super slings inc.

20 YEARS of

Secure Solutions

PIPE & HOSE RESTRAINTS

super connect

Temporary PipeWork Restraints

WARNING!

This bulletin contains important safety information about the use of SUPER-CONNECT restraints, however; it **DOES NOT** contain all the information you need to know about securing pipes/hoses safely. Restraint slings are one part of the securement system and it is your responsibility to consider all risk factors prior to using any pipework or hose restraint system. Failure to do this may result in severe **INJURY** or **DEATH** due to sling failure and/or other securement components.

1. WARNINGS & NOTES OF CAUTION

a. Proper installation of the iron securement system is essential to the integrity and functionality of the entire system.

b. Ensure that the iron securement system is correct for the size, type, and pressure class of the iron being secured.

c. The iron securement system is intended to **reduce** the risk of serious injury and/or damage to equipment in the event that a union type connection separates or ruptures while under pressure.

d. Pre-Use and periodic inspection of both the iron and iron securement system in accordance with OEM instructions and the iron securement system described herein is essential to the integrity and functionality of the entire system.

e. Iron securement slings and hardware must only be used for iron securement system and **NEVER** for lifting or rigging of ANY OTHER KIND.

f. Harsh chemicals such as acids or alkalis may affect the integrity of the iron securement system components. **NEVER** use iron securement slings that appear to be saturated with chemicals or solvents, appear to have chemical burns , abrasions or otherwise appear compromised.

g. Take care when making up iron connections not to impact any component of the iron securement system with a hammer or mallet.

h. Anchor points of the iron securement system **MUST** be adequately (See Table 1.). If uncertainty exists on whether or not an anchor point is suitable, contact a professional engineer registered in the territory/jurisdiction of operation.

i. In the event of a rupture, union separation or uncontrolled flow, all components of the iron securement system **MUST** be taken out of service and returned to the OEM for failure analysis.

j. Ensure all existing whip check clamps not pertaining to the described iron securement system are removed from the iron.

k. Failure to comply with any of the above **MAY** result in **INJURY** or **DEATH** in the event of a separation or rupture.

l. Personnel **MUST** keep clear of pumping iron during pumping operations.

2. RIG UP - PUMPING IRON

a. Iron should be rigged up according to OEM instructions ensuring all unions are made up tight.

b. Run iron between units in the most "direct" path possible.

c. Iron must be properly supported off the ground using blocking stands

3. SECUREMENT SLING SPECIFICATIONS

Refer to OEM specifications for details on sling sizing and identification requirements.

General Sling Notes

a. All slings must be synthetic type covered with a nylon of polyester protective sleeve.

b. Various sling lengths can be used in this system, however; it is recommended that longer slings (20') be used when possible.

c. Polyester slings are not significantly affected by most compounds or chemicals including: alcohols, hydrocarbons, keynotes, soaps, detergents, water, most weak acids or alkalis.

d. The service temperature range for polyester slings in -40°C to 90°C. Steam cleaning in excess of 90°C will damage the sling.

4. SLING REQUIREMENT, SELECTION & USE

Sling Requirements

a. Slings must be manufactured, tested, inspected and used in compliance with ASME B30.9-2014

b. Sling type to be polyester endless round slings

c. Join between hitches with reef knot or shackle. Shackles designed to minimum ultimate strength of 6 x WLL to be used are:

i. 4.75 tonne (3/4" nominal) for SC02 thru SC04
ii. 6.5 tonne (7/8" nominal) for SC05 thru SC07
iii. 8.5 tonne (1" nominal) for SC08
iv. 9.5 tonne (1-1/8" nominal) for SC09
v. 12 tonne (1-1/4" nominal) for SC10
vi. 17 tonne (1-1/2" nominal) for SC11

NOTE: Anchor points MUST be capable of withstanding a static load without failure equal to the breaking strength of the specified slings. Consult engineering if uncertainty exists on whether or not an anchor is suitable for the application intended. **ONLY** "Certified" Anchor points can be used to anchor the securement slings.

Sling Selection

a. Choose Cross Reference chart based on type of fluid pressurizing the temporary pipework system.
b. Determine maximum inside diameter (ID) of temporary pipework components and find this value in the first vertical column.
c. Follow the row from the ID value to the column that exceeds the maximum non-shock working pressure of the temporary pipework system.
d. The column selected will derive the size code of the recommended Super-Connect sling for the temporary pipework system.
e. From the size code, determine the length of sling required for the temporary pipework system.

Use of Slings

a. It is the responsibility of the end user of this system to install, operate and maintain the system and components. Proper training of personnel installing, operating and maintaining the system is the responsibility of the end user.

b. The included restraint ratings are applicable when used with approved operating procedures for the half-hitch sling method of high pressure piping restraint, in conjunction with anchor points selected and approved by a qualified person.

c. An approved maintenance and inspection plan, meeting or exceeding both the sling manufacturer's requirements and industry best practices is mandatory. This plan must include pre-use and annual inspections.

4. RIG UP - SECUREMENT SLINGS

Proper rig up of the sling securement system is **essential** to the integrity of the system during operations. Users **MUST** be trained to properly use the sling securement system and final rig up should be checked by a supervisor, prior to commencing operations.

Recommended Installation Procedure

a. starting at an anchor point, connect a sling using a shackle through the sling loop (See figure 2)
b. Keeping the sling tight, hitch the sling around each union connection (See figure 3 & 4)
c. Valves require a hitch on each end. (See figure 8). Small valves may only require 1 hitch on the wing end.
d. Swivels require an additional hitch in the center of the swivel. (See figure 9)
e. When a slings becomes too short to hitch around a union or when running the length of a straight section: Choke a new sling through the sling. Pull the new sling tight in the direction of rigging and continue on. (See figure 5)
f. Ensure all hitches around the unions are tight and all the slick is taken out of the sling rigging.
g. In order to take out excessive slack in tight areas or due to the sling terminating close to a union, an additional hitch may be used to take up the excess length.
h. Anchor similar to step "a." above on the opposite end to the iron string. Or anchor around the wellhead using a "choker". (See figure 6)
i. Typical configurations are shown in figure 7.

Figure 2. Anchor Point (For Reference Only)

Figure 3. Typical Hitch

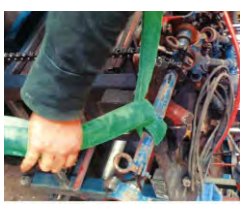


Figure 4. Typical Hitch around Each Side of Union

Figure 5. Choker Sling Extension

Figure 6. Choker Around Well Head

Figure 7. Typical Configuration

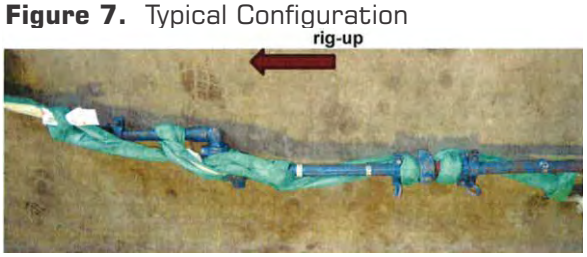
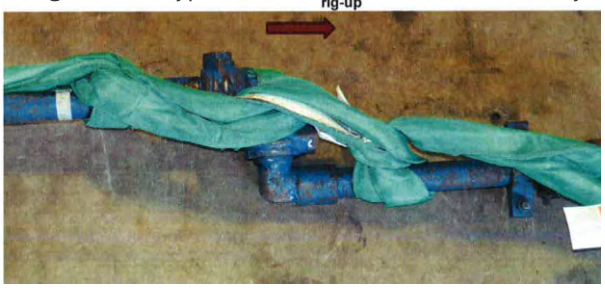


Figure 8. Typical Hitch on Valve

Figure 9. Typical Hitch on Swivel Assembly



Super-Connect Pipework Restraints

Temporary Pipework Restraints

Product details

Super-Connect temporary pipework restraints are rated for both liquid and gas high pressure pipework. These slings are designed to be used in a choker or choke and half hitch configuration to help limit the amount of damage from line failures during pressure pumping operations.

Pumping hazardous energy sources increases the potential risk of pipe rupturing and without safe guarding the pipe; it may become a projectiles causing injury or death.

It is recommended that temporary pipework restraint systems be used on and temporary joint piping, hammer unions, hoses, etc. As per the restricted access zone standard, restraints are required to be installed on all temporary piping on the following equipment in the following areas:

All pressure testing equipment:

- Wellheads, Flow lines, Pipelines and Well control equipment.
- During hydraulic fracturing operations from pressure pumping equipment and treating iron to the well head
- Wellhead and pressure piping that are open during active operations:
- Snubbing
- E-line
- Slick-line
- Coil Tubing
- Fracturing
- Acidizing
- Flow Back

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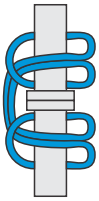
Secure Solutions
WARNING!
NEVER EXCEED
WORKING LOAD LIMIT

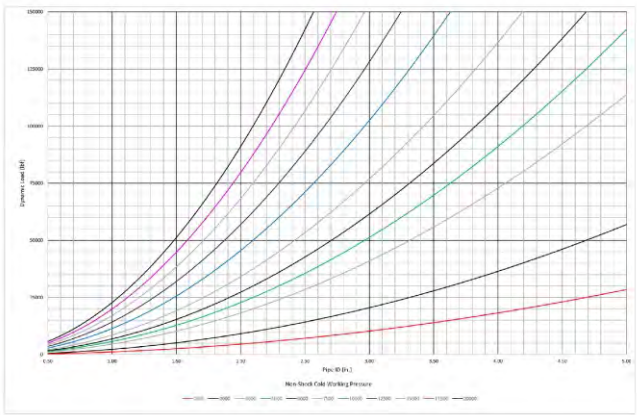
SUPER-CONNECT PIPEWORK RESTRAINT

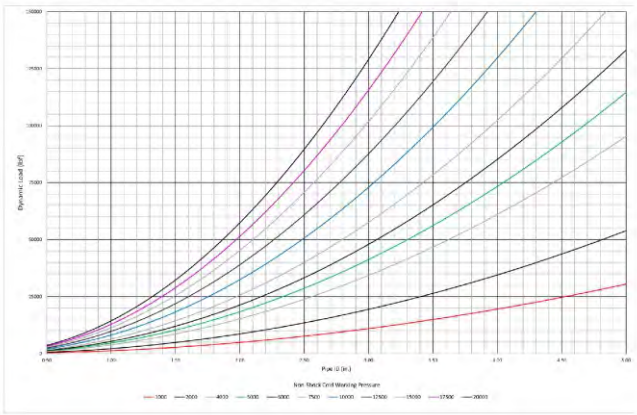
RECC SHACKLE	8-1/2 T
SERIAL NUMBER	74675-001
SIZE CODE	SC-08
MATERIAL	POLYESTER
LENGTH	20 FT
DATE	2017-02-09
HITCH TYPE	CHOKE



WORKING LOAD LIMITS		
PIPE ID INCHES	LIQUID PSI	GAS PSI
1.00	20,000	20,000
1.50	20,000	20,000
2.00	15,000	20,000
2.50	10,000	15,000
3.00	6,000	10,000
3.50	5,000	6,000
4.00	4,000	4,000
4.50	2,000	2,000
5.00	2,000	2,000

ENGINEERED IN CANADA





WARNING: NEVER EXCEED WORKING LOAD LIMIT!

Failure to follow instructions can result in serious property damage, injury or death!

For full user manual please visit www.superslings.ca

Super-Connect Pipework Restraints

Temporary Pipework Restraints

Product details

How-to-Order:
1. Choose cross-reference chart below based on type of fluid pressurizing the temporary pipework system (Liquid or Gas).
2. Determine maximum inside diameter (ID) of temporary pipework components and find this value on the left column of corresponding chart.
3. Follow the Pipe ID row to the PSI that meets or exceeds the maximum PSI of your system to the column that corresponds to Super-Connect Model number.
4. Determine the length required to secure the pipework according to site requirements.

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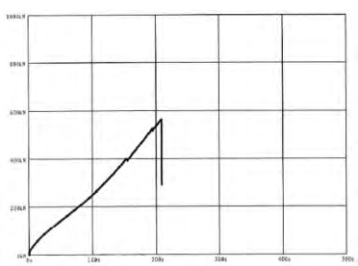
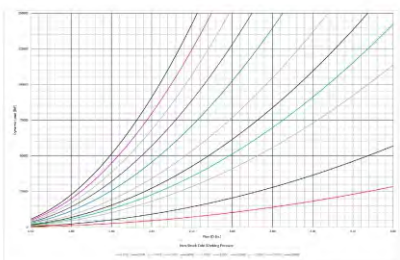
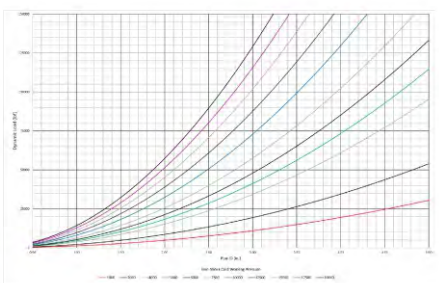
Temporary PipeWork Restraints







Cross Reference Chart

LIQUID

DYNAMIC RESTRAINT LOADS, TEMPORARY PIPEWORK, PRESSURIZED WITH **LIQUIDS**
DYNAMIC LOAD RATED FOR CHOKE / HALF HITCH
SUPER CONNECT MODEL NUMBER / PSI

Pipe ID in.	SC01	SC02	SC03	SC04	SC05	SC06	SC07	SC08	SC09	SC10	SC11
1.00	7,500	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
1.50	2,000	5,000	7,500	10,000	15,000	17,500	20,000	20,000	20,000	20,000	20,000
2.00	2,000	2,000	4,000	6,000	7,500	7,500	10,000	15,000	17,500	20,000	20,000
2.50	1,000	1,000	2,000	4,000	5,000	6,000	7,500	10,000	10,000	12,500	17,500
3.00	X	X	1,000	2,000	2,000	4,000	5,000	6,000	7,500	7,500	12,500
3.50	X	X	1,000	2,000	2,000	2,000	2,000	5,000	5,000	6,000	7,500
4.00	X	X	1,000	1,000	2,000	2,000	2,000	4,000	4,000	5,000	6,000
4.50	X	X	X	1,000	1,000	1,000	2,000	2,000	2,000	4,000	5,000
5.00	X	X	X	1,000	1,000	1,000	1,000	2,000	2,000	2,000	4,000
Shackle Size	4-3/4 t	4-3/4 t	4-3/4 t	6-1/2 t	6-1/2 t	6-1/2 t	6-1/2 t	8-1/2 t	9-1/2 t	12 t	17 t

GAS

DYNAMIC RESTRAINT LOADS, TEMPORARY PIPEWORK, PRESSURIZED WITH **GAS**
DYNAMIC LOAD RATED FOR CHOKE / HALF HITCH
SUPER CONNECT MODEL NUMBER / PSI

Pipe ID in.	SC01	SC02	SC03	SC04	SC05	SC06	SC07	SC08	SC09	SC10	SC11
1.00	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
1.50	4,000	6,000	10,000	17,500	20,000	20,000	20,000	20,000	20,000	20,000	20,000
2.00	2,000	2,000	5,000	7,500	12,500	12,500	17,500	20,000	20,000	20,000	20,000
2.50	1,000	1,000	2,000	5,000	6,000	7,500	10,000	15,000	17,500	20,000	20,000
3.00	X	1,000	1,000	2,000	4,000	5,000	6,000	10,000	10,000	12,500	17,500
3.50	X	X	1,000	2,000	2,000	2,000	4,000	6,000	7,500	10,000	12,500
4.00	X	X	X	1,000	2,000	2,000	2,000	4,000	5,000	6,000	7,500
4.50	X	X	X	1,000	1,000	2,000	2,000	2,000	4,000	5,000	6,000
5.00	X	X	X	X	1,000	1,000	2,000	2,000	2,000	4,000	5,000
Shackle Size	4-3/4 t	4-3/4 t	4-3/4 t	6-1/2 t	6-1/2 t	6-1/2 t	6-1/2 t	8-1/2 t	9-1/2 t	12 t	17 t

WARNING! **NEVER EXCEED THE WORKING LOAD LIMIT.**
ALWAYS CHECK THE IDENTIFICATION TAG TO DETERMINE THE SLINGS RATED CAPACITY IS APPROPRIATE FOR THE APPLICATION. RATINGS LISTED ARE VALID FOR NEW SLINGS ONLY. ALWAYS INSPECT BEFORE USE

Web Pipe and Hose Halters

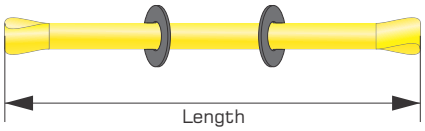
Temporary Whip Restraints

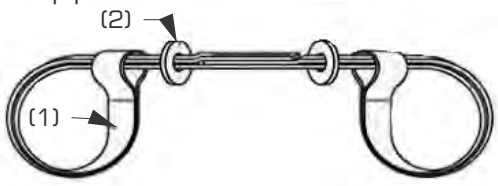
Product details

Help protect your workers from injury and your equipment from damage. To reduce damage and injury to personnel when pipes or hoses accidently disconnect while under pressure, be sure to use proper Hose Halters™. Suitable for use on pneumatic, water and hydraulic pipes and hoses, these easy to install straps are made from strong, flexible nylon webbing. Slide the rubber grommets (2) to keep choked eyes snug on the hose. The available standard lengths will accommodate pipes and hoses with inside diameters from 1/4" up to 6". Meets both OSHA and Canadian OH&S requirements for restraining devices on pipe and hose connections.

HH430

HH230





Item Code	Length	Hose Inside Diameter							
		1/4"	1/2"	3/4"	1"	2"	3"	4"	6"
		Hose Maximum Internal Pressure (PSI) at above Hose I.D.							
HH-130	30"	26,000	6,500	2,900	1,650	400			
HH-140	40"				1,650	400	175	100	
HH-230	30"	52,000	13,000	5,800	3,300	750			
HH-244	44"				3,300	750	350	200	
HH-264	64"					750	350	200	90
HH-330	30"		32,000	14,000	8,100	2,000			
HH-344	44"				8,100	2,000	900	500	
HH-364	64"					2,000	900	500	220
HH-430	30"		42,000	18,000	10,500	2,600			
HH-444	44"				10,500	2,600	1,160	650	
HH-464	64"					2,600	1,160	650	290

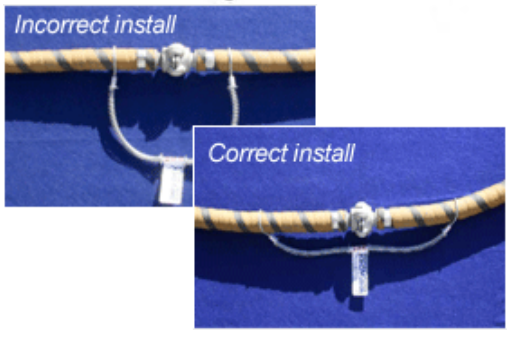
OSHA 1926.603(a)(10) states: Safety chains, or equivalent means, shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.

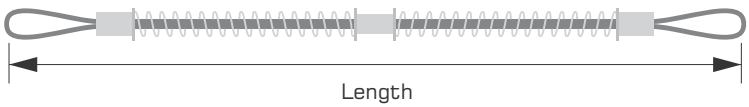
Wire Hose Restraints

Temporary Whip Restraints

Product details

Whip Restraints, hose-hose type - Made With Galvanized wire rope





Code	Recc Hose Dia.	Length	Wire Rope Dia.	Weight / ea. approx.
	in.	in.	in.	lbs.
WR1822-15	1/2 – 1 1/4	15	1/8	0.16
WR1822-18	1/2 – 1 1/4	18	1/8	0.19
WR1822-20	1/2 –1 1/4	20	1/8	0.21
WR1822-22	1/2 – 1 1/4	22	1/8	0.23
WR1422-24	1 1/2 – 3	24	1/4	0.91
WR1422-30	1 1/2 – 3	30	1/4	0.92
WR1422-36	1 1/2 – 3	36	1/4	1.22
WR1422-37.5	1 1/2 – 3	37 1/2	1/4	1.26
WR1422-48	1 1/2 – 3	48	1/4	1.50
WR3822-48	3 1/2 – 6	48	3/8	3.00