

# OP One-Piece Expansion Joint

The OP one-piece expansion joint is utilized in the production tubing to provide stroke length when extreme longitudinal movement is expected during treatment or production.

## APPLICATION

- Single and dual completions

## BENEFITS

- Available in lengths required for most completion plans
- Provides tubing retrieval without removing packer

## FEATURES

- One-piece male and female members
- Available in numerous stroke lengths and materials
- Continuous seal surface
- Independent, multiple packing stacks
- Teflon® centralizing debris rings to protect male polished surface

As an added application, it can be used as a separation tool for removal of the production tubing string. Manufactured from premium metals and elastomers, the one-piece design of each of the two main body parts eliminates multiple body joints and reduces leak potential in hostile conditions.

Packing for either standard- or high-temperature applications is available. The OP joint is supplied with a blank overshoot. Retrieving heads are available in three configurations with either a left- or right-hand release orientation.

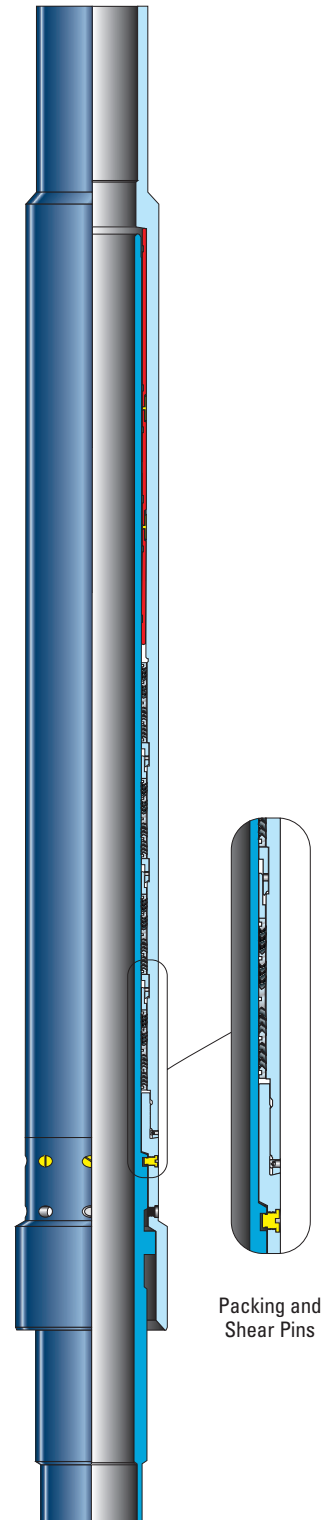
## DESCRIPTION AND OPERATION

The OP expansion joint is assembled in the production tubing string. The shear pins may be easily changed on the surface to meet well conditions before running the tool. The number of shear pins required is determined by the weight of the tubing and completion equipment below the OP joint. The total shear value of the pins must be sufficient to prevent premature shearing while running and during any subsequent application of pressure to the tubing.

After the completion is installed and the packer is set, the shear pins are parted to allow the OP joint to stroke. If cooling of the tubing string is expected, then the tubing contraction alone may be sufficient to shear the pins. Alternatively, the pins may be sheared mechanically by pulling up on the string, then positioning the expansion joint properly after shearing has occurred.

If thermal expansion is predicted, then the pins should be sheared by pulling up on the string. After the pins have sheared, the string should be lowered to shoulder, then lifted to the expected expansion position of the tool. This distance must not be greater than the maximum available stroke.

If it becomes necessary to pull the tubing string, the OP expansion joint can be separated, leaving the slick joint and packer in the well. This is particularly advantageous if the packer is a drillable, permanent type. When tubing integrity is required again, the overshoot running-head design ensures easy reconnection of the receptacle to the slick joint.



Packing and Shear Pins

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The completion can also be installed with a retrievable packer. If the packer must be retrieved, the running head must be substituted for a retrieving head. The running head will securely latch onto the slick joint, enabling the entire tubing string to be pulled.

An optional landing nipple may be incorporated into the upper portion of the male connector of the OP joint. Before separation of the joint, a blanking plug may be installed by standard slickline methods in the landing nipple to isolate the formation.

The OP is supplied with a blank overshot head. Retrieving heads are available in six configurations that may be substituted for the blank overshot head and used to retrieve the male member of the OP joint.

## OP One-Piece Expansion Joint Specifications

Tubing		Expansion Joints				
OD (in. [mm])	Weight (lbm/ft)	Min. Casing Size for OEJ		Max. OD <sup>†</sup> (in. [mm])	Min. ID <sup>‡</sup> (in. [mm])	Stroke (ft [mm])
		(in. [mm])	(lbm/ft)			
3.500 [88.9]	9.3	7.000 [177.8]	32.0	5.875 [149.2]	2.441 [62.0]	23.0 [7.59]
4.500 [114.3]	12.8	7.000 [177.8]	32.0	5.875 [149.2]	3.750 [95.3]	10.0 [3.30]
					16.0 [5.28]	
		9.625 [244.5]	53.5	8.250 [209.6]	3.500 [88.9]	16.0 [5.28]
					20.0 [6.60]	
5.000 [127.0]	15.0	7.000 [177.8]	32.0	5.875 [149.2]	3.750 [95.3]	20.0 [6.60]
			29.0	5.937 [150.8]	4.000 [101.6]	
5.500 [139.7]	17.0	9.625 [244.5]	53.5	5.875 [149.2]	4.500 [114.3]	20.0 [6.60]
						25.0 [8.25]
7.000 × 5.500 [177.8 × 139.7]	29.0 × 15.5	9.625 [244.5]	53.5	8.250 [209.6]	4.500 [114.3]	20.0 [6.60]
	32.0 × 23.0					16.0 [5.28]

<sup>†</sup> OD of blank overshot.

<sup>‡</sup> Maximum ID through tool (Minimum ID will vary with type of nipple profile ordered.).

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