



Technical Supplement

Single 1 1/2" Skookum Shackel, Bushing, 5t Swivel Assembly B | HDPE Pipe Handling FCX-HS12 | Release Date 1/18/2019

Attach all supporting documentation including but not limited to drawings, PE stamps, calculations, etc. For fabricated rigging a detailed drawing and PE stamp must be provided.

Date: 4/25/2016	Site: Company PSST	Division Manager: Company PSST
Description of Rigging: Single 1 - 1/2" Skookum Shackle, Bushing, 5-Ton Swivel	Working Load Limit: 16,667 lbs	

Engineering Review:

The rigging described here is one of the six original rigging assemblies (Rigging Assembly "B")

Alternative rigging equipment and supplier may be substituted as long as they have:

- Equivalent function
- Equivalent rating or higher (Working Load Limit must be based on a design factor of at least 1:3)

Engineering Review Summary

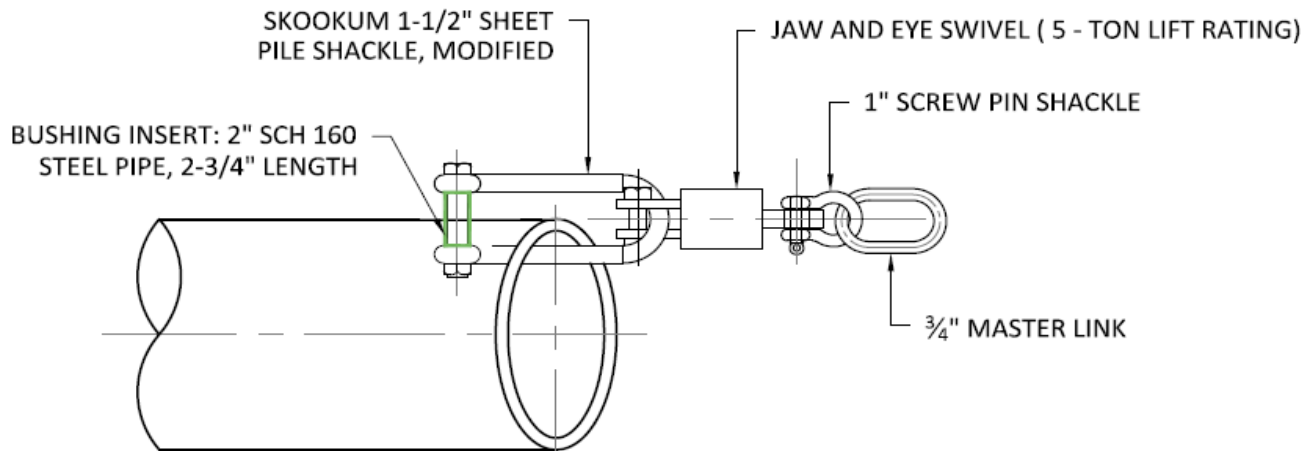
Pipe Diameter and SDR: See Attached Table	Pipe Length: 400-ft	Pipe Yield Strength: n/a
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When using a shackle to pipe assembly analysis must include the following:

Shackle's Working Load Limit: 33,333 lbs	Shackles Attached to Pipe (number): 1	Shackle Pin Diameter, <i>D_p</i> (inches): 1.625"
Bushing Diameter, <i>D_p</i> (inches): 2.375"	Hole Diameter in HDPE Pipe, <i>D_h</i> (inches): 2.5"	Shackle Gap Opening Width, <i>W</i> : 2.87"
Opening Length, <i>L</i> : 9.5"	Edge of Pipe to Center of Hole, <i>R</i> : 8"	

Assembly Description/Diagram:

(this must be listed below or attached on a separate sheet)



Parts List:

Include all parts such as: pulling head, swivel, nylon sling, shackle to equipment, master link, wire rope slings, flange break strength, rotational energy controls, etc.

Ref. #	Quantity	Item Description	Supplier	Part Number	Working Load Limit
n/a	1	Skookum 1-1/2" Sheet Pile Shackle, modified	Certex	CX10-0778-HAG1	33,333 lbs
n/a	1	Bushing Insert: 2" SCH160 Steel Pipe, 2-3/4" Length			
n/a	1	Jaw and Eye Swivel, 5-Ton Lift Rating	Certex	CX05-0259	16,667 lbs
n/a	As Needed	1" Screw Pin Shackle	Certex	CX10-0026	16,667 lbs
n/a	1	Polyester Tow Sling UTS4-25T x 5-ft	Certex	CX08-0039-5	16,667 lbs
n/a	As Needed	3/4" Master Link	Certex	CX05-0708	16,667 lbs

B) Single 1-1/2 Skookum Shackle with 2" Sch160 Pipe Bushing Insert, 5-ton swivel

		Pipe SDR Rating										
		32.5	26	21	19	17	15.5	13.5	11	9	7	
Nominal Pipe Diameter (inches)	12											
	14											
	16											
	18											
	20											
	22											
	24											
	26											
	28											
	30											
	32											
	34											
	36											

Rigging can be used on grades up to 25%

Rigging can be used on grades up to 17.5%

Rigging cannot be used

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		Pipe SDR Rating									
		32.5	26	21	19	17	15.5	13.5	11	9	7
Nominal Pipe Diameter (inches)	12					O	X	X	X	X	X
	14					O	X	X	X	X	X
	16					O	X	X	X	X	O
	18					O	X	X	X		
	20					O	O	O			
	22										
	24										
	26										
	28										
	30										
	32										
	34										
	36										

X - Rigging can be used on grades up to 25%

O - Rigging can be used on grades up to 17.5%

Rigging cannot be used