

Manual Section 7	Issue Date 04/17/13	Revision Date 06/15/21	Policy Number LLCP-100
	Process Piping Isolation		

Background

Our Company recognizes the potential for serious injury and/or equipment damage during activities requiring the opening of pressure piping, vessels and other related equipment. This safe work practice has been established to minimize this risk and establish our standard for safe isolation.

Purpose

The procedures included in this safe work practice are established to clearly define what is meant by positive isolation within the Company and establish minimum criteria for safely isolating production piping and equipment prior to starting work. This safe work practice is intended to be used in conjunction with the Corporate IHE, Confined Space Entry, Hot Work Program as well as tie-ins to existing process piping and equipment by bolting.

In addition, this safe work practice is designed to satisfy company, customer, state, and federal requirements.

Scope

All LLC Companies including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, Inc., and GWIS, Mack Steel, NuWave, Sun Industries; hereafter identified as “Company”.

Definitions

Positive Isolation

The isolation of process piping or equipment by one of the following:

- Disconnected pipe work with blind flange installed
- Full thickness blind skillet with proper gasket on pressure side. The customer shall be contacted for information regarding skillet usage and gasket requirements.

Blind Flange

A flange used for isolation purposes rated to the design pressure of the piping system or equipment being isolated.

Block Valve

This normally implies ball, plug or gate valve. Butterfly valves are acceptable in non-hydrocarbon applications where the pressure is less than 150 psi.

Actuated Valves

Valves that have an assembly which will power the valve open or closed.

Blind Skillet

A solid metal plate cut to form isolation between the faces of two flanges. The skillet shall be rated to the maximum pressure that can be applied to the piping system or equipment being isolated, equipped with a handle that extends two inches beyond the flanges, and stamped with the MAWP. Skillet’s thickness shall meet the design requirements of Table 1 of this safe work practice.

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Single Valve Isolation

A single, closed, locked and tagged, non-leaking block valve used to isolate pressure. Any Single Valve Isolation performed (other than Production) will require a Company MOC.

Double block and Bleed

Two non-leaking valves in a series that are closed, locked, and tagged with the pressure between the valves bled through a locked open and tagged vent line directed to a safe location. An example of double block and bleed isolation is given in Figure 1 of this safe work practice.

Policy & Procedures

Positive Isolation

Positive isolation is required when the absence of flammable or toxic material is critical to conducting a safe operation (i.e., Hot Work, Confined Space Entry, tie-ins to existing process piping by bolting, etc.). Positive isolation may also be required when containing hazardous materials, which are not under pressure.

A job specific blind list, which contains entries of each time a blind is installed, should be maintained. If a blind, which was installed to satisfy a hot work or confined space entry permit, must be removed, the permit shall be cancelled prior to removal.

Table 1 This table provides the minimum thickness for skillets based on ANSI/ASME B31.3, 1984 Edition

SKILLET THICKNESS IN INCHES											
PIPE SIZE	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2
1	3000	8700									
1 1/2	1800	4200	7400								
2	1100	2600	4700	7400	10700	14600	19100				
2 1/2	800	1800	3200	5100	7300	10000	13000				
3	550	1200	2200	3400	4900	6700	8800	13700	19800		
4	325	750	1300	2000	3000	4000	5300	8300	12080	16300	
6	150	325	600	850	1300	1800	2400	3800	5500	7500	9800
8	90	200	350	550	800	1100	1400	2200	3200	4400	5800
10	55	130	225	350	500	700	900	1400	2100	2800	3700
12	40	50	160	275	350	500	650	1000	1400	2000	2600

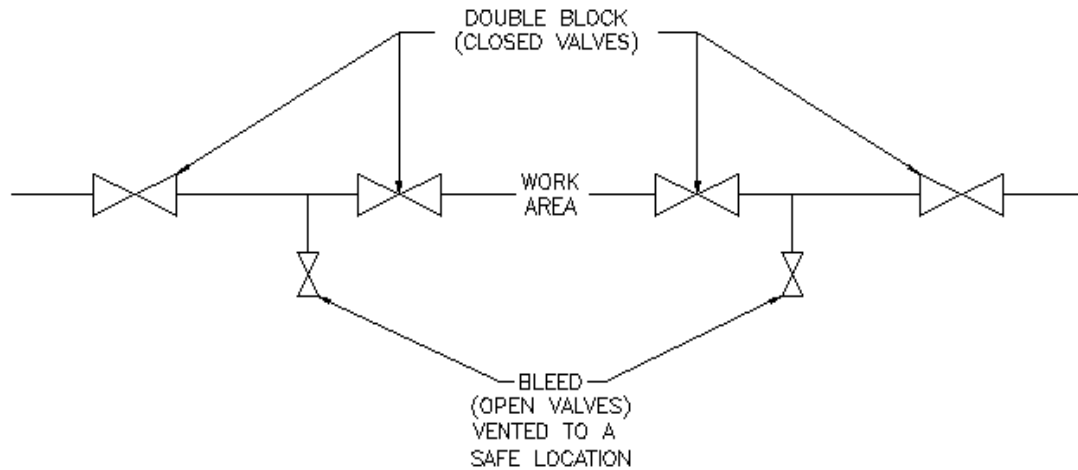
pressure rating in psi

Thickness above are based on ASTM A-36 Carbon Steel

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This schematic provides an example of the use of double block and bleed isolation

Figure 1



Every case of isolation/deactivation will be somewhat different. An evaluation by Operations and Construction shall be made on a case-by-case (site-specific) basis to determine the desired end state of the equipment, pipeline, etc., and to develop associated action plans. The evaluation and procedures shall be reviewed with and approved by the appropriate operations representative prior to work commencing.

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For Company Production Operators Only

Single Valve Isolation

Single valve isolation shall be limited to the following operations:

- Opening equipment in order to establish positive isolation
- The work being performed is not left unattended and is not hot work or confined space entry work.

Examples of operations where the use of single valve isolation is appropriate are changing pressure gauges, cleaning sight glasses, replacing needle valves, pig launching and receiving, replacing well chokes, replacing control valve trim and seats, tie-ins to existing process piping by bolting, etc. When possible, skillets will be installed on the downstream side of the valve in order to completely isolate the system.

Subsurface Isolation

Isolation of subsurface pressure for the purpose of accessing and repairing of wellhead valves require the following means of isolation:

- Bottom master valve – In order for employees to assist anyone in repairs to well head valves, a minimum of two methods shall be required for isolation purposes (i.e., back pressure valve, and/or subsurface valve, and/or a plug).
- Upper master valve – a locked, tagged, non-leaking bottom master valve, as a minimum, shall be required for isolation purposes.

* Any Single Valve Isolation performed (other than Production) will require a **Company MOC**. *