

Original Chiksan[®] swivel joints

Chiksan swivel joints deliver significantly longer life, superior performance, and reduced maintenance. Designed for standard and sour gas services, these world proven fittings come in 3/8 to 12-inch sizes and can handle pressures from vacuum to 20,000 psi. Many different Chiksan assembly configurations are available. These styles can be combined in an unlimited variety of ways to suit practically any installation. Available end connections are threaded, integral Weco[®] wing union, beveled for welding, or flanged. Like all pressure containing products, Chiksan swivels require special handling. **(See warnings and cautions, pg. 88).**

1. Steamlined bore minimizes flow restrictions

Smooth, round bore design minimizes turbulence and pressure drop, Longsweep and TripleStep swivel joints have extra-long radius elbows that optimize flow characteristics and extend life in the ball race areas when handling abrasives at extremely high pressures.

2. Proven packing design

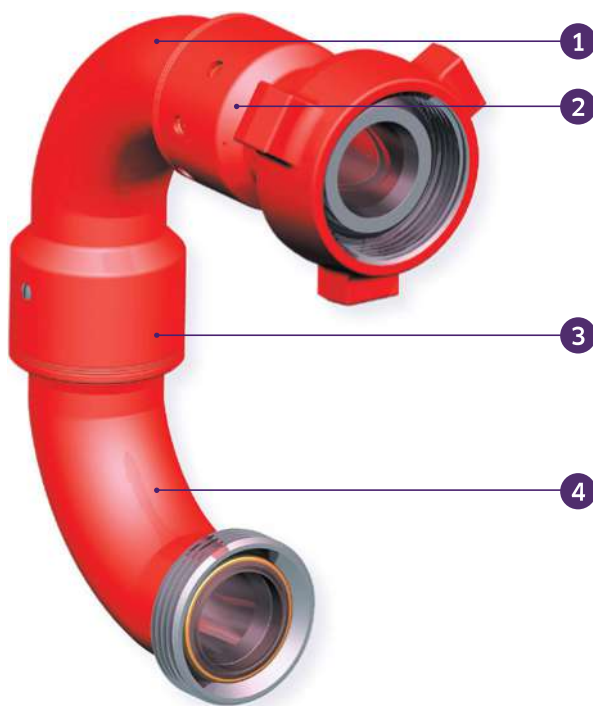
Industry leading packing design integrates an anti-extrusion ring that serves as a retainer and bearing to reduce friction between the resilient packing material and the packing chamber as the joint is rotated.

3. Bearings key to rotation, strength

To assure long, dependable service, Chiksan dual and tri-race ball bearing swivels are designed to meet or exceed load capacities and service conditions. All ball races are either flame hardened, carburized and hardened, or have “snap-in” stainless steel ball races.

4. Field repairable

If packing, bearings, or ball plugs should need replacing, easy-to-use field repair kits are available.



Swivel Family	Color coding	Cold working pressure psi (bar)	Material	End connections	Nominal sizes, In.								Notes	
					¾	½	1	1 ¼	1 ½	2	3	4		
High-pressure swivel joints	Silver	6,000 (414)	Carbon steel	Female line pipe threads	▶	▶	▶	▶	▶	▶	▶	▶	▶	1,3,5
Low-pressure swivel joints	No color coding	600 (41)	Ductile Iron	Threaded		▶	▶	▶	▶	▶	▶	▶	▶	6
		175 (12)	Ductile Iron	Flanged							▶	▶		6
		1,000 (69)	Carbon Steel	Threaded or beveled						▶	▶	▶		6
		275 (19)	Carbon Steel	Flanged						▶	▶	▶		6
Longsweep® swivel joints	Olive green (sour gas)	7,500 (517)	Alloy steel	Weco figure 1002 union							▶			2
	Olive green (sour gas)	10,000 (690)	Alloy steel	Weco figure 1502 union			▶			▶	▶	▶		2
	Black	10,000 (690)	Alloy steel	Female line pipe threads			▶		▶	▶				1,3,4
	Olive green (sour gas)	15,000 (1034)	Alloy steel	Weco figure 2202 union						▶	▶			2
	Red	15,000 (1034)	Alloy steel	Weco figure 1502 union			▶		▶	▶				1
	Light blue	20,000 (1034)	Alloy steel	Weco figure 2002 union						▶				1
TripleStep swivel joints	Silver	6,000 (414)	Alloy steel	Weco figure 602 union								▶		1
	Black	10,000 (690)	Alloy steel	Weco figure 1002 union								▶	▶	1
	Red	15,000 (1034)	Alloy steel	Weco figure 1502 union								▶	▶	1
	Light blue	20,000 (1034)	Alloy steel	Weco figure 2002 union								▶		1
TripleStep Plus swivel joints	Red	15,000 (1034)	Alloy steel	Weco figure 1505 union								▶		1

- 1 3/8 - to 4-inch sizes furnished with nitrile packing and brass or stainless steel anti-extrusion ring.
- 2 Furnished with Fluoroelastomer or HNBR packing and stainless steel anti-extrusion ring. TechnipFMC does not warrant the performance of any elastomer seal for sour gas service.
- 3 Power make-up must be used for line pipe threaded connections to achieve rated cold working pressure.
- 4 3-inch size rated at 10,000 psi cold working pressure with integral Weco® 1002 union ends only.
- 5 5-inch size available with threaded or bevelled ends; limited to 3,000 psi cold working pressure.
- 6 3/4, 2 1/2, 6 and 8-inch sizes also available.

Sour gas service:

TechnipFMC manufactures Chiksan sour gas swivel joints in accordance with the National Association of Corrosion Engineers (NACE) Standard MR-01-75 and the American Petroleum Institute's (API) Standard RP-14-E. These swivel joints are specially heat-treated and inspected for controlled hardness. Because the specially heat treated steel required for sour gas service does not provide a strong enough bearing surface, Chiksan sour gas swivel joints use patented snap-in ball races to assure extra strength and high load-bearing capacity. Fluoroelastomer or HNBR packing is used to isolate the races from the line fluid.

- All body materials meet ASTM or AISI standards.
- Consult factory for special sizes, styles, end connections, or packing units.

TripleStep swivel joints

Designed especially for abrasive, high pressure well servicing applications, TripleStep swivel joints have been proven against competitive swivels in customer-witnessed flow loop tests and field applications. The patented three step ball race design provides significantly greater erosion allowance without increasing swivel joint size or weight. The result: TripleStep swivel joints deliver increased life, superior performance, and reduced maintenance...lasting 1.7 to 5 times longer than competitive swivels.

1. Exclusive design delivers longer life, lower cost

TripleStep swivel joints deliver the highest bending and axial load capacities in the industry. They also eliminate rejections from excessive wear in the ball race areas as well as swivel seizures due to corrosion and brinnelling of the ball races.

2. Advanced material selection

The TripleStep swivel joint is manufactured from forged alloy steel with a closely controlled, proprietary chemical composition and heat treatment to ensure superior toughness, ductility, case depth, case hardness, and core strength.

3. Instream packing for long seal life

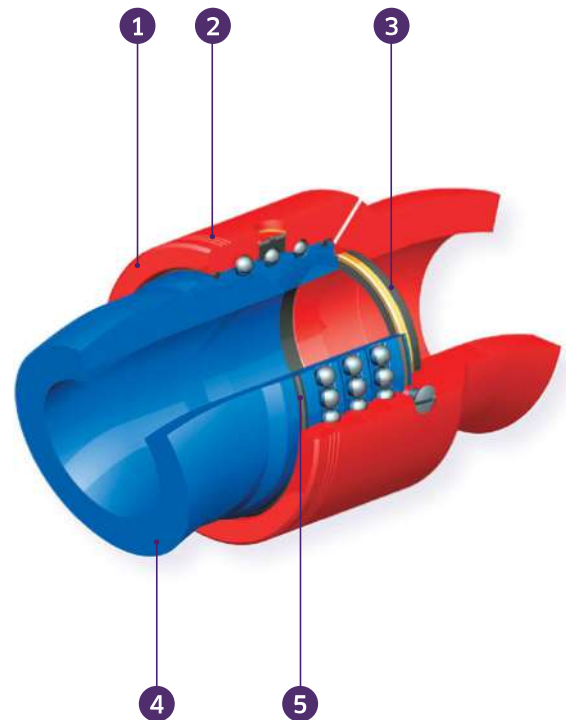
World proven instream packing technology provides unsurpassed sealability and reliability in the harshest oilfield conditions. An integral anti-extrusion ring serves as a retainer and bearing to reduce friction between the resilient packing material and the packing chamber as the joint is rotated.

4. Unmatched erosion allowance

Patented three step design coupled and bearing race geometry adds significant wall thickness under the male races and bearing load capacity without increasing swivel joint size or weight.

5. Eliminates routine maintenance

An improved environmental seal reduces the potential for corrosion in the ball race area. The integrity of the seal and the use of a high-performance grease during initial assembly virtually eliminates the need for periodic greasing.



TSi+(TripleStep) swivel joints

The TSi+ adds a second seal which significantly extends the swivel life, customers have seen over one year of intensive use without disassembly, by stopping aggressive flow and internal erosion due to failure of the primary seal.

- ▶ 6,000 psi cold working pressure; 3 inch.
- ▶ 10,000 psi cold working pressure; 3 inch.
- ▶ 15,000 psi cold working pressure; 3 inch.

Recommended service

For the most extreme, abrasive, high-pressure points in fracturing, choke-and-kill, cementing or acidizing applications.

TSi (TripleStep) swivel joints

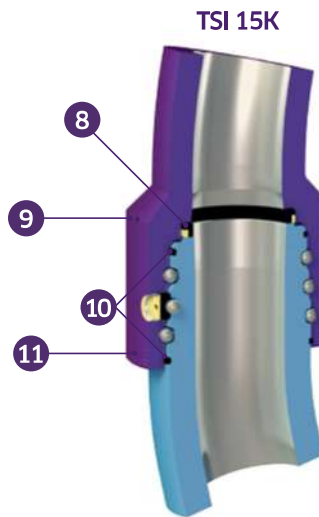
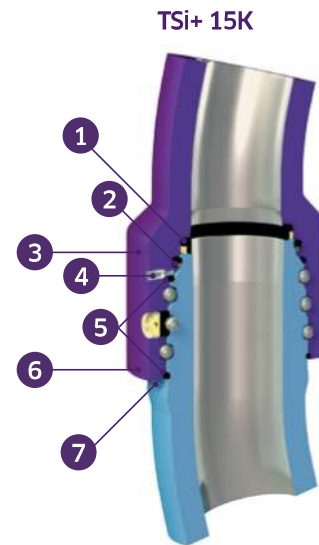
Recommended service

Long-radius elbows designed especially for high-pressure abrasive applications such as fracturing, choke-and-kill lines, cementing and circulating hoses, acidizing, and test lines.

- ▶ 6,000 psi cold working pressure; 3 inch size.
- ▶ 10,000 psi cold working pressure; 3 and 4-inch sizes.
- ▶ 15,000 psi cold working pressure; 3 and 4 inch.
- ▶ 20,000 psi cold working pressure; 3 inch size.

Thicker where it counts

Competitive swivels wear out first in the ball races, meaning they must be disassembled for inspection. TripleStep swivels wear in the elbows, meaning they can be inspected and returned to service without disassembly. The TripleStep design places more material under the male ball race - a location that computational fluid dynamic analysis and field testing shows to be a high erosion area.



TSi+

1. Primary packing
2. Second primary S-seal packing
3. 2 marks on bell front = 2 seals
4. Weep hole
5. O-ring
6. 3 marks on bell end = triple step
7. 2 marks on male = 2 seals

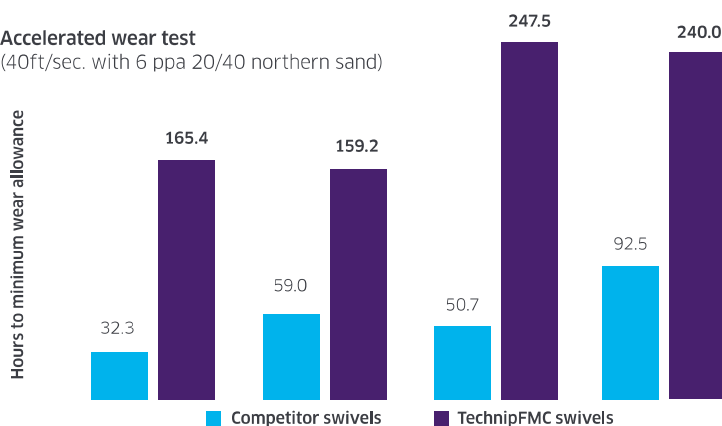
TSi

8. Primary packing
9. Weep hole
10. O-ring
11. 3 marks on bell end = triple step

TSi and TSi+ will not be cross assembled

Accelerated wear test

(40ft/sec. with 6 ppa 20/40 northern sand)



Chiksan sour gas swivel joint

TechnipFMC manufactures Chiksan sour gas swivel joints in accordance with the National Association of Corrosion Engineers (NACE) Standard MR-01-75 and the American Petroleum Institute's (API) Standard RP-14-E.

These swivel joints are specially heat-treated and inspected for controlled hardness. Because the specially heat-treated steel required for sour gas does not provide a hard enough bearing surface, Chiksan sour gas swivel joints use snap-in ball races for extra strength and high load-bearing capacity. Sour gas swivel joints come standard with integral Weco® wing union end connections.

They also have a leak-detection port between the packing and the O-ring seal. If leakage past the packing should occur, it is forced through the port, signaling the need for packing replacement. For positive identification, all Chiksan sour gas swivel joints are stamped "Sour Gas" or "NACE MR-01-75" using low-stress dot stamping and painted with an olive green, zinc-chromate primer that is unique to sour gas equipment.

1. Controlled hardness

Swivel components are specially heat-treated and 100% tested for controlled hardness.

2. Positive identification

Chiksan swivels for sour gas service are stamped "Sour Gas" and painted with an olive green, zinc-chromate primer to ensure quick, positive identification.

3. Leak detection

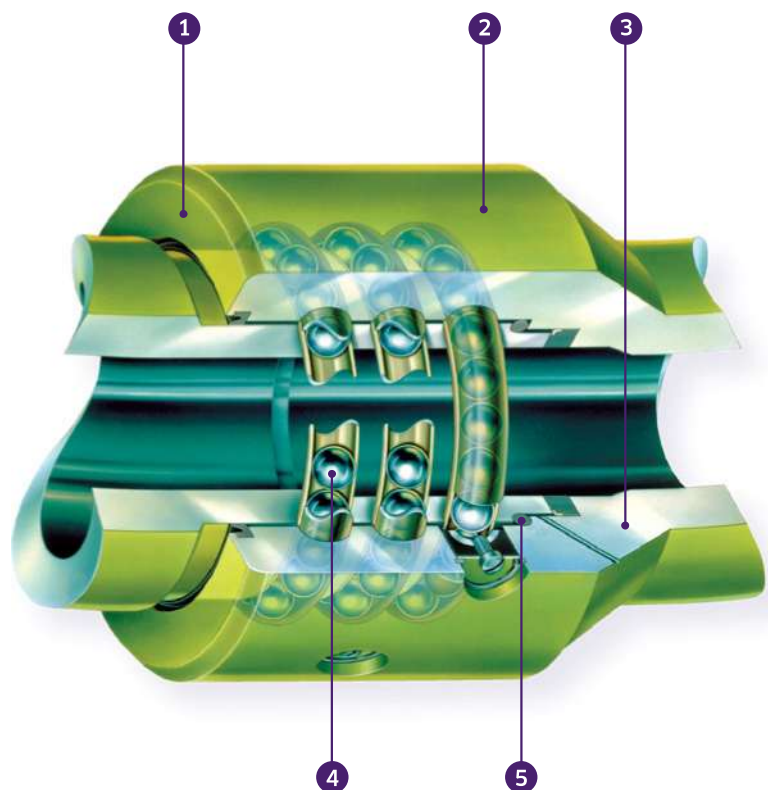
A leak detection port between the packing and O-ring seal signals the need for packing replacement.

4. Snap-in ball races

Snap-in ball races provide hard bearing surface to deliver extra strength and high load-bearing capacity when handling sour gas.

5. Proven packing design

Elastomeric packing with stainless steel anti-extrusion ring and secondary O-ring seal are used to isolate the races and bearings from line fluid.



Chiksan Swivel Joint Styles

Chiksan swivel joints are available from stock in nine basic styles or configurations. These styles permit 360-degree rotation and movement in one, two, or three planes. They can be combined in an unlimited variety of ways to suit practically any installation. All Chiksan swivel joints are assembled using two or more standard pieces.



Style 20



Style 30



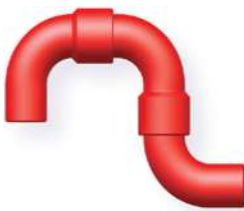
Style 40



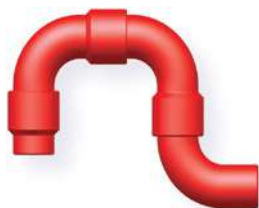
Style 50



Style 60



Style 70



Style 80



Style 10



Style 100

Chiksan swivel joints for sour gas service

6,000 psi cold working pressure;
3/8 to 4-inch sizes

Longsweep swivel joints

- ▶ 7,500 psi cold working pressure, 3-inch size; Weco Figure 1002 wing union end connections
- ▶ 10,000 psi cold working pressure, 1,2,3 and 4-inch sizes; Weco Figure 1502 wing union end connections
- ▶ 15,000 psi cold working pressure, 2 and 3-inch sizes; Weco Figure 2202 wing union end connections
- ▶ 20,000 psi cold working pressure, 2-inch size; Weco Figure 2002 wing union end connections



Warning:

Although Chiksan swivel joints can be rotated while under fluid pressure, they are not recommended for service requiring continuous rotary motion. **See warnings and cautions, pg 88.**



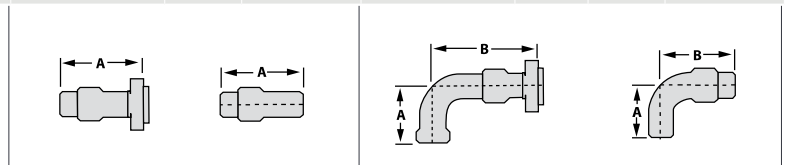
See specifications tables (pgs. 39-45 for sizes, dimensions, weights, materials, and part numbers.

Chiksan® swivel joint specifications

TripleStep and Longsweep® swivel joints

Size/model bore in. (mm)	CWP psi bar	End connections	Style 20			Style 30			
			Part No.	A in. mm	lb kg	Part No.	A in. mm	B in. mm	lb kg
1" LS10 0.88 (22)	10,000 690	Threaded	CF*	–	–	6101537	4.38 111	7.14 181	8 3.6
1" LS15 0.88 (22)	15,000 1034	1502 (MxF)	CF*	–	–	3259291	4.06 103	8.4 213	14 6.3
		1502 (MxM)	CF*	–	–	N/A	–	–	–
1.5" LS10 1.3 (33)	10,000 690	Threaded	CF*	–	–	CF*	–	–	–
1.5" LS15 1.3 (33)	15,000 1034	1502 (MxF)	CF*	–	–	CF*	–	–	–
		1502 (MxM)	CF*	–	–	N/A	–	–	–
2" LS10 1.88 (48)	10,000 690	Threaded	CF*	–	–	3139889	6.38 162	9.01 228.854	21 9.5
		1502 (MxF)	3144126	11.15 283	31 14	3144125	5.5 139.7	10.91 277.12	36 17
	15,000 1034	1502 (MxM)	CF*	–	–	N/A	–	–	–
		1502 (FxF)	CF*	–	–	–	–	–	–
2" LS20 1.88 (48)	20,000 1379	2002 (MxF)	CF*	–	–	CF*	–	–	–
		2002 (MxM)	P524579	14.12 359	45.72 20.7	CF*	–	–	–
3" TSi15 2.75 (70)	7,500 517	Threaded	CF*	–	–	N/A	–	–	–
3" TSi17 2.75 (70)	15,000 1034	1502 (FxF)	P505417	12.6 320	52 23.8	P505416	7.9 201	14.4 366	68 31
		1502 (MxM)	CF*	–	–	N/A	–	–	–
3" TSi15 Plus 2.75 (70)	15,000 1034	1505 (MxF)	CF*	–	–	N/A	–	–	–
3" TSi20 3 (76)	20,000 1379	2002 (MxF)	CF*	–	–	CF*	–	–	–
4" TSi10 3.88 (98)	10,000 690	1002 (MxF)	P516092	14.15 359	74 33.6	P517487	8.3 211	16.2 411	99 45
		1002 (MxM)	CF*	–	–	N/A	–	–	–
4" TSi15 3.5 (89)	15,000 690	1502 (MxF)	CF*	–	–	CF*	–	–	–

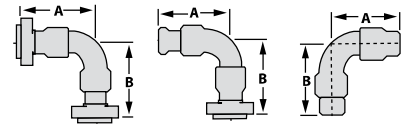
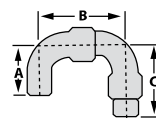
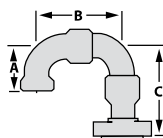
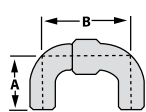
*Consult factory



Chiksan® swivel joint specifications

TripleStep and Longsweep® swivel joints

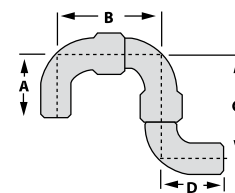
Style 40				Style 50					Style 60			
Part No.	A in. mm	B in. mm	lb kg	P/N P/N-LT	A in. mm	B in. mm	C in. mm	lb kg	Part No.	A in. mm	B in. mm	lb kg
N/A	–	–	–	3139546	4.38 111	7.28 185	7.02 178	16 7.2	CF*	–	–	–
N/A	–	–	–	3139547	4.06 103	7.35 187	8.4 213	22 10.2	CF*	–	–	–
N/A	–	–	–	N/A	–	–	–	–	–	–	–	–
N/A	–	–	–	3139777	5.62 143	9.37 238	7.96 203	21 9.2	CF*	–	–	–
N/A	–	–	–	3139778	5 127	9.4 239	10.1 257	36 17	CF*	–	–	–
N/A	–	–	–	N/A	–	–	–	–	CF*	–	–	–
3139890	6.36 162	10.73 273	29.8 13.5	3139904	6.4 163	10.74 273	9 229	37 16.8	CF*	–	–	–
N/A	–	–	–	3139475 3139475-LT	5.5 140	10.74 273	10.92 277	52 24	3144630	11 279	11 279	48 22
N/A	–	–	–	3267203	7.28 185	10.74 273	10.92 277	63 29	6101559	11 279	11 279	56 26
N/A	–	–	–	P509888	5.5 140	10.74 273	8.79 223	40 19	P504952	8.79 223	10.97 279	37 16.9
N/A	–	–	–	3144569	5.12 130	10.9 277	12.51 318	62 28.3	CF*	–	–	–
N/A	–	–	–	N/A	–	–	–	–	CF*	–	–	–
N/A	–	–	–	N/A	–	–	–	–	CF*	–	–	–
N/A	–	–	–	P505327	7.9 201	16.4 417	14.4 366	107 48.4	P505420	14.5 368	14.5 368	91 41.3
N/A	–	–	–	N/A	–	–	–	–	CF*	–	–	–
N/A	–	–	–	P563781	7.9 201	16.4 417	14.4 366	114 52	CF*	–	–	–
N/A	–	–	–	P527340	9.69 246	21.2 538	20.4 518	288 131	CF*	–	–	–
N/A	–	–	–	P516091	8.3 211	18.1 460	16.2 411	161 73.3	CF*	–	–	–
N/A	–	–	–	N/A	–	–	–	–	CF*	–	–	–
N/A	–	–	–	P527331 P527331-LT	9.69 246	21.2 538	20.4 518	255 116	CF*	–	–	–



Chiksan® swivel joint specifications

TripleStep and Longsweep® swivel joints

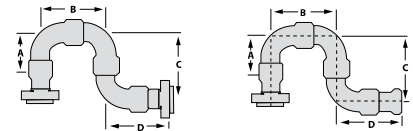
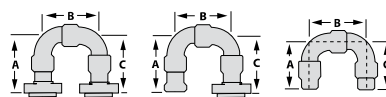
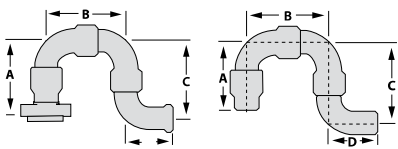
Size/model bore in. (mm)	CWP psi bar	End connections	Style 70					
			Part No.	A in. mm	B in. mm	C in. mm	D in. mm	lb kg
1" LS10 .88 (22)	10,000 690	Threaded	N/A	–	–	–	–	–
1" LS15 .88 (22)	15,000 1034	1502 (MxF)	N/A	–	–	–	–	–
		1502 (MxM)	N/A	–	–	–	–	–
1.5" LS10 1.3 (33)	10,000 690	Threaded	N/A	–	–	–	–	–
1.5" LS15 1.3 (33)	15,000 1034	1502 (MxF)	N/A	–	–	–	–	–
		1502 (MxM)	N/A	–	–	–	–	–
2" LS10 1.88 (48)	10,000 690	Threaded	3139891	6.38 162	10.73 273	10.73 273	6.38 162	47 21.2
2" LS15 1.88 (48)	15,000 1034	1502 (MxF)	P505482	5.5 140	10.73 273	10.73 273	5.5 140	58 27
		1502 (MxM)	N/A	–	–	–	–	–
		1502 (FxF)	N/A	–	–	–	–	–
2" LS20 1.88 (48)	20,000 1379	2002 (MxF)	N/A	–	–	–	–	–
		2002 (MxM)	N/A	–	–	–	–	–
3" TSi15 2.75 (70)	7,500 517	Threaded	N/A	–	–	–	–	–
3" TSi15 2.75 (70)	15,000 1034	1502 (MxF)	N/A	–	–	–	–	–
		1502 (MxM)	N/A	–	–	–	–	–
3" TSi15 Plus 2.75 (70)	15,000 1034	1505 (MxM)	N/A	–	–	–	–	–
3" TSi20 3 (76)	20,000 1379	2002 (MxF)	N/A	–	–	–	–	–
4" TSi10 3.88 (98)	10,000 690	1002 (MxF)	N/A	–	–	–	–	–
		1002 (MxM)	N/A	–	–	–	–	–
4" XHTL 3.5 (89)	10,000 690	1502 (MxF)	N/A	–	–	–	–	–



Chiksan® swivel joint specifications

TripleStep and Longsweep® swivel joints

Style 80						Style 10					Style 100					
Part No.	A in. mm	B in. mm	C in. mm	D in. mm	lb kg	Part No.	A in. mm	B in. mm	C in. mm	lb kg	Part No.	A in. mm	B in. mm	C in. mm	D in. mm	lb kg
CF*	–	–	–	–	–	3141454	7.14 181	7.46 189	7.14 181	24 10.9	N/A	–	–	–	–	–
P516135	8.4 181	7.47 190	7.47 190	4.06 103	28 12.9	3139550	8.4 213	7.4 188	8.4 213	22 10	CF*	–	–	–	–	–
N/A	–	–	–	–	–	3145886	8.4 213	7.4 188	8.4 213	27 12.1	CF*	–	–	–	–	–
CF*	–	–	–	–	–	P501542	7.96 202	9.37 238	7.96 202	26 11.8	N/A	–	–	–	–	–
P502504	10.12 257	9.37 238	9.37 238	5 127	45 21	3139781	10.12 257	9.37 238	10.12 257	42 20	CF*	–	–	–	–	–
N/A	–	–	–	–	–	3139780	10.12 257	9.37 238	10.12 257	52 23.5	CF*	–	–	–	–	–
3139892	8.91 226	10.73 273	10.73 273	6.38 162	56 25.6	3139476	9 229	10.7 272	9 229	45 20.5	N/A	–	–	–	–	–
3139901	10.9 277	10.73 256	10.73 256	5.5 140	68 31	3139905	10.9 277	10.7 272	10.9 277	63 29	3144094	10.97 279	10.73 273	10.73 273	10.91 277	79 36
P527697	10.9 277	10.7 272	10.7 272	7.3 186	79 36	3139477	10.9 277	10.7 272	10.9 277	72 33	3139903	10.97 279	10.73 273	10.73 273	10.91 277	88 40
N/A	–	–	–	–	–	P518960	8.8 224	10.7 272	10.9 277	52 24	CF*	–	–	–	–	–
CF*	–	–	–	–	–	3144570	10.85 275.59	10.85 275.59	12.51 318	78 35.2	CF*	–	–	–	–	–
N/A	–	–	–	–	–	3144571	12.46 316.48	10.85 275.59	12.52 318	87 39.5	3144572	12.5 318	10.9 277	10.9 277	12.5 318	108 49.1
N/A	–	–	–	–	–	P524218	12.88 327	16.42 417	12.88 327	102 46.4	CF*	–	–	–	–	–
P505409	14.4 366	16.4 417	16.4 417	7.9 201	145 65.9	P505325	14.5 368	16.4 417	14.4 366	129 58.7	P505410	14.4 366	16.4 417	16.4 417	14.6 371	168 76.1
N/A	–	–	–	–	–	P505326	14.4 366	16.4 417	14.4 366	143 64.8	P505411	14.4 366	16.4 417	16.4 417	14.6 371	181 82.2
N/A	–	–	–	–	–	–	–	–	–	–	P562241	14.4 366	16.4 417	16.4 417	14.6 371	198 90
CF*	–	–	–	–	–	P516094	16.1 409	18.1 460	16.2 411	198 89.8	CF*	–	–	–	–	–
N/A	–	–	–	–	–	P516093	15.9 404	18.1 460	16.2 411	209 95	CF*	–	–	–	–	–
CF*	–	–	–	–	–	3130501	20.4 518	21.2 538	20.4 518	338 154	CF*	–	–	–	–	–



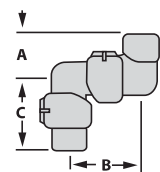
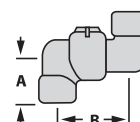
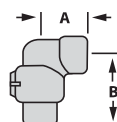
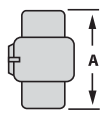
*Consult factory

Chiksan® swivel joint specifications

High-pressure swivel joints

Nom. sizes in.	CWP psi bar	Ends	Style 20			Style 30				Style 40				Style 50				
			Part No.	A in. mm	lb kg	Part No.	A in. mm	B in. mm	lb kg	Part No.	A in. mm	B in. mm	lb kg	Part No.	A in. mm	B in. mm	C in. mm	lb kg
.38	6,000	Threaded	3111290	3.31	1.5	3111291	1.94	2.81	1.8	3111292	2.0	1.94	2	3111293	1.94	2.88	2.81	3.3
	414			84	0.7		49	71	0.8		49	54	49		73	71	1.5	
.5	6,000	Threaded	3111314	3.31	1.5	3111315	1.94	2.81	1.8	3111316	2.0	1.94	2	3111317	1.94	2.88	2.81	3.3
	414			84	0.7		49	71	0.8		49	54	49		73	71	1.5	
.75	6,000	Threaded	3220946	5.19	3.6	3220947	2.72	4.62	4.39	3220948	2.72	2.72	4.5	3220883	2.72	4.22	4.62	7.2
	414			131	1.63		69	117	1.99		69	2	69		107	117	3.24	
1	6,000	Threaded	3207727	5.19	3.16	3207728	2.72	4.62	3.6	3207729	2.72	2.72	4.5	3205399	2.72	4.22	4.62	6.8
	414			131	1.43		69	117	1.6		69	2	69		107	117	3.1	
1.25	6,000	Threaded	3207734	5.47	4	3207735	3.19	4.72	6.8	3207736	3.19	4.28	6.3	3207737	3.19	4.28	4.72	8
	414			139	1.8		81	120	3.10		81	109	2.8		81	109	120	3.6
1.5	6,000	Threaded	3207741	5.47	10	3207743	3.19	4.72	6.2	3207744	3.19	4.28	7.9	3205400	3.19	4.28	4.72	10
	414			139	4.5		81	120	2.80		81	109	3.58		81	109	120	4.5
2	6,000	Threaded	3207749	6.66	13	3207750	4.03	5.84	16	3207751	4.03	5.88	19.5	3205637	5.84	5.88	4.03	27
	414			169	5.5		102	148	6.8		102	149	8.9		148	149	102	12.3
2.5	6,000	Threaded	CF*	8.25	18	-	-	-	-	3221068	4.88	7.68	29	3219959	7.12	7.68	4.88	37
	414			210	8.2						124	195	13.2		181	195	124	16.8
3	6,000	Threaded	3207756	9.12	30	3207757	4.62	9.44	37	3207758	4.62	8.75	43	3207759	4.62	7.94	8.62	53
	414			232	14		117	240	16.8		117	222	20		117	202	219	24.1
4	6,000	Threaded	3207764	9.59	42	3207765	5.56	10.81	57	3207766	5.56	10.56	64	3207767	5.56	9.83	9.88	90
	414			244	19		141	275	26		141	268	29.1		141	250	251	41

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Chiksan® swivel joint specifications

High-pressure swivel joints

Nom. sizes in.	CWP psi bar	Ends	Style 60			Style 70				Style 80					Style 10				
			Part No.	A in. mm	lb kg	Part No.	A in. mm	B in. mm	lb kg	Part No.	A in. mm	B in. mm	C in. mm	lb kg	Part No.	A in. mm	B in. mm	C in. mm	lb kg
.38	6,000 414	Threaded	3111294	2.81 71	2.8 1.3	CF*	-	-	-	N/A	-	-	-	-	N/A	-	-	-	-
.5	6,000 414	Threaded	3111318	2.81 71	2.8 1.3	CF*	-	-	-	3111320	1.94 49	2.88 73	2.81 71	4.8 2.2	3111313	3.12 79	2.88 73	3.12 79	4 1.8
.75	6,000 414	Threaded	3220949	4.62 117	5.8 2.6	CF*	-	-	-	3220952	2.72 69	4.22 107	4.62 117	10 4.5	3220951	4.62 117	4.22 107	4.62 117	9 4.1
1	6,000 414	Threaded	3207730	4.62 117	8.8 4	3207731	2.72 69	4.22 107	8 3.6	3207732	2.72 69	4.22 107	4.62 117	10 4.5	3207726	4.62 117	4.22 107	4.62 117	9 4.1
1.25	6,000 414	Threaded	3207738	4.72 120	8.9 4.03	3207739	3.19 81	4.28 109	9.4 4.3	3207740	3.19 81	4.28 109	4.72 120	12 5.2	3207733	4.72 120	4.28 109	4.72 120	14 5.9
1.5	6,000 414	Threaded	3207745	4.72 120	8.2 3.72	3207746	3.19 81	4.28 109	9.4 4.3	3207747	3.19 81	4.28 109	4.72 120	14 6.4	3207741	4.72 120	4.28 109	4.72 120	10 4.5
2	6,000 414	Threaded	3207752	5.84 148	22 9.7	3207753	4.03 102	5.88 149	29 13	3207754	4.03 102	5.88 149	5.84 148	38 17.3	3207748	5.84 148	5.88 149	5.84 148	33 15
2.5	6,000 414	Threaded	N/A	-	-	N/A	-	-	-	N/A	-	-	-	-	N/A	-	-	-	-
3	6,000 414	Threaded	3207760	8.62 219	48 21.8	3207761	4.62 117	7.94 202	57 25.9	3207762	4.62 117	7.94 202	9.44 240	77 35	3207762	8.62 219	7.94 202	9.44 240	77 34.9
4	6,000 414	Threaded	3207768	9.88 251	73 33.2	3207769	5.56 141	9.62 244	98 45	3207763	5.56 141	9.62 244	10.81 275	111 50.3	3207763	9.88 251	10.31 262	10.81 275	111 50.2

*Consult factory

