

## Safe Swivel™ Joint – Swivelpole R Series STRUCTURAL CERTIFICATION

Form: Structural Certificate  
Job Reference: T-16-077\_rev1  
6<sup>th</sup> September 2016

Dear Sir,

### Re: Safe Swivel™ Joint assembly (Swivelpole R Series) for Structural Certification

We have assessed the structural capacity of the following products manufactured by Swivelpole:

Swivelpole R1-32-HG Safe Swivel™ Joint – DRG No. C-NA-R1-32-HG (Rev 4)  
Swivelpole R1-40-HG Safe Swivel™ Joint – DRG No. C-NA-R1-40-HG (Rev 4)  
Swivelpole R1-50-HG Safe Swivel™ Joint – DRG No. C-NA-R1-50-HG (Rev 4)

Tenco Engineers Pty Ltd, Jindalee, Western Australia, commissioned and witnessed destructive load testing of the above items. Testing was arranged in a purpose-built load rig. Load was applied to generate a bending moment equivalent to the capacity of the incoming top pole. The rationale of the testing is such that the specifier can have confidence that the Safe Swivel™ Joint assembly is of equal or greater strength than the existing pole. The following summarizes the capacities of poles typically used with the Safe Swivel™ Joint assembly and the load exceeded in testing. The tabulated capacities represent the loading in which testing was terminated and the joint remained functional:

Safe Swivel™ Joint Part Number	Maximum Pole Top Sizes		Pole Bending moment Capacity $\phi M_s$ (kNm)	Joint Capacity Exceeded in testing (kNm)
R1-32-HG	DN32	42.2 / 1.66" x 3.4 / .133" GR350	1.63	2.0
R1-40-HG	DN40	48.3 / 1.90" x 3.7 / .145" GR350	2.32	3.0
R1-50-HG	DN50	60.3 / 2.375" x 3.9 / .154" GR350	3.90	4.1

We therefore confirm the use of the Safe Swivel™ Joint system to maintain the original design intent of the existing pole by virtue of the joint capacity exceeding that of the top pole as per the sizes in the chart above.

The details of each Safe Swivel™ Joint can be found on the aforementioned drawings




Chris Tenni MIEAust CPEng NER  
Director & Principal Engineer - Structures  
Tenco Engineers Pty. Ltd.

Australia

Africa

Asia

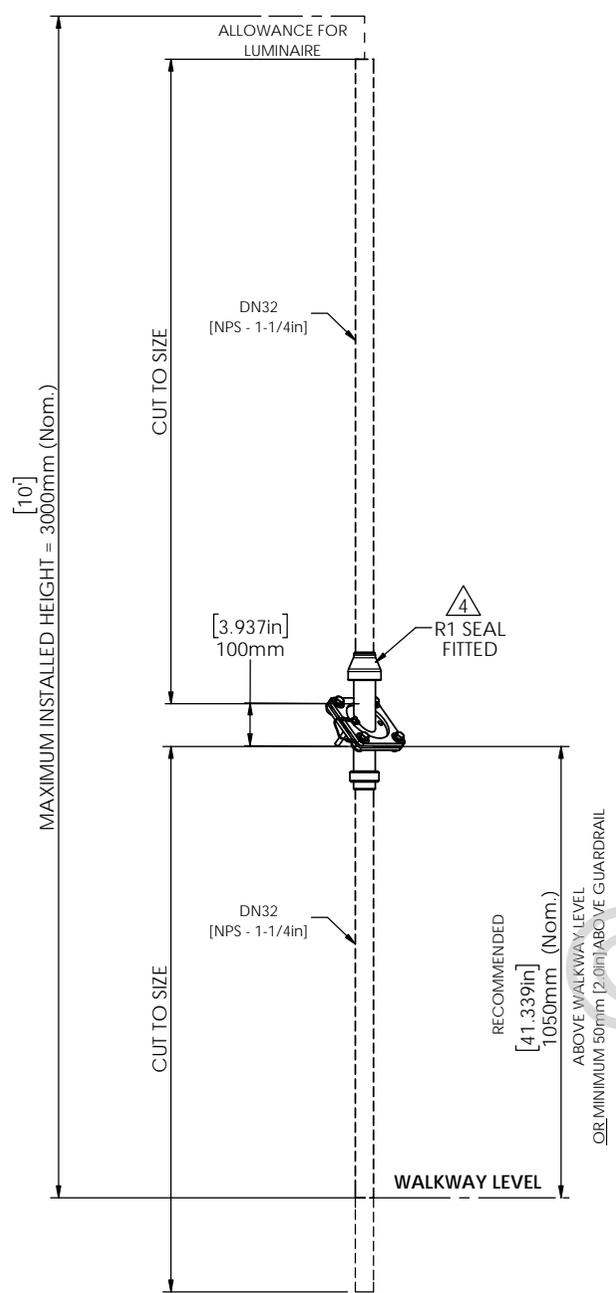
Europe

North America

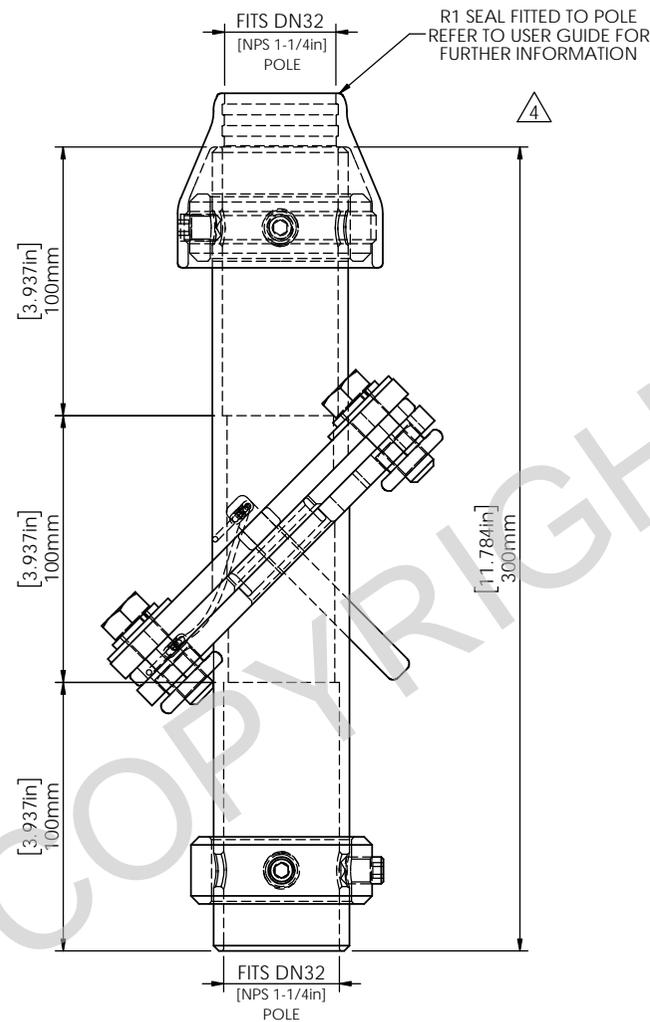
South America

[www.swivelpole.com](http://www.swivelpole.com) | [sales@swivelpole.com](mailto:sales@swivelpole.com)

Australia: T: +61 8 9582 0870 • R.O.B. Australia Pty Ltd T/A Swivelpole™ Australia • ABN 48 100 915 866  
Canada: T: +1 855 309 4023 • Swivelpole™ (CA) LTD • B/N 845484047  
USA: T: +1 855 979 4835 • Swivelpole™ Group (USA) LLC • EIN 46-1116237



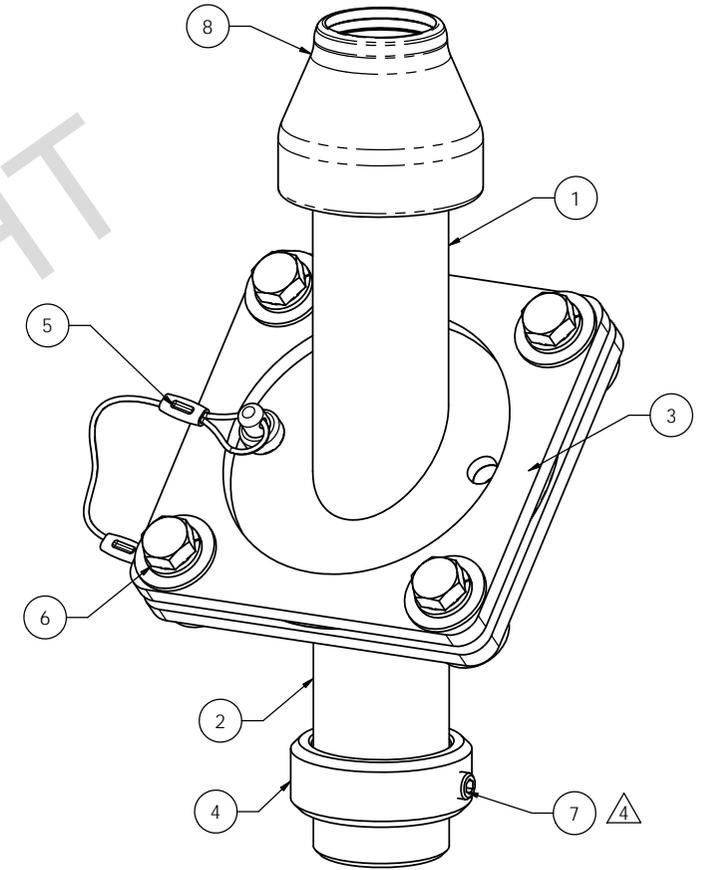
**INSTALLED VIEW**



**HIDDEN DETAIL VIEW**  
**PART NUMBER = R1-32-HG**

MATERIAL = Steel (ASTM A36 & B36.10)  
 FINISH = Hot Dipped Galvanized (ASTM A123)  
 WEIGHT = 5.1kg [11.2 lb]

ITEM No.	QTY.	PART NUMBER	DESCRIPTION (DETAIL)
1	1	R-T32-HG	DN32 [NPS 1-1/4in] TOP SECTION
2	1	R-B32-LR-HG	DN32 [NPS 1-1/4in] BASE SECTION
3	1	CP08-150-001-HG	8mm CLAMP PLATE
4	2	RC32-HG	DN32 [NPS 1-1/4in] LOCKING COLLAR
5	1	SP10-HG	SAFETY PIN AND CABLE
6	4	FSNK-001-DM	M12 FASTENER KIT
7	4	M10x16GS-HG	GRUB SCREWS M10
8	1	R1-32-SEAL	DN32 - R1 SEAL



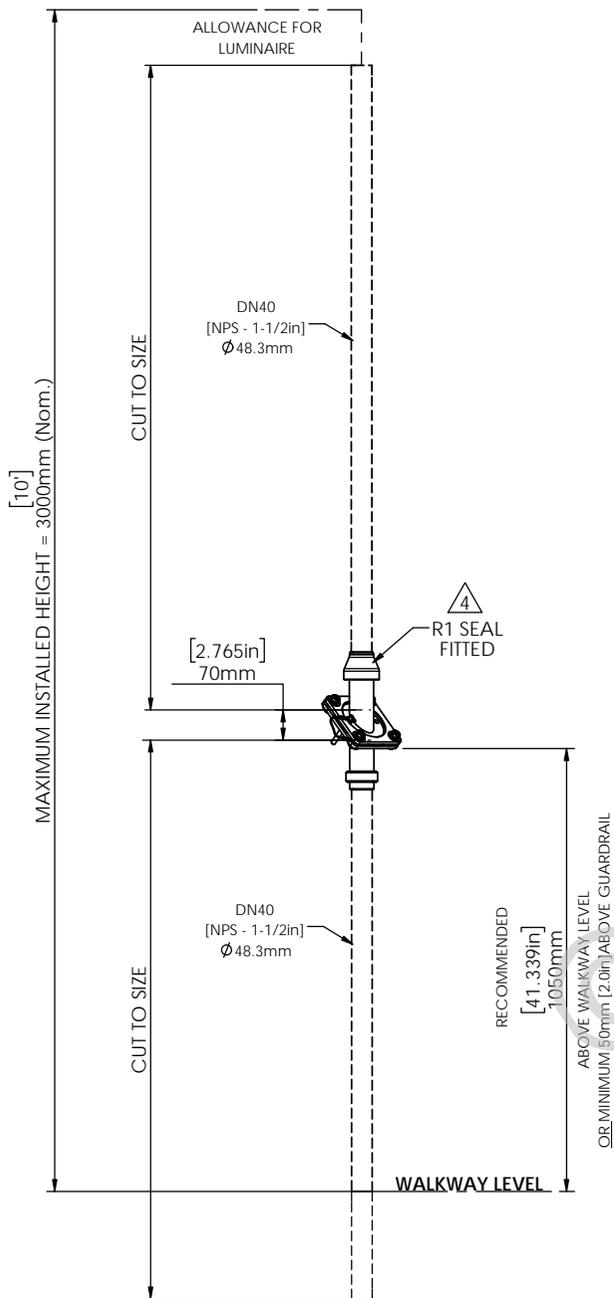
**ASSEMBLED ISOMETRIC VIEW**

Scan Code with QR Reader app for more Safe Swivel Joint Product Information

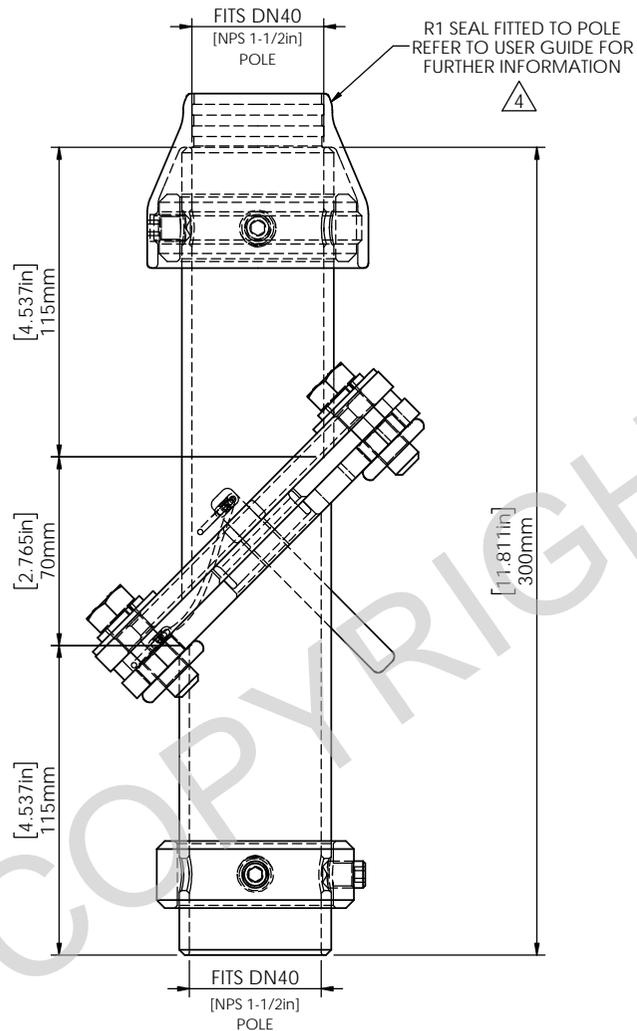
**PATENTED PRODUCTS**  
[www.swivelpole.com](http://www.swivelpole.com)

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ALL DIMENSIONS ARE IN MILLIMETERS/INCHES	PROJECT <b>SWIVELPOLE</b>	SERIES / CODE <b>R</b>	PART NUMBER <b>R1-32-HG</b>	(RQ1259)
DRAWN BY <b>AD</b>	DATE <b>06-10-09</b>	TITLE <b>Swivelpole™ R1 DN32 [NPS 1-1/4in] Safe Swivel Joint General Assembly</b>		
CHECKED BY <b>FB</b>	DATE <b>15-06-10</b>	DRG No <b>C-NA-R1-32-HG</b>		
APPROVED BY <b>PP</b>	DATE <b>16-06-10</b>	SCALE <b>1:2</b>	REV <b>4</b>	A3



**INSTALLED VIEW**

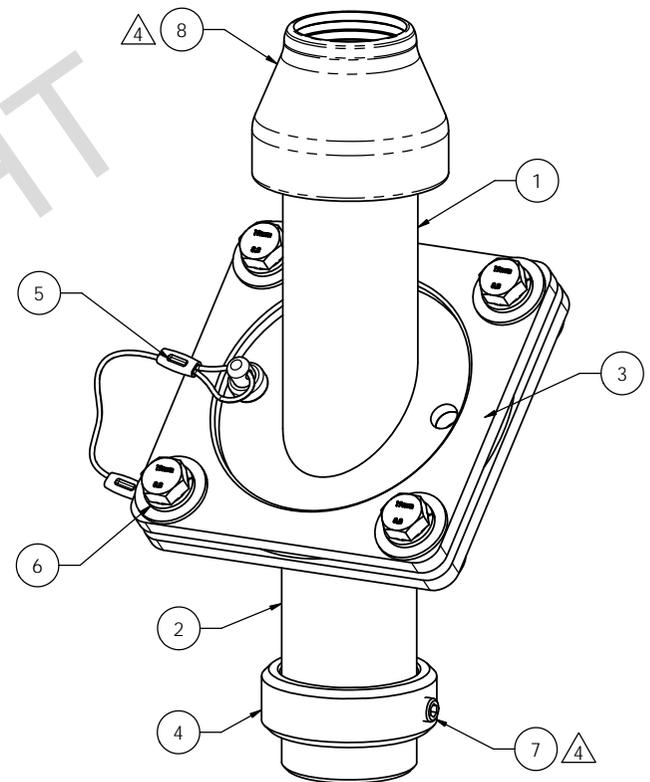


**HIDDEN DETAIL VIEW**

**PART NUMBER = R1-40-HG**

MATERIAL = Steel (ASTM A36 & B36.10)  
 FINISH = Hot Dipped Galvanized (ASTM A123)  
 WEIGHT = 5.1kg [11.2 lb]

ITEM No.	QTY.	PART NUMBER	DESCRIPTION (DETAIL)
1	1	R-T40-HG	DN40 [NPS 1-1/2in] TOP SECTION
2	1	R-B40-LR-HG	DN40 [NPS 1-1/2in] BASE SECTION
3	1	CP08-150-001-HG	8mm CLAMP PLATE
4	2	RC40-HG	DN40 [NPS 1-1/2in] LOCKING COLLAR
5	1	SP10-HG	SAFETY PIN AND CABLE
6	4	FSNK-001-DM	M12 FASTENER KIT
7	4	M10x16GS-HG	GRUB SCREWS M10
8	1	R1-40-SEAL	DN40 - R1 SEAL



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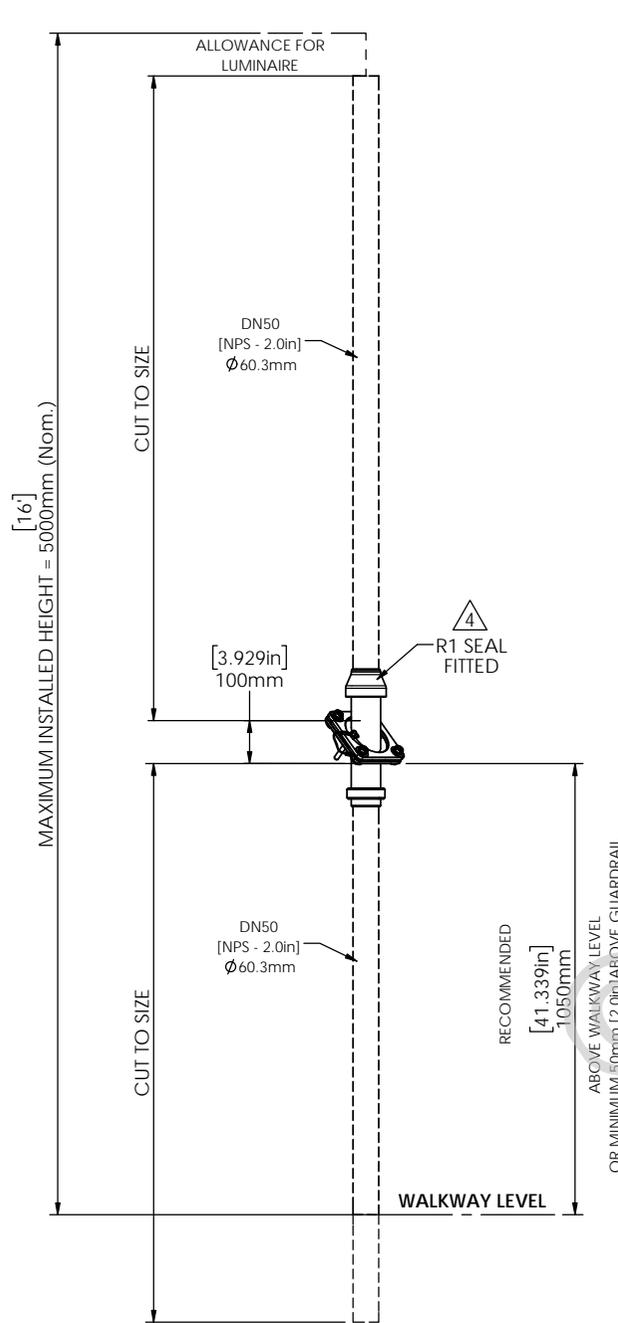
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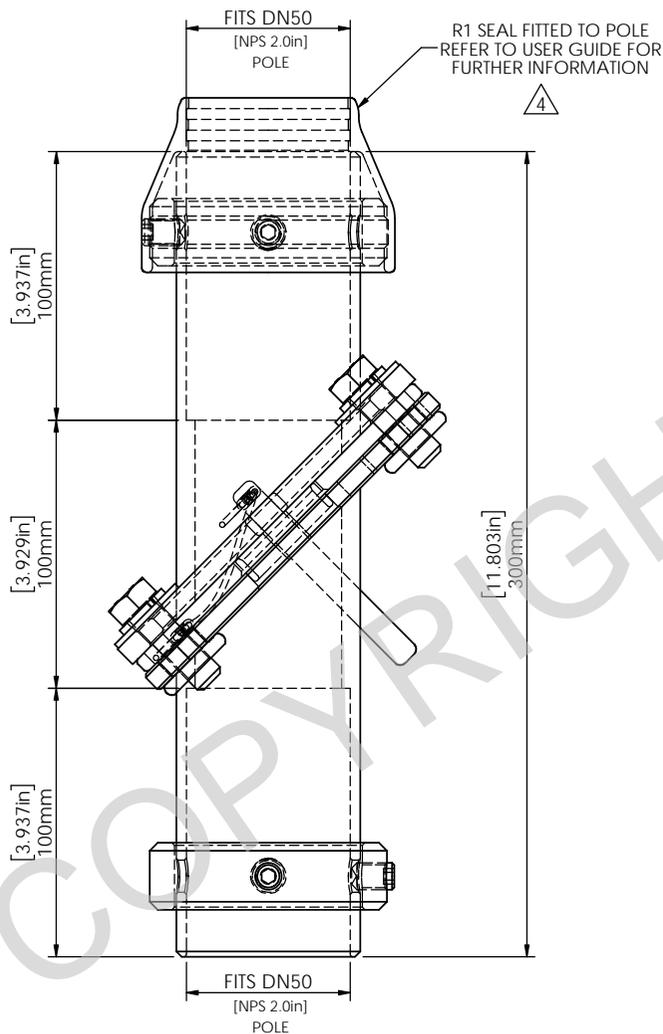
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ALL DIMENSIONS ARE IN MILLIMETERS/INCHES	PROJECT	SERIES / CODE	PART NUMBER	
	SWIVELPOLE	R	R1-40-HG	(RQ1259)
DRAWN BY	AD	DATE	06-10-09	TITLE
CHECKED BY	FB	DATE	25-03-10	Swivelpole™ R1
APPROVED BY	PP	DATE	30-03-10	DN40 [NPS 1-1/2in] Safe Swivel Joint
THIRD ANGLE PROJECTION	SCALE		1:2	DRG No
				C-NA-R1-40-HG
				REV
				4
				A3



**INSTALLED VIEW**

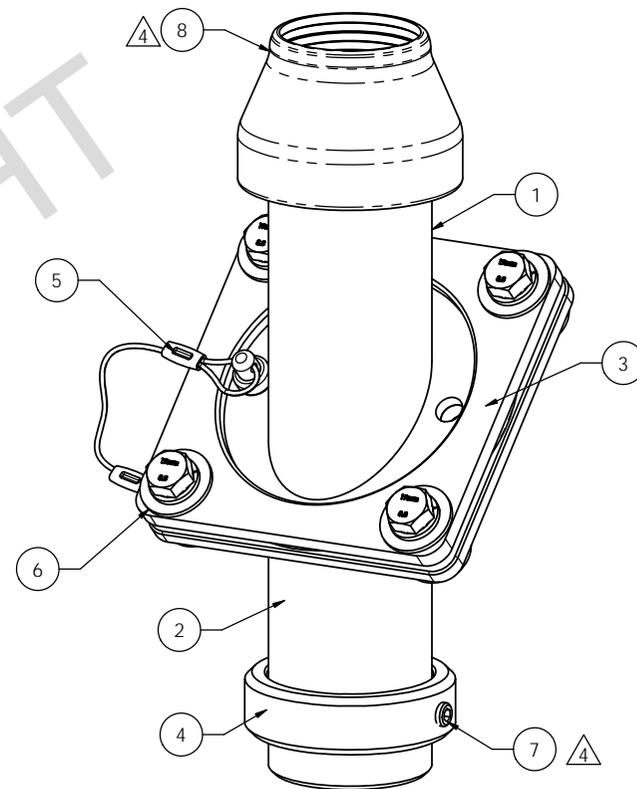


**HIDDEN DETAIL VIEW**

**PART NUMBER = R1-50-HG**

MATERIAL = Steel (ASTM A36 & B36.10)  
 FINISH = Hot Dipped Galvanized (ASTM A123)  
 WEIGHT = 6.1kg [11.2 lb]

ITEM No.	QTY.	PART NUMBER	DESCRIPTION (DETAIL)
1	1	R-T50-HG	DN50 [NPS 2.0in] TOP SECTION
2	1	R-B50-LR-HG	DN50 [NPS 2.0in] BASE SECTION
3	1	CP08-150-001-HG	8mm CLAMP PLATE
4	2	RC50-HG	DN50 [NPS 2.0in] LOCKING COLLAR
5	1	SP10-HG	SAFETY PIN AND CABLE
6	4	FSNK-001-DM	M12 FASTENER KIT
7	4	M10x16GS-HG	GRUB SCREWS M10
8	1	R1-50-SEAL	DN50 - R1 SEAL



**ASSEMBLED ISOMETRIC VIEW**



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ALL DIMENSIONS ARE IN MILLIMETERS/INCHES	PROJECT <b>SWIVELPOLE</b>	SERIES / CODE <b>R</b>	PART NUMBER <b>R1-50-HG</b>	(RQ1259)
DRAWN BY <b>AD</b>	DATE <b>06-10-09</b>	TITLE <b>Swivelpole™ R1 DN50 [NPS 2.0in] Safe Swivel Joint General Assembly</b>		
CHECKED BY <b>FB</b>	DATE <b>25-03-10</b>	DRG No <b>C-NA-R1-50-HG</b>		
APPROVED BY <b>PP</b>	DATE <b>30-03-10</b>	SCALE <b>1:2</b>	REV <b>4</b>	<b>A3</b>