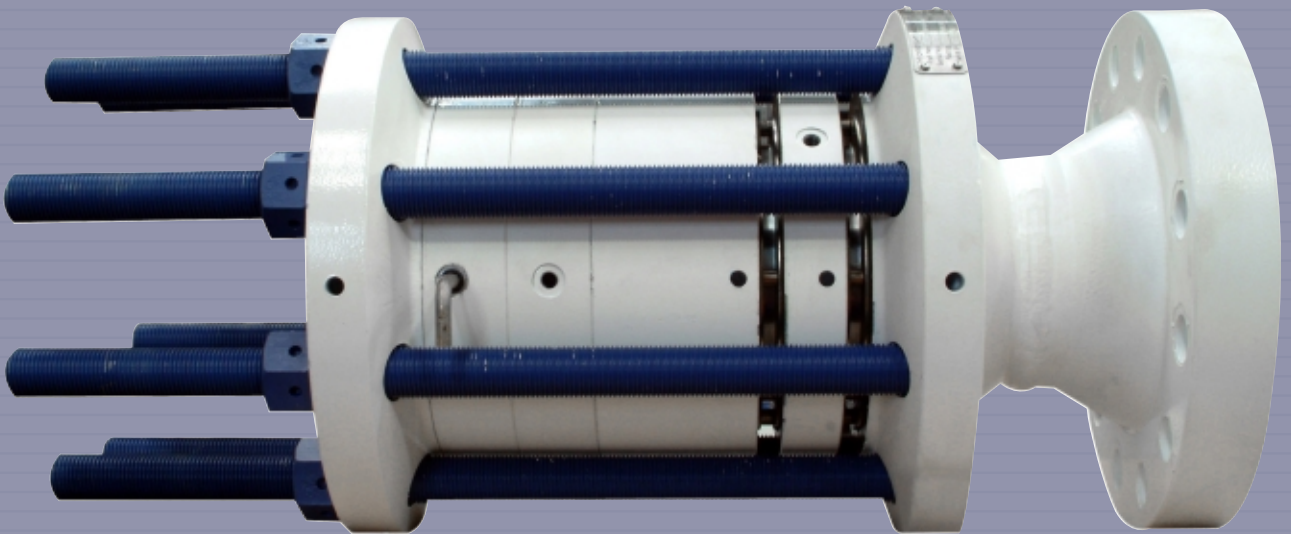


QUICKFLANGE MORGRIP™ PIPELINE CONNECTORS



- STOCKED IN PASADENA TX TO 16" 900LB ■
- UP TO 42" BY SPECIAL MANUFACTURE ■
- UNIQUE METAL/GRAPHITE SEAL ■
- UNIQUE WELD-STRENGTH GRIPPING SYSTEM ■
- REMOVABLE AND REUSABLE ■
- COMPREHENSIVE 3rd PARTY APPROVAL ■

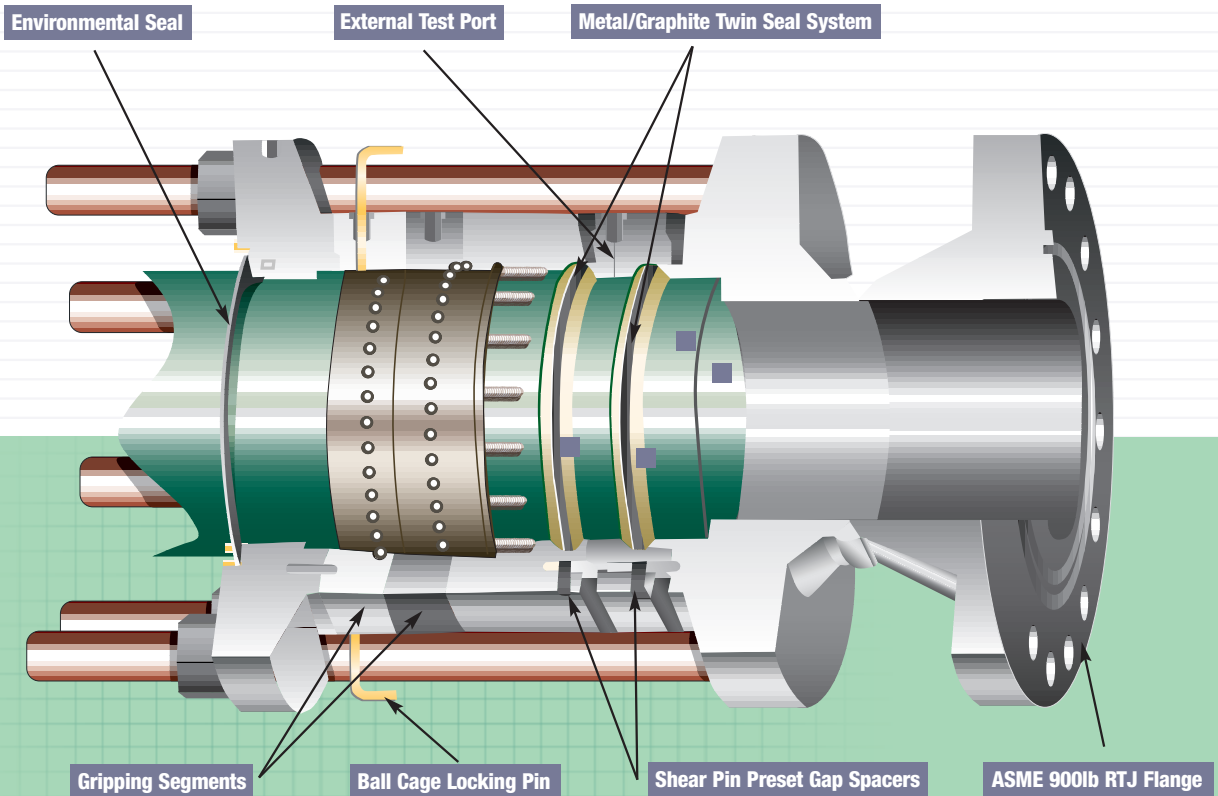


INNOVATIVE PIPELINE PRODUCTS

TECHNICAL DATA...

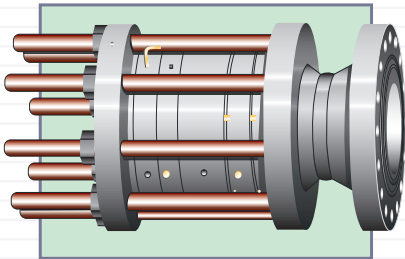


As the connector bolts are tightened, the components move together, simultaneously compressing the seals and activating the ball gripping mechanism. Pre-set gap spacers have been replaced by simple shear pins and other mechanisms simplified to ensure as few subsea tasks as possible. The external pressure test is all that remains to prove a successful activation.



QUICKFLANGE MORGRIP™ PIPELINE CONNECTORS

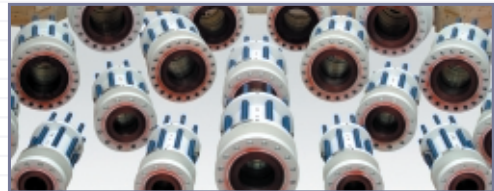
Quickflange from MORGRIP™ is the high specification pipeline connector used for permanent subsea repair and tie-in applications around the world.



With its successful MORGRIP™ supply history of over 1100 connectors Hydratight Sweeney now offers Quickflange - which provides the benefits of MORGRIP™ at a competitive price. Quickflange employs patented and unique weld-strength grip and metal/graphite sealing systems in a connector simplified for easy installation.

There is no similar product that has more comprehensive third party approvals than MORGRIP™ which offers as standard:

- Compliance with API 6H
- DNV Type Approval up to 42" and 2500lb (in accordance with RP-F104)
- Lloyds Register Approval -all sizes and pressure ratings



■ APPLICATIONS

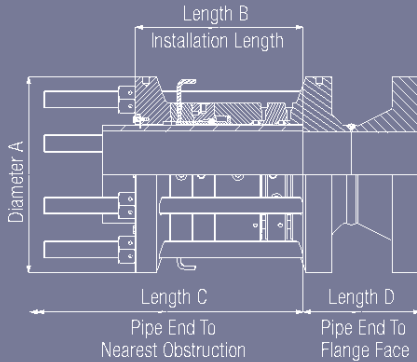
Standard Quickflange is terminated by a 900lb RTJ flange and is installed by customer personnel through simple Hydratight Sweeney bolt tightening. The product is also simple to remove and to re-set ready for use in other typical applications such as:

- Pipeline spool repair (with and without misalignment flanges).
- Riser Repair (above and below waterline).
- Pipeline tie-in.
- Quickflange metal seals compliment those of ball flanges and RTJ flanges.
- Quickflange out-performs 9/10 welds in terms of fatigue.
- Quickflange has a design life of 30 years.
- Quickflange is easily installed by customer personnel.



MORGRIP™

QUICK, SIMPLE SOLUTIONS TO PIPE REPAIR...



STOCK QUICKFLANGE DATA

GENERAL SPECIFICATIONS

Minimum Pipe Material Specification:	API 5L X52
Operating Temperature:	-40°C to +250°C
Environmental Seals:	Standard
Connector Flange Rating:	ANSI/ASME 900lb pressure rating

Pipe NB Size	ANSI/ASME Pipeline Pressure Rating	Minimum Wall Thickness for Full Pressure Rating	Diameter A in (mm)	Length B in (mm)	Length C in (mm)	Length D in (mm)	Approx Weight lbs (kg)	Quickflange Bolting			Matting Flange Bolting	
								No. of bolts & size	HTS tensioner ref	HTS tool pressures psi	No. of bolts & size	HTS tensioner ref
6"	900lb	Sch 40 (0.280in / 7.11mm)	14.96 (380)	15.00 (382)	28.35 (720)	9.49 (241)	514 (233)	8 off 1.3/8"	SS32	12,000	12 off 1.1/8"	SS31
	600lb								Ref A	13,000		Ref Z
	300lb											
	150lb											
8"	900lb	Sch 60 (0.406in / 10.31mm)	18.15 (461)	16.50 (419)	30.71 (780)	10.47 (266)	896.56 (407)	8 off 1.5/8"	SS32	16,000	12 off 1.3/8"	SS32
	600lb								Ref B	13,000		Ref A
	300lb	Sch 40 (0.322in / 8.18mm)										
	150lb											
10"	900lb	Sch 60 (0.500in / 12.7mm)	21.5 (546)	18.43 (468)	33.78 (858)	12.87 (327)	1491.18 (677)	8 off 1.7/8"	SS33	17,000	16 off 1.3/8"	SS32
	600lb								Ref D	14,500		Ref A
	300lb	Sch 30 (0.307in / 7.79mm)										
	150lb											
12"	900lb	Sch XS (0.500in / 12.7mm)	23.15 (588)	18.31 (465)	33.03 (839)	13.15 (334)	1616.62 (733)	10 off 1.3/4"	SS33	16,000	20 off 1.3/8"	SS32
	600lb	Ref C							14,500	Ref A		
	300lb	Sch 40 (0.406in / 10.46mm)										
	150lb											
14"	900lb	Sch 60 (0.594in / 15.08mm)	27.16 (690)	20.83 (529)	38.58 (980)	10.74 (273)	2266.75 (1028)	8 off 2.1/4"	SS34	16,500	20 off 1.1/2"	SS32
	600lb								Ref E	14,000		Ref B
	300lb	Sch 40 (0.438in / 11.12mm)										
	150lb											
16"	900lb	Sch 60 (0.656in / 16.66mm)	32.28 (820)	27.44 (697)	45.98 (1168)	12.01 (305)	4102.29 (1861)	12 off 2.1/4"	SS34	16,000	20 off 1.5/8"	SS32
	600lb								Ref E	13,000		Ref B
	300lb	Sch 40 (0.500in / 12.7mm)										
	150lb	Sch 30 (0.375in / 9.52mm)										

n.b. tool pressures are for the stated Hydratight Sweeney tensioners only



HYDRATIGHT SWEENEY LTD. MORGRIP PRODUCTS, 2440 Pasadena Freeway, Pasadena, Texas 77506, US.
Tel: +1 713 860 4200 Fax: +1 713 860 4201 Email: houston@hydratightsweeney.com

HYDRATIGHT SWEENEY LTD. MORGRIP PRODUCTS, Bentley Road South, Darlaston, West Midlands, WS10 8LQ, England.
Tel: +44 121 50 50 600 Fax: +44 121 50 50 800 Email: morgrip@hydratightsweeney.com

HYDRATIGHT MORGRIP™ STRENGTH UNDER PRESSURE