Pipe Body Specification		
Nominal OD	in	4.5
Nominal ID	in	2.75
Design		Welded
Heavy Weight Type		Standard
Pipe Body Grade		Standard HW
Approximate Length	ft	31.7
Max Upset OD	in	4.688
Tong Length includes hardbanding if applicable		

HWDP Assembly Performance		
Adjusted Weight *	lbs/ft	37.21
Fluid Displacement *	US gal/ft	0.569
	bbls/ft	0.01354
Fluid Capacity *	US gal/ft	0.309
	bbls/ft	0.00735
Drift Size	in	2.5
Pipe Burst **	psi	18,720
Pipe Collapse **	psi	17,229
Pipe Cross Sectional Area of OD	in^2	15.9
Pipe Cross Sectional Area of ID	in^2	5.94
Pipe Section Modulus	in^3	7.698
Pipe Polar Section Modulus	in^3	15
Pipe Tensile Strength	lbs	548,100
Pipe Torsional Strength	ft-lbs	40,700
Tool Joint/Pipe Body Torsional Ratio		1.2
* At Nominal Wall Thickness	** With no axial load or bending in string	
Note:Nominal burst calculated at 87.5% RBW per API	Note:Oil field barrel equivalent to 42 US gal	

The Technical information contained herein, including the product performance sheet and other attached documents, is for reference only and should not be consider as a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. NOV Grant Prideco cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. HW Drill Pipe assembly properties are calculated based on uniform OD and wall thickness. No safety factor is applied. The information provided for various inspection classes and for various wear conditions (remaining body wall) is for information only and does not represent or imply acceptable operating limits. It is the responsibility of the customer and the end user to determine the appropriate performance ratings, acceptable use of the product, maintain safe operating practices, and to apply a prudent safety factor suitable for the application. For API connections that have different pin and box IDs, tool joint ID refers to the pin ID. Per Chapter DS, Section DS-16 of the drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.

Tool Joint Specification		
Connection Type and Size		Delta™ 425
SmoothEdge™ Height	in	N/A
Tool Joint SMYS	psi	130,000
Connection OD	in	5.375
Connection ID	in	2.75
Connection ID Chamfer	in	3.0
Pin Tong	in	27.0
Box Tong	in	27.0
Thread Compound Friction Factor (FF)		1.0
Number of Wearpads		1
Wearpad Length (per Wearpad)	in	26.0

Tool Joint Performance		
Max. Make-Up Torque (Recommended)	ft-lbs	**34,100 [1]**
Tension at Shoulder Separation @ Max. MUT	lbs	N/A
Tension at Connection Yield @ Max. MUT	lbs	574,200
Min. Make-Up Torque	ft-lbs	**24,300**
Tension at Shoulder Separation @ Min. MUT	lbs	910,400
Tension at Connection Yield @ Min. MUT	lbs	933,100
Tensile Strength	lbs	933,100
Torsional Strength	ft-lbs	48,700
Min. TJ OD for Counterbore	in	4.914
Balanced OD	in	5.35

The maximum make-up torque should be applied when possible.

To maximize connection operational tensile, a MUT (T4) =24,900 .

1. Extended MUT applied.

Advisories and Warnings for HWDP

Advisories:

Warnings:

Connection Wear Table		
Connection: Delta™ 425 5.375 " x 2.75 " (130 KSI SMYS) Friction Factor: 1.0		
Tool Joint OD (in)	**Max MUT (ft-lbs)**	**Min MUT (ft-lbs)**
5.375	34100	24300
5.333	33600	24000
5.291	32400	23200
5.249	31200	22300
5.207	30100	21500
5.165	29000	20700
5.124	27800	19900
5.082	26700	19100
5.04	25600	18300
4.998	24500	17500
4.956	23500	16800
4.914	22400	16000

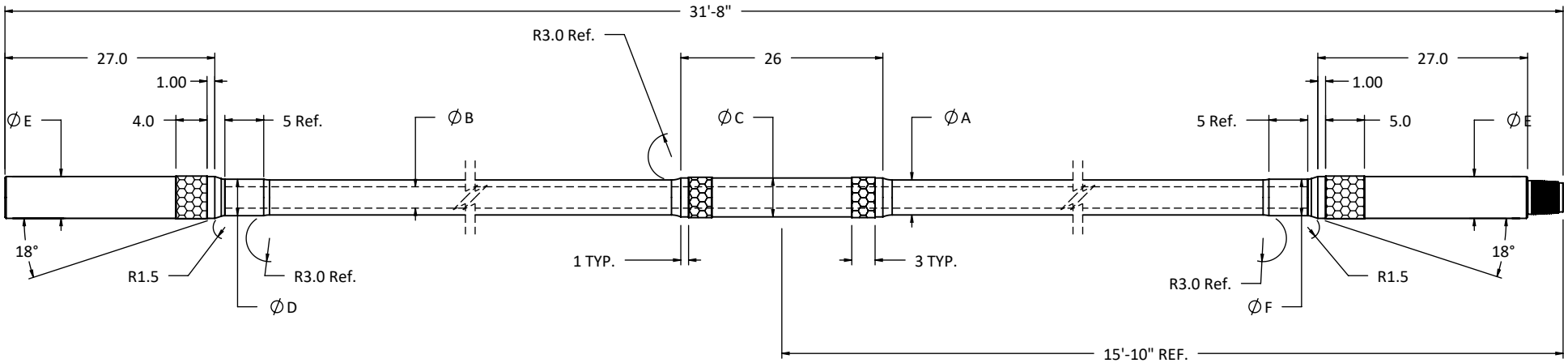
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All references to any internal standards or specifications are per the current edition/revision at the point of manufacturing, unless otherwise stated. All references to any external standards or specifications are per the current edition/revision at the original purchase order (P.O.) date, unless otherwise stated.

Duraband NC 3/32 in. Raised Hardbanding
on Box Tool Joint

3/32in. Raised Duraband NC Hardbanding On Wearpad(s)

Duraband NC 3/32 in. Raised Hardbanding
on Pin Tool Joint



Delta™ 425
Standard Box
w/ Xmark™ + Benchmark
ID Chamfer 3

Delta™ 425
Standard Pin
w/ Xmark™ + Benchmark
ID Chamfer 3

	Tube					Tool Joint		Drift
Nominal HWDP Size (In)	Tube Dia. ∅A (In)	Nominal Tube ID ∅B (in)	OD of Wearpad(s) ∅C (in)	OD of Box End Upset ∅D (in)	OD of Pin End Upset ∅F (in)	Outside Dia. ∅E (in)	Inside Dia. (in)	Min OD of 10ft Long Drift Bar (in)
4.5	4.5	2.75	5	4.688	4.688	5.375	2.75	2.5

Symbol Designates where hardbanding is to be applied.

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL

TITLE:

HWDP Line Drawing

HWDP - Standard
4.5 in. x 2.75 in. x Range 2 Overall
5.375 in. x 27 in. Pin TJ Tong And 27 in. Box TJ Tong
Delta™ 425 Xmark™ + Box x Delta™ 425 Xmark™ + Pin

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Steven Kubeczka		
DRAWING STATE	DATE	
Uncontrolled	4/29/26	
REFERENCED QUOTE		SCALE
2026-143148	A	NONE

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