2930 Hwy 152 West • P.O. Box 1640
Pampa, TX 79065

Phone 806-665-8446
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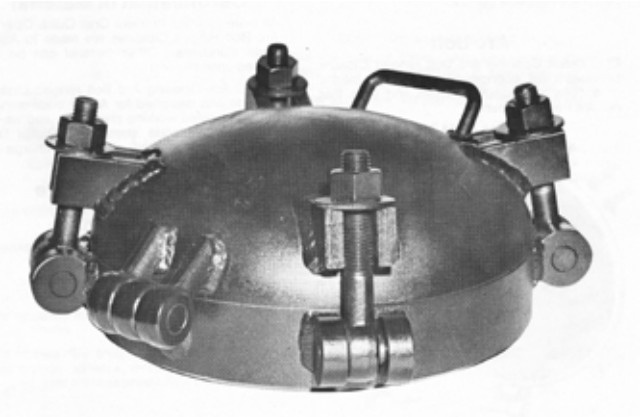
Series 1000 Quick Opening Swing Bolt Hinged Closure



Design – Crall Quick Opening Swing Bolt Hinged Closure has an elliptical head hinged to tis own hub. SA-325 high tensile, heat-treated eye bolts, are pinned to the lugs on the hub so the head will swing clear after the bolts are loosened. An O-ring is placed in a machined groove in the head so that it will provide a tight sealing fit between the head and the hub. Both head and hub are quality machined to provide self-allignment between the two.

Swing Bolt – Crall Quick Opening Swing Bolt Hinged Closure provides a fast, economical, yet simple means of access to pressure vessels and lines that require frequent opening.

Safety Features – The lugs on the head are positioned at a 10 degree angle so the bolts cannot move off the top lugs under pressure or in the process of tightening. Loosening the nut a few extra turns to clear the top lugs will permit the head to lift and relieve any residual pressure that might be present while the head remains securely retained.

Certification of Material – All material used to make Crall Quick Opening Swing Bolt Hinged Closures are made to ASME code standards. Other material can be furnished upon request. Crall Quick Opening Swing Bolt Hinged Closure is made and designed for
ASME code service at various rated working pressures and we will supply ASME code stamp with Partial Data Report when specified at an extr charge per order.

Internal Taper Bore – Weld Bevel to match closure wall thickness is standard. (See dimension “A”.)

Stainless Steel – 304, 304L, 316 & 316L grade stainless steel available. Prices on request. Standard with carbon steel bolts, lugs and other exterior components. Also available with stainless steel trim.

Materials – Head - ASME SA-516 GR. 70
Head Lugs - SA-36
Eye Bolts - SA-325
Nuts - SA-194 2H
Lug Pins - SA-193 B7
O-ring–Buna-N .275” O.D.
Hub lugs - SA-36

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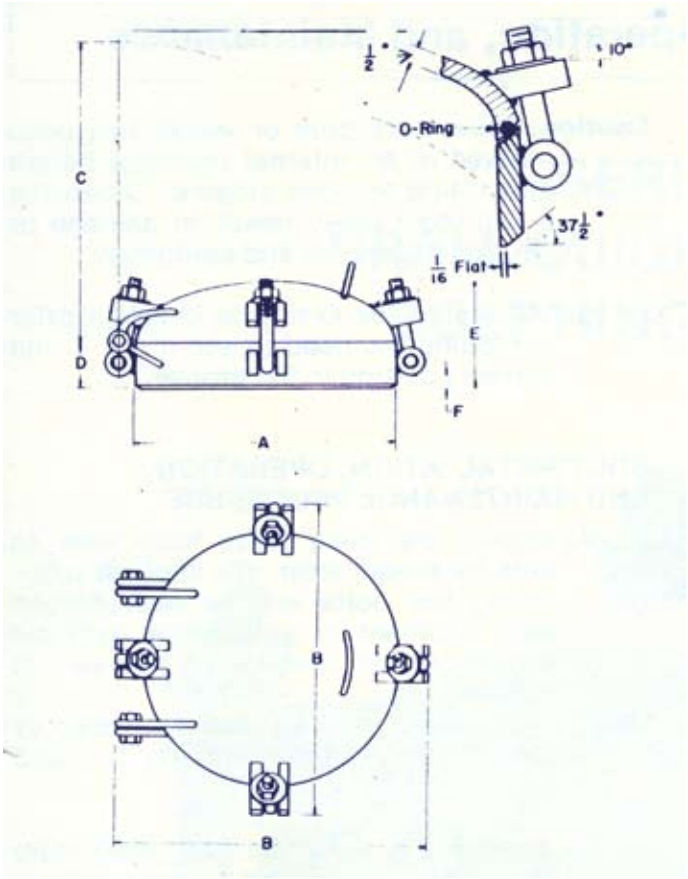

ASME Code Stamp and partial data report furnished (see current price list)

O-Ring – Buna 'N' is standard. Neophrene, Kalrez to 600º F., Viton, Silicone Rubber, and others furnished on request.

Carbon Steel – Working pressure 200 Psig at 100º F. standard. 300 lb., 400 lb., and 500 lb. available.

Stainless Steel – Available on request.

Economical & Simple Design

The low cost of Crall Swing Bolt Hinged Closures make them very attractive. A complete unit costs less than a slip-on flange and blind and are a lot easier to operate. All you have to do is weld them on.

Parts Available

Crall Closures are simply designed. All parts can be replaced if necessary. We crry extra bolts, nuts, washers, bolt pins and O-rings for quick replacement.

Size	Wrk. Press.	A Dimension I.D.	A Dimension O.D	B	C	D	E	No. & Size Bolts	Wt.	Force to Lift Cap
8	200	7-5/8	8-5/8	11	10	2-1/2	4-1/2	3-5/8	26	8
10	200	9-3/4	10-3/4	13	13	2-1/2	5-1/2	4-5/8	38	11
12	200	11-3/4	12-3/4	16	15	2-3/4	6	4-3/4	54	17
14	200	13	14	17	16	2-3/4	6-1/2	4-3/4	71	20
16	200	15	16	19	18	2-3.4	7	5-3/4	82	26
18	200	17	18	21	21	3	8	7-3/4	111	32
20	200	19	20	23	23	3	9	5–1	134	45
22	200	21	22	26	25	3-1/2	10	6–1	164	48
24	200	23	24	28	27	3-1/2	10-1/2	7–1	184	57
26	200	25	26	30	29	3-1/2	11	6–1-1/4	209	65
28	200	27	28	32	31	3-1/2	11-1/2	6–1-1/4	234	79
30	200	29	30	34	33	3-1/2	11-1/2	7–1-1/4	333	119
32	200	31	32	36	35	3-1/2	12	8–1-1/4	356	139
34	200	33	34	38	37	3-1/2	12	10–1-1/4	404	154
36	200	35	36	40	39	3-1/2	12-1/2	10–1-1/4	446	174

Larger sizes and 300, 400, 500, and 600 lb. working pressures available in all but the largest sizes. Contact factory.

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Procedures for Installation, Operation & Maintenance

Welding Closurer

(A) Crall Quick Opening Swing Bolt Hinged Closure will have a circumferential butt weld joining it to the vessel nozzle or pipe. When this is done, certain standard welding procedures should be taken to prevent damage to closure. If removal of the hub from the closure is imperative, make sure the head is also rejoined with its proper hub.
(B) O-ring must be removed from groove.
(C) Make sure the head is closed and bolts are tight to prevent and protect the seating surfaces from welding splatter. Vessel or pipe ends must line up evenly with hub so there will be a uniform gap for welding.
(D) Several tacks should be placed around the hub attaching it to the vessel or pipe. The number of tacks around the hub for correct attachment will depend on the size of the closure.
(E) Code procedure should be used when welding and care should be taken to keep weld metal deposition and heat input as low as possible and practical. Throughout is circumference there should be a welded uniform cross section.

O-ring Installation, Operation & Maintenance Procedure

(A) There will be an O-ring gasket packed separately. It will have a smaller diameter than the groove. The reason for this is so it will have a tighter fit. Install the O-ring at a 90º quadrant then work it into the groove at the quadrant. Do not roll the O-ring. Make sure the O-ring and groove are clean and free from all foreign material. We suggest coating the O-ring with vaseline for ambient temperatures and silicon for higher levels of temperatures.

Note: Install O-ring only after all welding on closure is completed.
Caution: Make sure pipe or vessel has been relieved of all internal pressure before attempting to open closure. Otherwise it will most likely result in damage or injuries to persons and equipment.
(B) Make sure the O-ring is checked prior to closing the head to see if it's in the correct position in the groove.

Bolt Installation, Operation & Maintenance Procedure

(A) inspect the head bolts from time to time for thread wear. We suggest lubricating the bolts with a hydrocarbon base lubricant in accordance with the frequency and severity of the service involved.
Note: Excessive thread wear can be caused by over tightening the bolts. Try to avoid doing so.
(B) If closure is to be painted make sure head is closed so the sealing surface is not damaged.
Note: Do not paint bolt threads.

Closure Opening Procedure

(A) When opening of the closure is necessary make sure all internal pressure or vacuum is relieved in pipe or vessel. Loosen the bolts, however, do not swing bolts loose from the head lugs until it is certain no pressure or vacuum exists in the pipe or vessel. Then continue to loose, at the stage you will become aware of the presence or absence of pressure. Proceed to swing bolts loose from head lugs then raise head At this stage the opening cycle is completed.