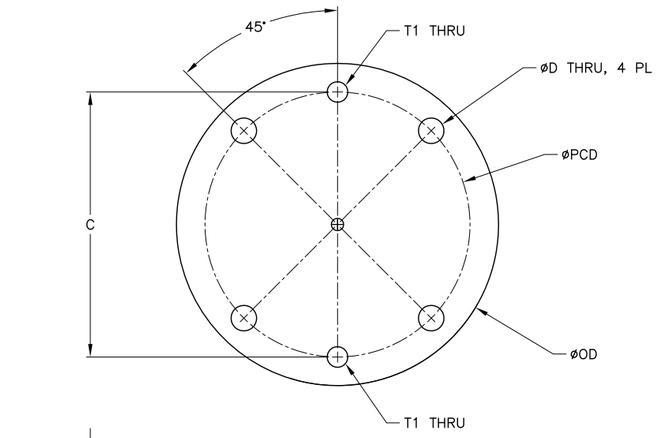
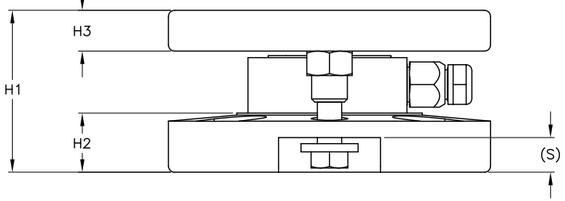
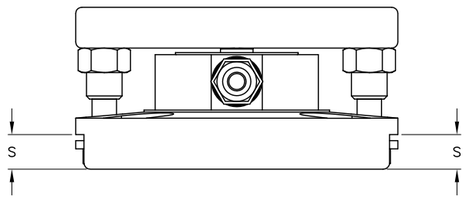
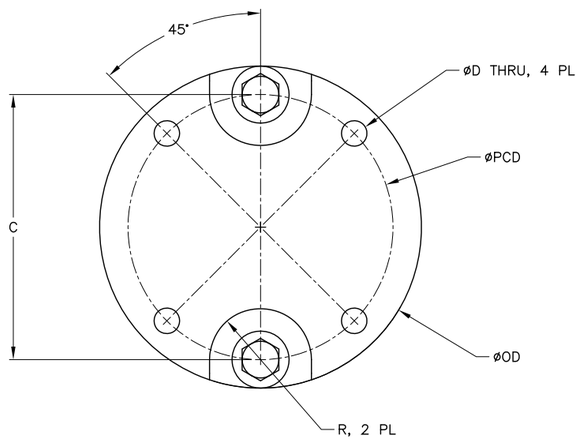
REV.	ECO/DDC	DESCRIPTION	DATE	DRAFT	CHECK	APV'D
A	----	RELEASED.	09-26-13	V.J.C.	T.K.	E.J.
B	11771	REVISED PER ECN.	10-08-15	V.J.C.	L.E.G.	V.J.C.

CAPACITY LBS [MT]	MODEL NUMBER ALLOY STEEL	MODEL NUMBER STAINLESS STEEL	LOAD SENSOR MODEL NUMBER	LOAD SENSOR CABLE LENGTH	MAXIMUM LIFT-OFF FORCE KLB [KN] *	MAXIMUM SIDE FORCE KLB [KN] *	WEIGHT - EXCLUDING LOAD SENSOR	WEIGHT - INCLUDING LOAD SENSOR
1.1 KLB [0.5MT]	HI HPLP-AS-1.1K	HI HPLP-AS-1.1K	HI HP50-SS-1.1K	20FT [6.1M]	11.2 [50]	11.2 [50]	13.8 LB [6.25KG]	15.5 LB [7.05KG]
2.2 KLB [1MT]	HI HPLP-AS-2.2K	HI HPLP-AS-2.2K	HI HP50-SS-2.2K	20FT [6.1M]	11.2 [50]	11.2 [50]	13.8 LB [6.25KG]	15.5 LB [7.05KG]
4.4 KLB [2MT]	HI HPLP-AS-4.4K	HI HPLP-AS-4.4K	HI HP50-SS-4.4K	20FT [6.1M]	11.2 [50]	11.2 [50]	13.8 LB [6.25KG]	15.5 LB [7.05KG]
11 KLB [5MT]	HI HPLP-AS-11K	HI HPLP-AS-11K	HI HP50-SS-11K	20FT [6.1M]	11.2 [50]	11.2 [50]	13.8 LB [6.25KG]	15.5 LB [7.05KG]
22 KLB [10MT]	HI HPLP-AS-22K	HI HPLP-AS-22K	HI HP50-SS-22K	20FT [6.1M]	22.5 [100]	22.5 [100]	25.4 LB [11.5KG]	32.6 LB [14.8KG]
44 KLB [20MT]	HI HPLP-AS-44K	HI HPLP-AS-44K	HI HP50-SS-44K	30FT [9.1M]	33.7 [150]	33.7 [150]	43.0 LB [19.5KG]	49.6 LB [22.5KG]
66 KLB [30MT]	HI HPLP-AS-66K	HI HPLP-AS-66K	HI HP50-SS-66K	30FT [9.1M]	33.7 [150]	33.7 [150]	43.0 LB [19.5KG]	49.6 LB [22.5KG]









* IN TANK/SILO APPLICATIONS WITH 3 OR 4 LOAD POINT MODULES, IT CAN BE ASSUMED THAT A MINIMUM OF 2 MODULES WILL EQUALLY SHARE ACTUAL SIDE FORCE (WIND).

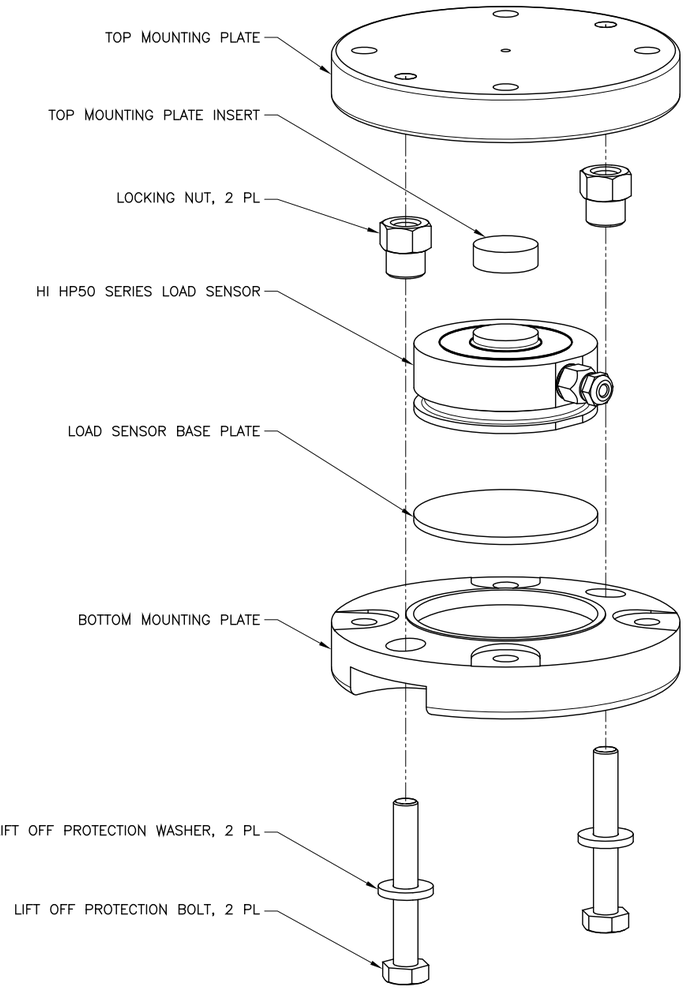
ACTUAL LIFT OFF FORCE SHALL, FOR WORST CASE, WILL BE ASSUMED TO BE TAKEN BY ONE MODULE.

FOR STAINLESS MODULES, REDUCE "MAX LIFT OFF FORCE" AND "MAX SIDE FORCE" STATED IN TABLE TO 60%.

DIMENSIONS- IN [MM]										TOLERANCES: ±0.015 [0.4] UNLESS OTHERWISE STATED
CAPACITY LBS [MT]	øPCD	øOD	C	øD	R	H1	H2	H3	S	T1 THD
1.1 KLB [0.5MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	M12
2.2 KLB [1MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	M12
4.4 KLB [2MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	M12
11 KLB [5MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	M12
22 KLB [10MT]	5.75 [146]	7.40 [188]	5.75 [146]	.49 [12.5]	1.08 [27.5]	4.08 [103.5]	1.46 [37]	1.18 [30]	.79 [20]	M16
44 KLB [20MT]	7.28 [185]	8.98 [228]	7.28 [185]	.65 [16.5]	1.38 [35]	4.88 [124]	1.65 [42]	1.28 [32.5]	.79 [20]	M16
66 KLB [30MT]	7.28 [185]	8.98 [228]	7.28 [185]	.65 [16.5]	1.38 [35]	4.88 [124]	1.65 [42]	1.28 [32.5]	.79 [20]	M16

2. SEE SHEETS 3 THROUGH 5 FOR FULL SCALE 2 DIMENSIONAL DROP-IN CAD FILE VIEWS.
1. SEE SHEET 2 FOR LOAD POINT INSTALLATION INSTRUCTIONS.

NOTES: UNLESS OTHERWISE SPECIFIED



HI HPLP SERIES LOAD POINT COMPONENTS

ITEM	QTY	PART NUMBER	DESCRIPTION	COMMENTS
		0588-0148	OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES	

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS: N/A
DECIMALS: .XX = ±.03
.XXX = ±.010
ANGLES: ±0°, 30'

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS

DRAWN	V. CHULA	DATE 09-23-13
CHECKED	T. KOPCZYNSKI	DATE 09-26-13
APPROVED	E. JAMES	DATE 09-26-13
ISSUED	V. CHULA	DATE 09-26-13
PRODUCTION		DATE

HARDY PROCESS SOLUTIONS

TITLE
OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES

SIZE	FSCM	DRAWING NO.	REV.
D	21316	0588-0148	B

FILE NAME: 588148B1.DWG | SCALE: NONE | SHEET 1 OF 5

INSTALLATION INSTRUCTIONS:

GENERAL:
THE HI HPLP LOAD POINT MODULES CAN PREFERABLY BE WELDED TO THE LOAD CARRIER AND FOUNDATION, WHICH WILL ELIMINATE THE PROBLEM OF ALIGNING THE HOLES ON TOP AND BOTTOM MOUNTING PLATES, OR, THEY CAN BE BOLTED ON TOP AND WELDED ON BOTTOM, ETC. THE LOAD POINT MODULES ARE DELIVERED AS SEPARATE PARTS AND WILL NEED TO BE PRE–ASSEMBLED WITH DUMMY LOAD CELLS BEFORE START OF INSTALLATION AS SHOWN ON FIGURE 1.

INSTALLATION – WELDED MODULE:

1. POSITION THE PRE–ASSEMBLED MODULES (WITH DUMMY LOAD CELL) ON THE FOUNDATION PLATES AND LOWER THE LOAD CARRIER ONTO THE LOAD POINT MODULE AS SHOWN IN FIGURE 2.

2. WELD MODULE TOP AND BOTTOM MOUNTING PLATES AS SHOWN IN FIGURE 2. SEE NOTE 2 BELOW FOR TOP AND BOTTOM MOUNTING PLATE MATERIAL SPECIFICATIONS.

3. LOOSEN THE LIFT OFF PROTECTION BOLT AS FAR AS POSSIBLE. POSITION THE LOCKING NUT IN THE MIDDLE SECTION OF THE LIFT OFF PROTECTION BOLT.

4. ON ONE MODULE AT A TIME, LIFT THE LOAD CARRIER SLIGHTLY, 6–8 MM, TO ALLOW REMOVAL OF THE DUMMY LOAD CELL. LIFTING IS PREFERABLY DONE WITH A HYDRAULIC JACK POSITIONED IN A SUITABLE POSITION CLOSE TO THE MODULE.
CAUTION: OBSERVE THE LIFT OFF PROTECTION BOLTS WHILE LIFTING. WHEN THE BOLT HEAD & WASHER TOUCHES THE BOTTOM MOUNTING PLATE, STOP LIFTING AND REPEAT STEP 3.

5. REMOVE ONLY THE DUMMY LOAD CELL AND REPLACE WITH THE TOP MOUNTING PLATE INSERT AND THE HI HP50 SERIES LOAD SENSOR.

6. LOWER THE LOAD CARRIER ONTO THE LOAD SENSOR AND REMOVE THE JACK.
CAUTION: OBSERVE THE LIFT OFF PROTECTION BOLTS WHILE LOWERING. LOOSEN THE BOLTS AS THE LOAD CARRIER IS BEING LOWERED.

7. SET THE "LIFT OFF GAP" TO 2–3 MM AND LOCK THE LIFT OFF PROTECTION SCREW WITH THE LOCKING NUT.

8. REPEAT THE PROCEDURE DESCRIBED IN STEPS 4–7 ABOVE FOR ALL LOAD POINT MODULES.

INSTALLATION – BOLTED MODULE:

1. FIX THE PRE–ASSEMBLED MODULE (WITH DUMMY LOAD CELL) ON THE FOUNDATION PLATE USING FOUR (4) MOUNTING BOLTS ON THE BOTTOM MOUNTING PLATE AND LOWER THE LOAD CARRIER ONTO THE LOAD POINT MODULE.

2. MARK ALL THE BOLT HOLE CENTER POSITIONS FOR TOP MOUNTING PLATE ON THE LOAD CARRIER.

3. LIFT THE LOAD CARRIER, DRILL/TAP ON THE HOLE CENTER MARKS, THEN LOWER ONTO THE LOAD POINT MODULE. MAKE SURE THE LOAD CARRIER IS PROPERLY ALIGNED WITH THE LOAD POINT MODULE WITH RESPECT TO THE TOP MOUNTING PLATE HOLE POSITIONS.

4. ON ONE MODULE AT A TIME, LIFT THE LOAD CARRIER SLIGHTLY, 20–25 MM, TO ALLOW REMOVAL OF THE DUMMY LOAD CELL. LIFTING IS PREFERABLY DONE WITH A HYDRAULIC JACK POSITIONED IN A SUITABLE POSITION CLOSE TO THE MODULE.
CAUTION: OBSERVE THE LIFT OFF PROTECTION BOLTS WHILE LIFTING. WHEN THE BOLT HEAD & WASHER TOUCHES THE BOTTOM MOUNTING PLATE, STOP LIFTING AND REPEAT STEP 3.

5. DISASSEMBLE TOP PLATE FROM THE LIFT OFF PROTECTION BOLTS AND FIX IT TO THE LOAD CARRIER.

6. REMOVE ONLY THE DUMMY LOAD CELL AND REPLACE WITH THE TOP MOUNTING PLATE INSERT AND THE HI HP50 SERIES LOAD SENSOR.

7. LOWER THE LOAD CARRIER ONTO THE LOAD SENSOR AND REMOVE THE JACK.
CAUTION: OBSERVE THE LIFT OFF PROTECTION BOLTS WHILE LOWERING. LOOSEN THE BOLTS AS THE LOAD CARRIER IS BEING LOWERED.

INFORMATION: USE BLOCKING WHILE LOWERING THE LOAD CARRIER. THIS WILL ALLOW THE LIFT OFF PROTECTION BOLTS TO EASILY ENGAGE WITH THE TOP MOUNTING PLATE. BLOCK HEIGHT SHOULD BE SELECTED FROM THE DIMENSIONS TABLE SHOWN BELOW.

8. SET THE "LIFT OFF GAP" TO 2–3 MM AND LOCK THE LIFT OFF PROTECTION SCREW WITH THE LOCKING NUT.

9. REPEAT THE PROCEDURE DESCRIBED IN STEPS 4–8 ABOVE FOR ALL LOAD POINT MODULES.

NOTE 1.

IN TANK/SILO APPLICATIONS WITH 3 OR 4 LOAD POINT MODULES, IT CAN BE ASSUMED THAT A MINIMUM OF 2 MODULES WILL EQUALLY SHARE ACTUAL SIDE FORCE (WIND).

ACTUAL LIFT OFF FORCE SHALL, FOR WORST CASE, WILL BE ASSUMED TO BE TAKEN BY ONE MODULE.

FOR STAINLESS STEEL MODULES, REDUCE "MAX LIFT OFF FORCE" AND "MAX SIDE FORCE" STATED IN TABLE ON SHEET 1 TO 60%.

NOTE 2.

MATERIAL FOR ALLOY STEEL LOAD POINT MODULE TOP AND BOTTOM MOUNTING PLATES IS MS355JO, ZINC PLATED, WITH TRIVALENT CHROMIUM PASSIVATION.
IF WELDING IS TO BE DONE, MATERIALS MUST BE BROUGHT UP TO SUITABLE TEMPERATURES BEFORE WELDING. AFTER WELDING, CLEAN, APPLY PRIMER AND PROTECTIVE PAINT.

STAINLESS STEEL LOAD POINT MODULE TOP AND BOTTOM MOUNTING PLATES ARE MADE OF ASTM–A240 TYPE 304 (S30400) AND ARE ELECTRO–POLISHED WITH A NOMINAL RA SURFACE RATING OF 0.5.

NOTE 3:

OPERATING TEMPERATURE RATING FOR THE LOAD POINT MODULES IS –20°C TO +65°C.
USAGE OF LOAD POINT MODULE AT TEMPERATURES BELOW –20°C REQUIRES THAT THE ENTIRE LOAD POINT MODULE ASSEMBLY AND LOAD SENSOR CABLE BE TEMPERATURE CONTROLLED.

FIGURE 1 – MODULE ASSEMBLY

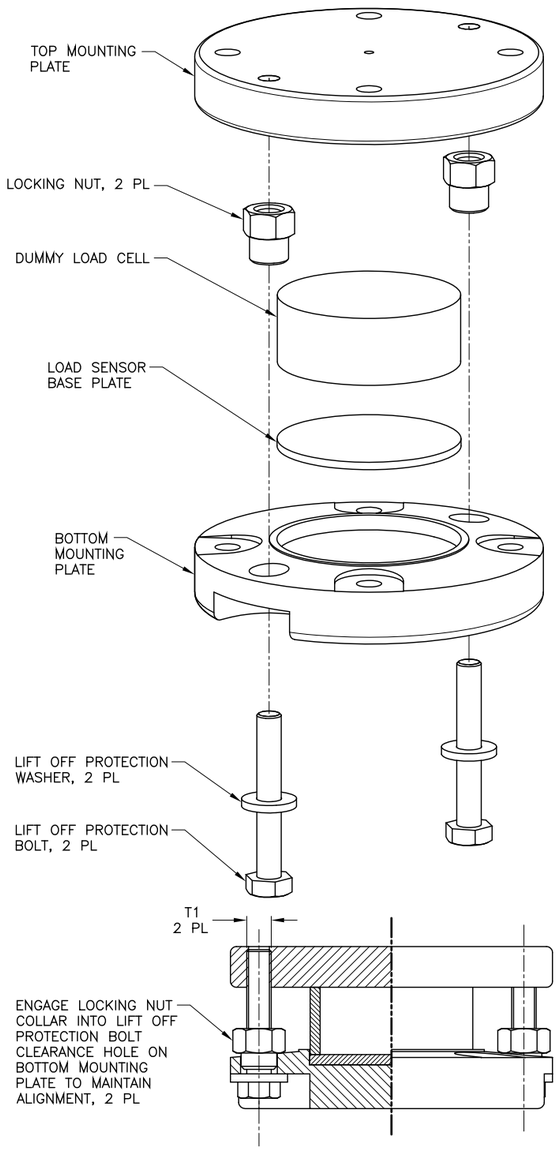


FIGURE 2 – WELDED MODULE ASSEMBLY INSTALLED

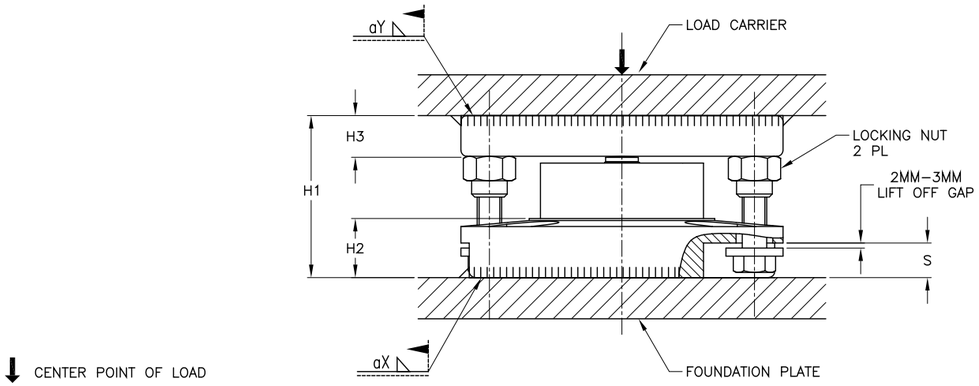
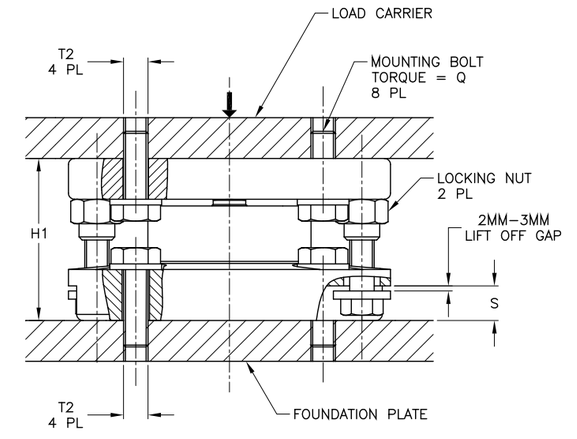
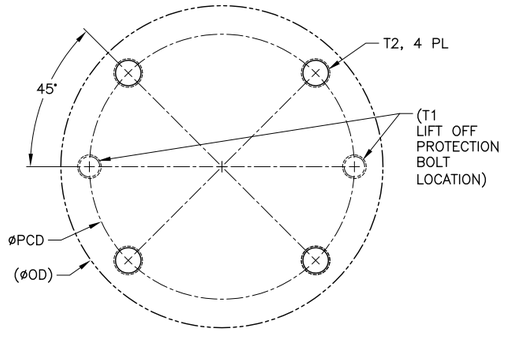
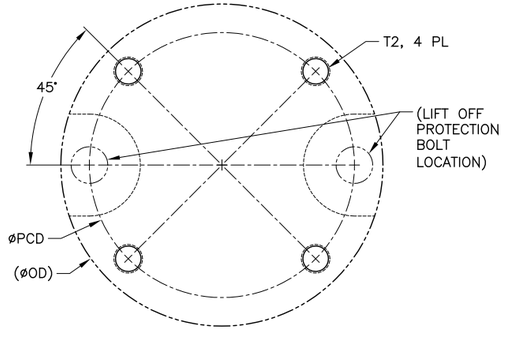


FIGURE 3 – BOLTED MODULE ASSEMBLY INSTALLED





TOP MOUNTING PLATE BOLT PATTERN



BOTTOM MOUNTING PLATE BOLT PATTERN

DIMENSIONS– IN [MM]

TOLERANCES: ±0.015 [0.4] UNLESS OTHERWISE STATED

CAPACITY LBS [MT]	øPCD	øOD	C	øD	R	H1	H2	H3	S	BLOCK HEIGHT	BOLT THREAD		TORQUE	WELDS	
											T1	T2	Q	X	Y
1.1 KLB [0.5MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	3.74 [95]	M12	M12	37 LB–FT [50NM]	.24 [6]	.16 [4]
2.2 KLB [1MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	3.74 [95]	M12	M12	37 LB–FT [50NM]	.24 [6]	.16 [4]
4.4 KLB [2MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	3.74 [95]	M12	M12	37 LB–FT [50NM]	.24 [6]	.16 [4]
11 KLB [5MT]	5.12 [130]	6.22 [158]	5.12 [130]	.49 [12.5]	.98 [25]	3.13 [79.5]	1.14 [29]	.79 [20]	.67 [17]	3.74 [95]	M12	M12	37 LB–FT [50NM]	.24 [6]	.16 [4]
22 KLB [10MT]	5.75 [146]	7.40 [188]	5.75 [146]	.49 [12.5]	1.08 [27.5]	4.08 [103.5]	1.46 [37]	1.18 [30]	.79 [20]	5.00 [127]	M16	M12	37 LB–FT [50NM]	.24 [6]	.16 [4]
44 KLB [20MT]	7.28 [185]	8.98 [228]	7.28 [185]	.65 [16.5]	1.38 [35]	4.88 [124]	1.65 [42]	1.28 [32.5]	.79 [20]	5.91 [150]	M16	M16	89 LB–FT [121NM]	.31 [8]	.24 [6]
66 KLB [30MT]	7.28 [185]	8.98 [228]	7.28 [185]	.65 [16.5]	1.38 [35]	4.88 [124]	1.65 [42]	1.28 [32.5]	.79 [20]	5.91 [150]	M16	M16	89 LB–FT [121NM]	.31 [8]	.24 [6]

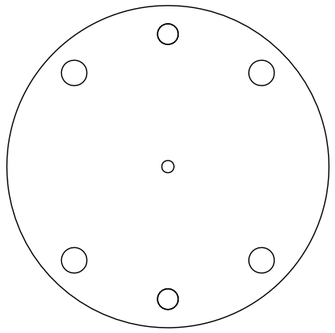
HARDY PROCESS SOLUTIONS

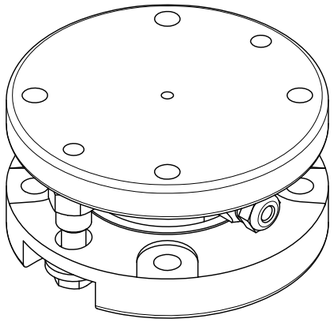
TITLE
OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES

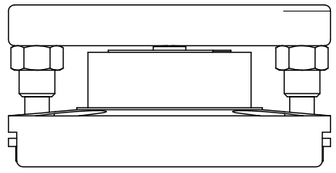
SIZE	FSCM	DRAWING NO.	REV.
D	21316	0588–0148	B

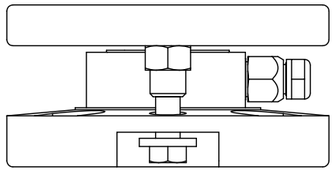
FILE NAME: 588148B1.DWG | SCALE: NONE | SHEET 2 OF 5

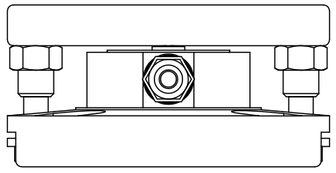
1.1 KLB – 11 KLB LOAD POINT DROP–IN CAD FILE VIEWS

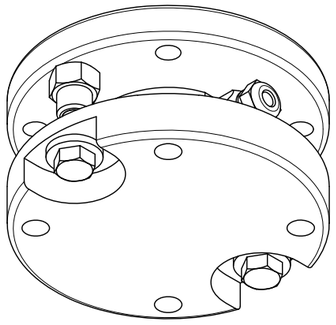


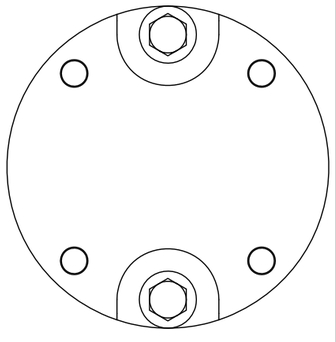












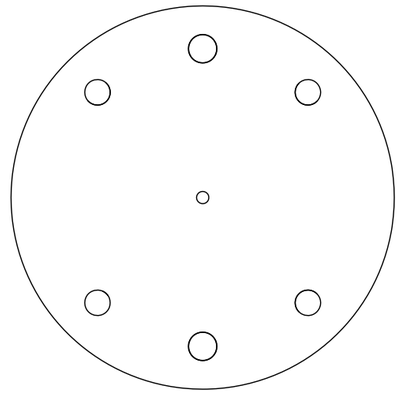
HARDY PROCESS SOLUTIONS

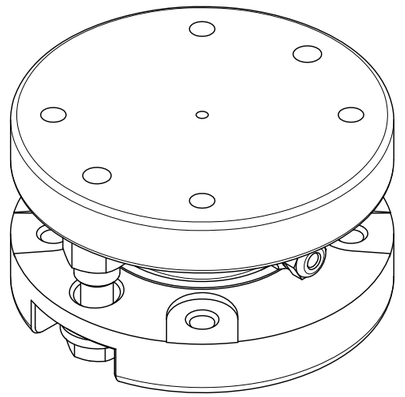
TITLE
OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES

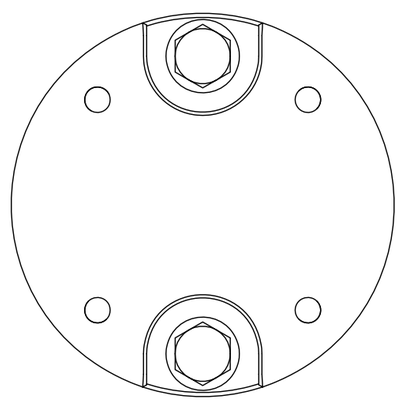
SIZE	FSCM	DRAWING NO.	REV.
D	21316	0588–0148	B

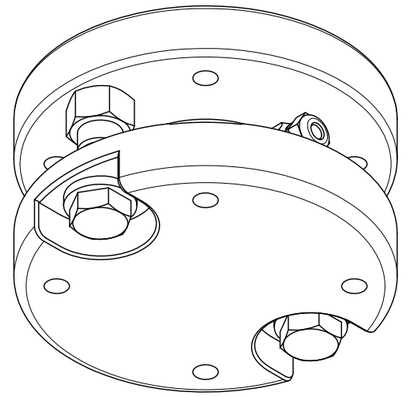
FILE NAME: 588148B1.DWG	SCALE: NONE	SHEET 3 OF 5

22 KLB LOAD POINT DROP-IN CAD FILE VIEWS









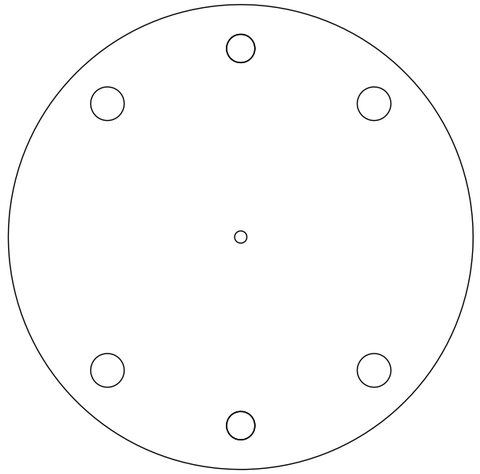
HARDY PROCESS SOLUTIONS

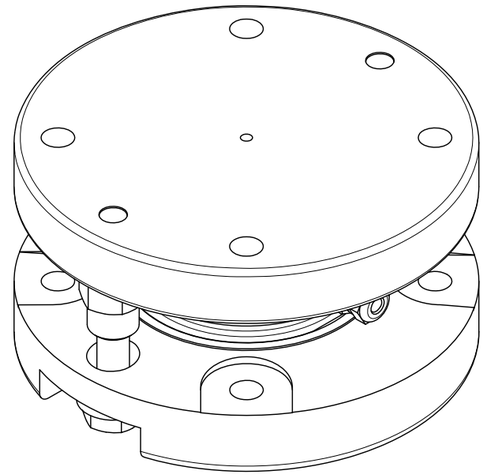
TITLE
OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES

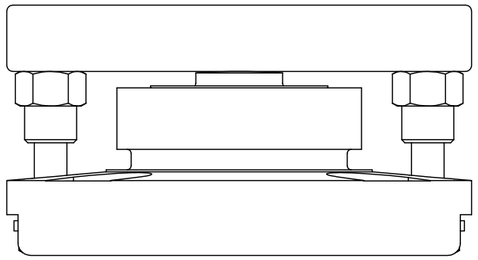
SIZE	FSCM	DRAWING NO.	REV.
D	21316	0588-0148	B

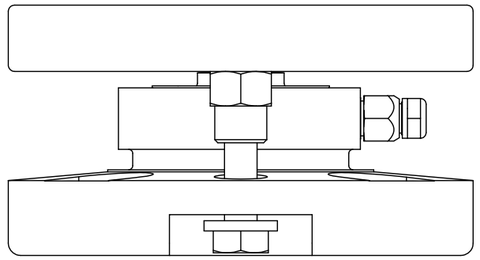
FILE NAME: 588148B1.DWG	SCALE: NONE	SHEET 4 OF 5

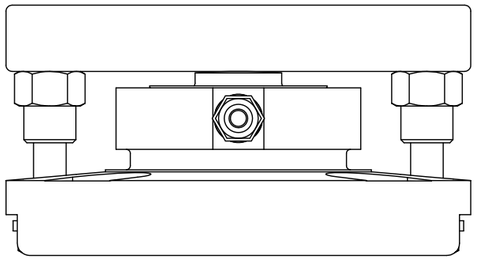
44 KLB – 66 KLB LOAD POINT DROP–IN CAD FILE VIEWS

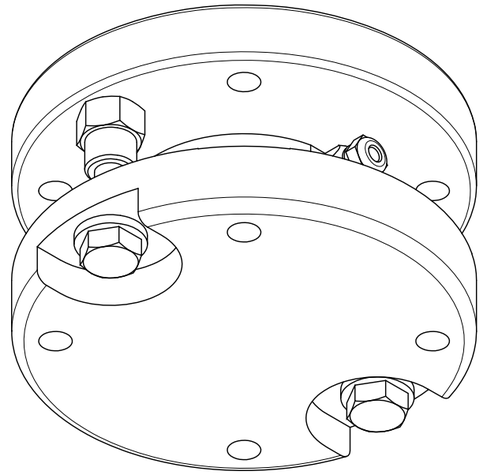


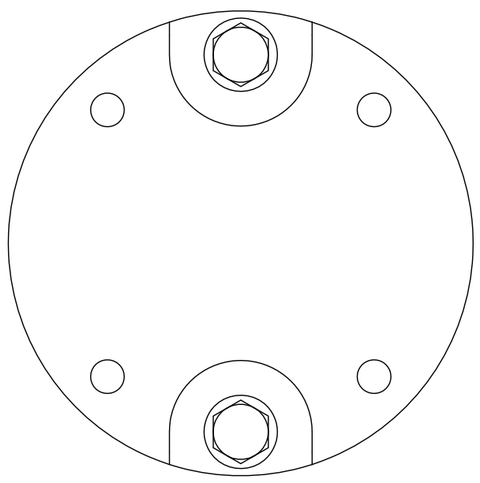












HARDY PROCESS SOLUTIONS

TITLE
OUTLINE DRAWING, LOAD POINT, HI HPLP SERIES

SIZE	FSCM	DRAWING NO.	REV.
D	21316	0588–0148	B

FILE NAME: 588148B1.DWG	SCALE: NONE	SHEET 5 OF 5