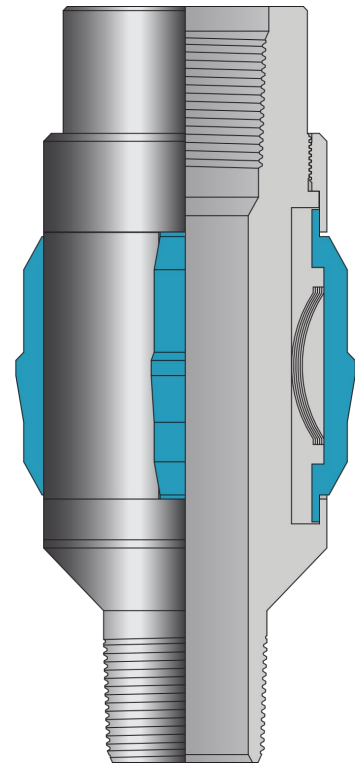


### Casing Collar Locator

The NOV Casing Collar Locator provides a simple and reliable method of locating casing collars with the tubing string to correlate tubing depth to logged depth. The tool is commonly run with selective acidizing tool assemblies to locate the perforation depth.

### Operation

The NOV Casing Collar Locator is installed as an integral part of the tubing string. To operate properly it must be installed above any drag block assemblies or tool using drag blocks or springs. The locator is designed to indicate the collars in the casing string when moving the tubing up the wellbore. Spring loaded pads on the locator expand into the recess of the casing coupling. The additional force required to collapse the pads to pass through the coupling is indicated at surface.



## Drag Assembly - Casing Collar Locator

### Technical Data – Drag Assembly

Casing				Drag Assembly		
Size in. (mm)	Weight Range lbf. (kgm)	Min. I.D. In. (mm)	Max. I.D. In. (mm)	Min. I.D. In. (mm)	Thread Connection	Product Number
4.500 114,30	9.5 - 11.6 14,14 - 17,26	4.000 101,60	4.090 103,89	1.933 49,10	2.375" EU 8 RD	10-052-0450
5.000 127,00	11.5 - 18.0 17,11 - 26,78	4.276 108,61	4.560 115,82	1.933 49,10	2.375" EU 8 RD	10-052-0500
5.500 139,70	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	1.933 49,10	2.375" EU 8 RD	10-052-0550
	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	2.408 61,16	2.875" EU 8 RD	10-052-0560
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	1.933 49,10	2.375" EU 8 RD	10-052-0570
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	2.408 61,16	2.875" EU 8 RD	10-052-0580
5.750 146,05	16.0 - 19.5 23,81 - 29,02	5.075 128,91	5.203 132,16	2.408 61,16	2.875" EU 8 RD	10-052-0600
	13.9 - 16.0 20,68 - 23,81	5.203 132,16	5.278 134,06	2.408 61,16	2.875" EU 8 RD	10-052-0600
6.625 168,28	24.0 - 32.0 35,71 - 47,62	5.675 144,15	5.921 150,39	2.408 61,16	2.875" EU 8 RD	10-052-0650
7.000 177,80	22.0 - 28.0 32,74 - 41,66	6.214 157,84	6.398 162,51	2.408 61,16	2.875" EU 8 RD	10-052-0700
	22.0 - 28.0 32,74 - 41,66	6.214 157,84	6.398 162,51	2.990 75,95	3.500" EU 8 RD	10-052-0710
	17.0 - 20.0 25,30 - 29,76	6.456 163,98	6.538 166,07	2.408 61,16	2.875" EU 8 RD	10-052-0720
	17.0 - 20.0 25,30 - 29,76	6.456 163,98	6.538 166,07	2.990 75,95	3.500" EU 8 RD	10-052-0730

## Drag Assembly - Casing Collar Locator

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Casing				Casing Collar Locator		
Size in. (mm)	Weight Range lbf. (kgm)	Min. I.D. In. (mm)	Max. I.D. In. (mm)	Min. I.D. In. (mm)	Thread Connection	Product Number
4.500 114,30	9.5 - 11.6 14,14 - 17,26	4.000 101,60	4.090 103,89	1.933 49,10	2.375" EU 8 RD	10-111-0450
5.000 127,00	11.5 - 18.0 17,11 - 26,78	4.276 108,61	4.560 115,82	1.933 49,10	2.375" EU 8 RD	10-111-0500
5.500 139,70	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	1.933 49,10	2.375" EU 8 RD	10-111-0550
	17.0 - 20.0 25,30 - 29,76	4.778 121,36	4.892 124,26	2.408 61,16	2.875" EU 8 RD	10-111-0560
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	1.933 49,10	2.375" EU 8 RD	10-111-0570
	13.0 - 15.5 19,34 - 23,06	4.950 125,73	5.044 128,12	2.408 61,16	2.875" EU 8 RD	10-111-0580
5.750 146,05	16.0 - 19.5 23,81 - 29,02	5.075 128,91	5.203 132,16	2.408 61,16	2.875" EU 8 RD	10-111-0600
	13.9 - 16.0 20,68 - 23,81	5.203 132,16	5.278 134,06	2.408 61,16	2.875" EU 8 RD	10-111-0610
6.625 168,28	24.0 - 32.0 35,71 - 47,62	5.675 144,15	5.921 150,39	2.408 61,16	2.875" EU 8 RD	10-111-0650
7.000 177,80	24.0 - 35.0 35,71 - 52,08	6.004 152,50	6.336 160,93	2.408 61,16	2.875" EU 8 RD	10-111-0700
	17.0 - 23.0 25,30 - 34,22	6.366 161,70	6.538 166,07	2.408 61,16	2.875" EU 8 RD	10-111-0710