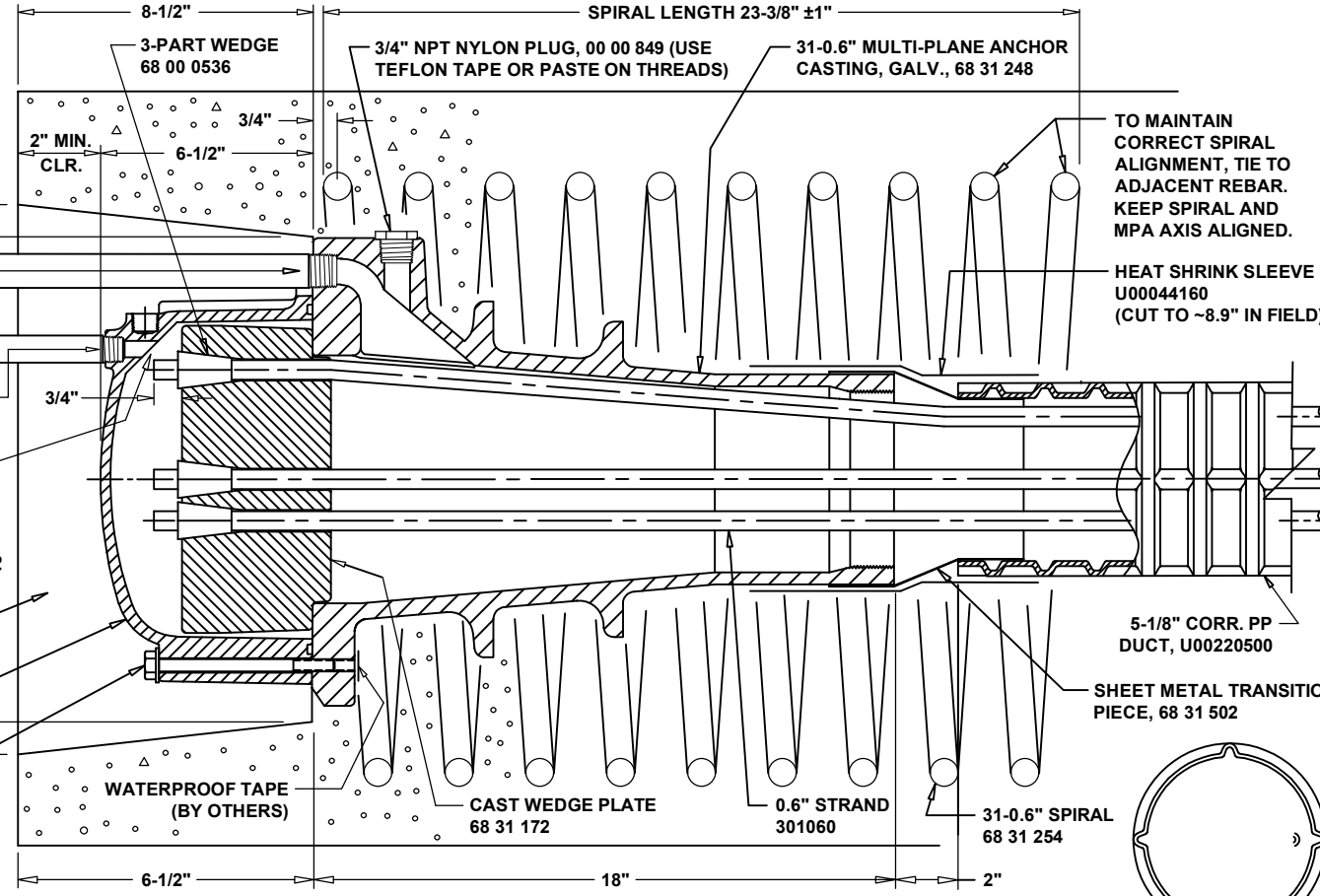


**WARNING:** READ AND COMPLY WITH ALL APPLICABLE SAFETY AND OPERATING INSTRUCTIONS AND WARNINGS FOR MULTI-STRAND STRESSING BEFORE STARTING ANY WORK OR OPERATION.

**CAUTION:** WHEN PRESSURIZING GROUT CAPS, DO NOT STAND BEHIND CAPS!



**INSTALLATION PROCEDURE:**  
BELOW PROCEDURE IS GENERIC. USERS SHALL REFER TO FDOT STANDARD SPECIFICATIONS AND PROJECT SPECIFIC CRITERIA

- PREASSEMBLE THE MULTI-PLANE ANCHOR AND SPIRAL. GREASE THE BOLTS TO FACILITATE REMOVAL LATER.
- BOLT THE MULTI-PLANE ANCHOR (MPA) TO THE POCKET FORMER USING THREADED HOLES IN MPA. THE MPA SHALL BE ORIENTED SUCH THAT THE GROUT HOLE POINTS UP. THE SPIRAL SHOULD BE ATTACHED TO ADJACENT REBARS AND ROTATED SUCH THAT IT WON'T INTERFERE WITH 3/4" NPT PIPE ATTACHMENT (IF USING SIDE GROUT HOLE IN MPA). ALIGN AXIS OF SPIRAL WITH ANCHOR. USE PLUG IN UNUSED PORT IN MPA AS SHOWN. INSTALL PIPE NIPPLE WITH FOAM INSULATION FOR ANY PIPE NIPPLE CAST IN CONCRETE.
- INSTALL THE DUCT SYSTEM AS SHOWN ON SHOP DRAWINGS. PUT TRANSITION PIECE ONTO THE MPA CASTING AND PUT THE DUCT ONTO THE TRANSITION PIECE AND SEAL CONNECTION WITH HEAT SHRINK. SECURE DUCT PROFILE EVERY TWO FEET.
- PRESSURE TEST DUCT SYSTEM PER FDOT SPECS 462-8.2.1.1.

**CONCRETING CAN NOW PROCEED**

- AFTER COMPLETION OF CONCRETE PLACEMENT, PROVE THAT THE DUCTS ARE CLEAR OF ANY OBSTRUCTIONS OR DAMAGE. PASS A TORPEDO THROUGH THE DUCT TO DEMONSTRATE.
- PROVE THAT ALL GROUT VENTS ARE FREE AND SECURED.
- AFTER THE CONCRETE HAS GAINED STRENGTH, THE STRESSING OPERATION MAY BEGIN.
- INSTALL STRANDS BY PUSHING OR PULLING INDIVIDUALLY OR AS A BUNDLE INTO DUCTS. ALLOW SUFFICIENT TAIL LENGTH FOR STRESSING.
- CHECK THE WEDGE PLATE FOR RUST, DIRT AND GRIT. CLEAN WEDGE HOLES WITH WIRE BRUSH IF NECESSARY. LIGHTLY GREASE OR OIL WEDGE HOLES.
- CHECK WEDGES FOR RUST, DIRT AND GRIT. DISCARD RUSTY WEDGES. USE ONLY CLEAN WEDGES.
- INSTALL WEDGE PLATE, SLIP THE WEDGES OVER THE STRANDS AND LOOSELY SEAT IN WEDGE HOLES.

**STRESSING CAN PROCEED WHEN CONCRETE STRENGTH HAS REACHED MIN. COMPRESSIVE STRENGTH REQUIRED IN CONTRACT DRAWING NOT LESS THAN 4000 PSI.**

- AFTER THE STRESSING OPERATION IS COMPLETED AND THE ELONGATIONS FALL WITHIN ±7%, OBTAIN APPROVAL FROM THE ENGINEER TO CUT THE STRAND TAILS APPROXIMATELY 3/4" AWAY FROM THE WEDGES.
- EVALUATE STRESSING OPERATION IF ELONGATIONS FALL OUTSIDE THE 7% LIMIT.
- INSTALL GROUT CAP WITH O-RING USING SIX BOLTS. CONNECT 1/2" PIPE NIPPLE IN PORT TO BE USED, INSERT DRILL BIT INTO PIPE NIPPLE AND DRILL 1/2" HOLE IN CAP USING SAW BIT OR SPADE BIT (BY OTHERS) TO PREVENT DAMAGE TO THREADS.
- CONNECT THE 3/4" NPT PIPE NIPPLE ASSEMBLY INTO THE FRONT PORT OF THE MPA.
- THREAD 1/2" NPT PIPE NIPPLE ASSEMBLY INTO THE THREADED PORTS PROVIDED IN THE GROUT CAP. THIS PORT CAN BE USED AS AN INJECTION VENT ONLY.
- PRESSURE TEST DUCT SYSTEM PER FDOT SPECS 462-8.2.2.

**GROUTING CAN NOW PROCEED**

- REMOVE GROUT PORT PIPES AND INSERT PLUGS. FILL BLOCKOUT AND HOLES WITH EPOXY GROUT AFTER POST GROUTING OPERATIONS AND INSPECTIONS ARE COMPLETED.

REFER TO STANDARD PLANS 462-003 FOR PT ANCHORAGE AND TENDON FILLING DETAILS

MATERIAL LIST		
PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
68 31 248	31-0.6" MULTI-PLANE ANCHOR CASTING, GALVANIZED	DUCTILE IRON ASTM A536, GR 65-45-12 GALVANIZED ACCORDING TO ASTM A123
68 31 254	31-0.6" STANDARD SPIRAL	ASTM A615, GR. 60, #6, 2-1/2" PITCH 19" O.D., 9 FULL TURNS
68 31 502	TRANSITION PIECE	24 GA SHEET METAL
68 31 172	31-0.6" CAST WEDGE PLATE	DUCTILE IRON 80-55-06
68 31 7230	31-0.6" NYLON CAP WITH O-RING	CAP: NYLON 6, 20% GLASS FILLED O-RING: EPDM
U00220500	5-1/8" (130mm) CORRUGATED PP DUCT	POLYPROPYLENE
U00220505	(OPTIONAL) 5-1/8" SLIP-ON COUPLER	POLYPROPYLENE
U00044160	HEAT SHRINK SLEEVE, PLA-160-450-BK	ACCORDING TO FDOT SPEC. 960-2.2.1.8
301060	0.6" STRAND	270 KSI LOW RELAX STRAND
68 00 0536	3-PART WEDGE FOR 0.6" STRAND	AISI-C12L14 HEAT TREATED

MATERIAL LIST		
PART NO.	DESCRIPTION	MATERIAL SPEC.
00 00 790	(6) 3/8"-16UNC HEX BOLT, 5.5" LONG (GROUT CAP)	316 STAINLESS STEEL
00 00 774	(6) SMALL DIA. WASHERS (FOR GROUT CAP)	316 STAINLESS STEEL
00 00 878	3/4" NPT PIPE NIPPLE, LENGTH AS REQ'D (TEMP.)	SCH 40 BLACK STEEL
00 00 834	3/4" NPT BALL VALVE (TEMPORARY)	PVC
00 00 849	3/4" NPT PLUG	NYLON 6, WHITE
00 00 678	1/2" NPT PIPE NIPPLE, LENGTH AS REQ'D (TEMP.)	SCH 40 BLACK STEEL
00 00 634	1/2" NPT BALL VALVE (TEMPORARY)	PVC
00 00 649	1/2" NPT PLUG	NYLON 6, WHITE
00 00 861	(OPTIONAL) 3/4" NPT GROUT VENT PORT	POLYPROPYLENE

**NOTES:**  
1. REQUIRED REINFORCING BARS NOT SHOWN.  
2. DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.

**INTERNAL GROUTED 31-0.6" MA ASSEMBLY DRAWING**

DATE: 05-07-19 DWG: G. MALECKI CHK: S.I. APP: S.I.

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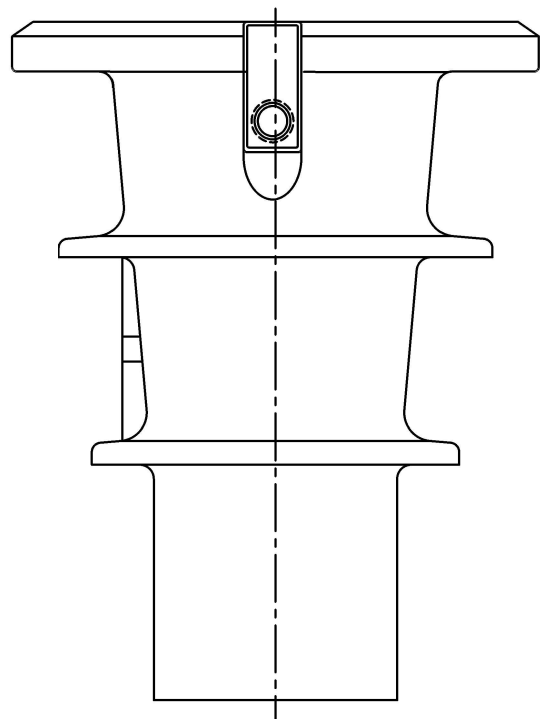
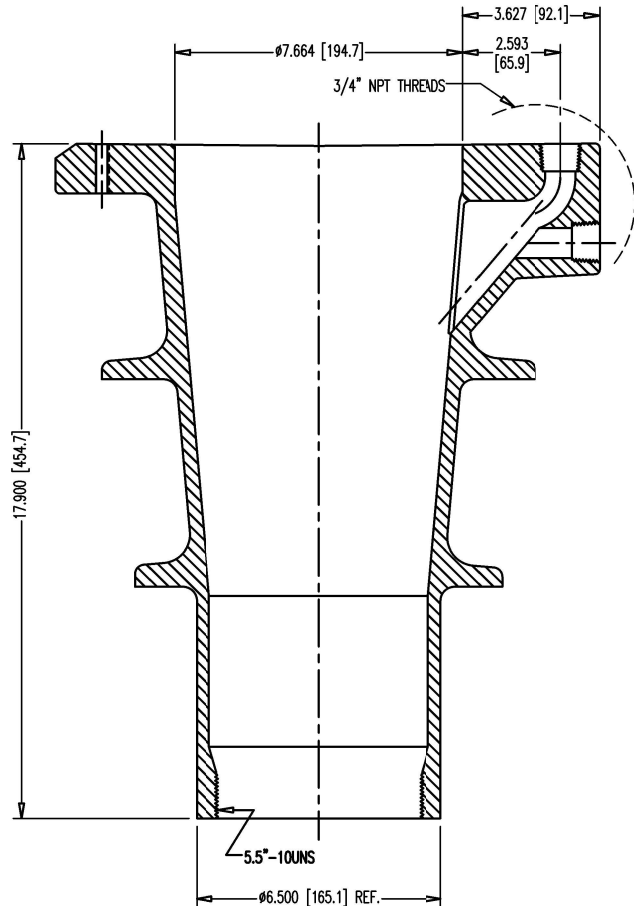
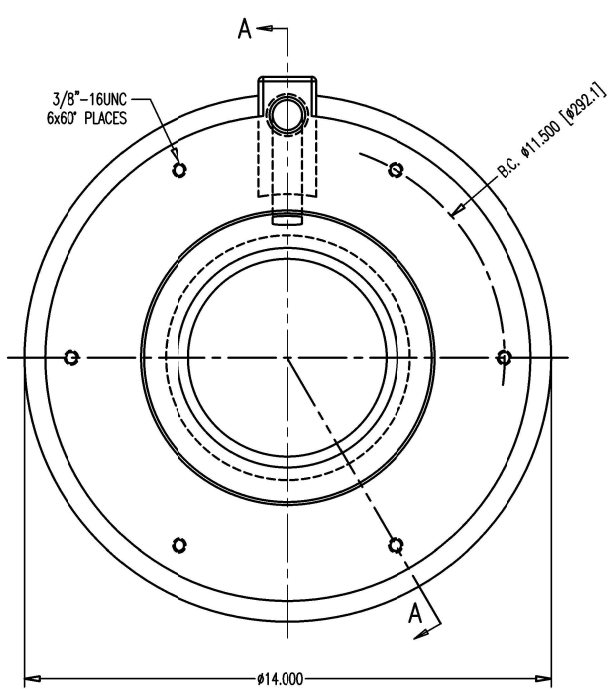
REV.	DATE	NAME	PART NUMBER:

SCALE: 1:6

DRAWING NUMBER: MA 68 31 200

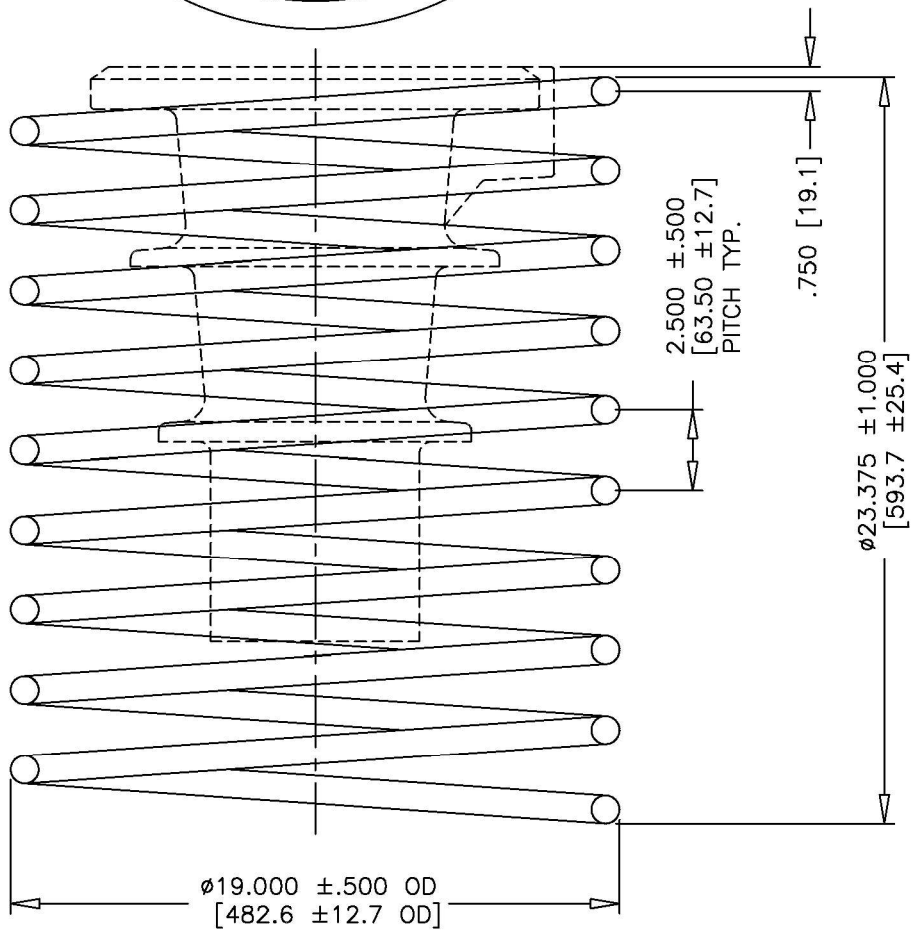
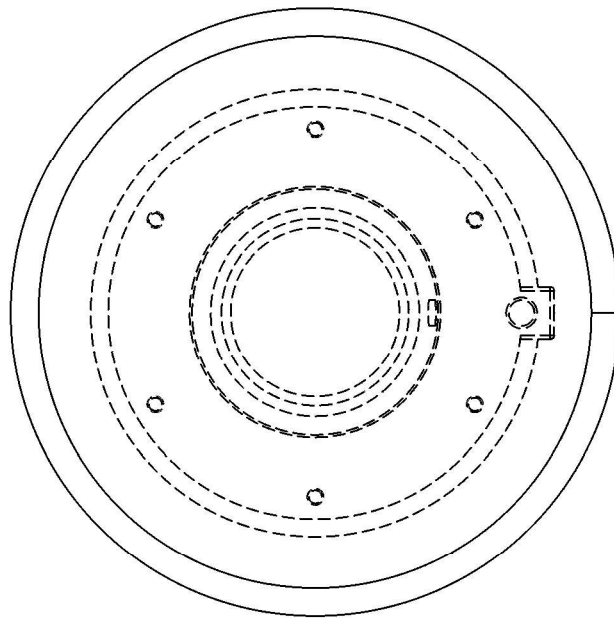
DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.  
POST TENSIONING / REINFORCING UNIT PHONE: 630-739-1100  
320 MARMON DRIVE - BOLINGBROOK, IL FAX: 630-739-1405





- NOTES FOR GALVANIZING PARTS:
1. GALVANIZE ACCORDING TO ASTM A123 AND TAKE CARE HOW CASTINGS ARE STORED TO PREVENT RUST.
  2. DRILL & TAP BOLT HOLES AND GROUT PORTS AND SPRAY THEM WITH ZINC RICH PAINT ACCORDING TO ASTM A780, ENSURE THREADABILITY.

DIMENSIONS: INCH (mm) mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: Q80021200C		TOLERANCES: ±.030 ±.02" UNLESS NOTED		WEIGHT ~93 LBS.	REV.	DATE	NAME	ECRN	PART NUMBER: 68 31 248
<b>31-0.6" MULTI-PLANE ANCHOR WITH TWO GROUT PORTS-GALV.</b>				MATERIAL: DUCTILE IRON 65-45-12 ASTM A536		SCALE 3:10 UNLESS NOTED					DRAWING NUMBER: 68 31 216
				DATE: 10-08-18   DWG: G. MALECKI   CHK: S.Y.   APP: E.Z.		<b>DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.</b> 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100 FAX: 630-739-1405					

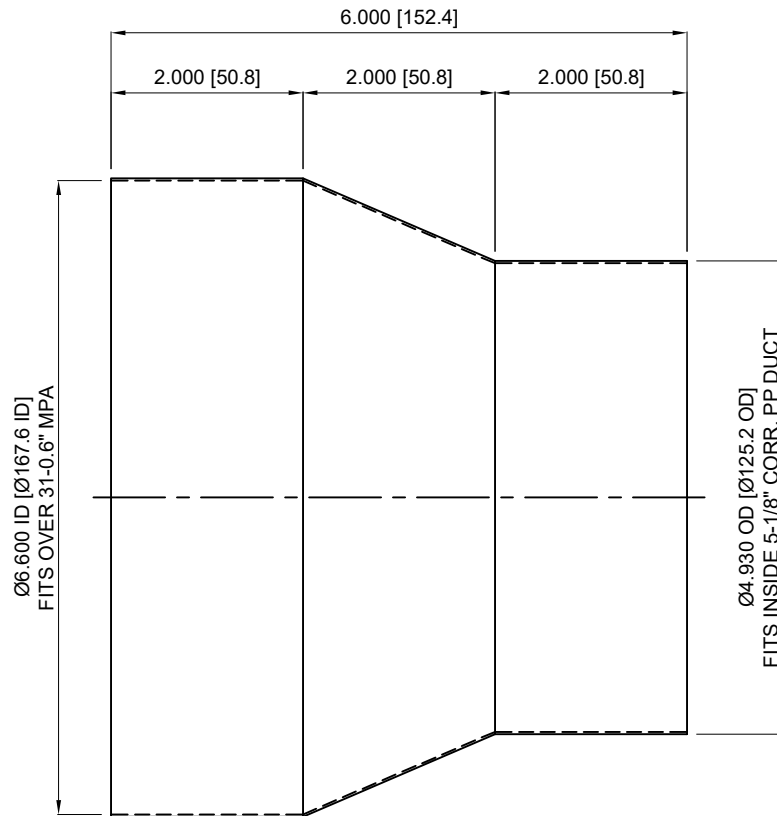


**NOTES:**

1. SPIRAL IS MADE FROM STANDARD #6 REBAR, NO PART NUMBER MARKING IS SHOWN.
2. KEEP SPIRAL AND MPA AXIS ALIGNED, IF USING SIDE PORT, ROTATE SPIRAL TO CLEAR.

NUMBER OF FULL TURNS: 9  
 DEVELOPED LENGTH: 43'-0-1/2"  
 WEIGHT: ~64.5 LBS.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS60021400A		TOLERANCES: ±.020 UNLESS NOTED	WEIGHT ~64.5 LBS.	REV.	DATE	NAME	ECRN	PART NUMBER: <b>68 31 254</b>	
<b>STANDARD SPIRAL FOR 31-0.6" MPA</b>				MATERIAL: ASTM A615 SIZE #6, GR 60	SCALE 1:6					DRAWING NUMBER: <b>68 31 254</b>	
				DATE: 10-25-16	DWG: G. MALECKI	CHK: S.Y.	APP: S.E.				
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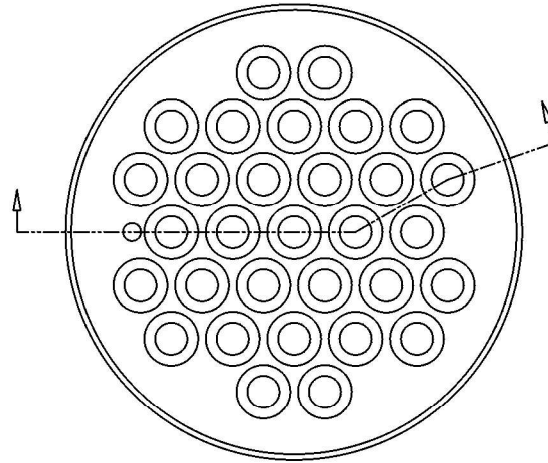
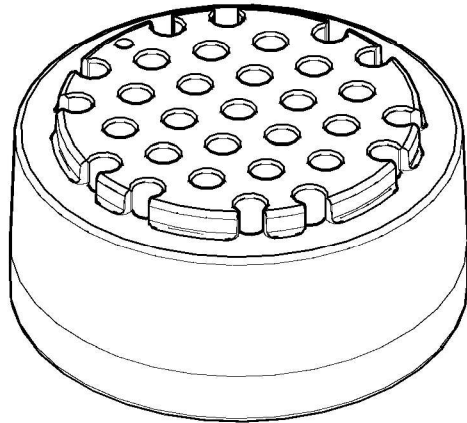


**MATERIAL:**

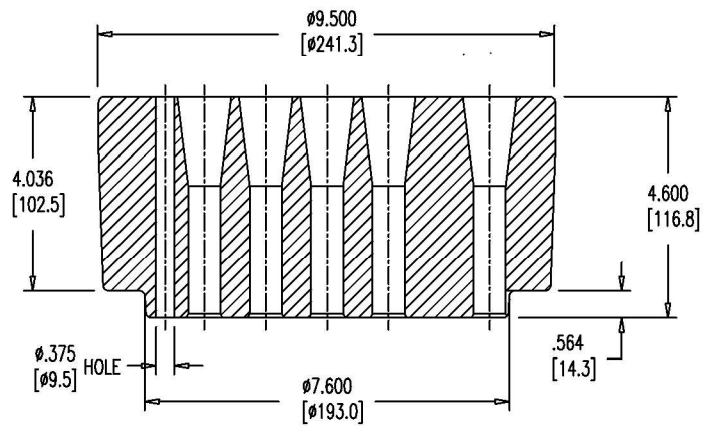
24 GAUGE GALVANIZED SHEET METAL  
 WALL THICKNESS = 0.0276"

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		TOLERANCES: UNLESS NOTED	WEIGHT	REV.	DATE	NAME	PART NUMBER <b>68 31 502</b>
TRANSITION PIECE FOR 31-0.6" GROUTED TENDON USING CORR. PP DUCT				MATERIAL: SEE ABOVE	SCALE 1 : 2				DRAWING NUMBER: <b>68 31 502</b>
				DATE: 03/21/19	DWG: G. MALECKI	CHK: SI	APP: SI		
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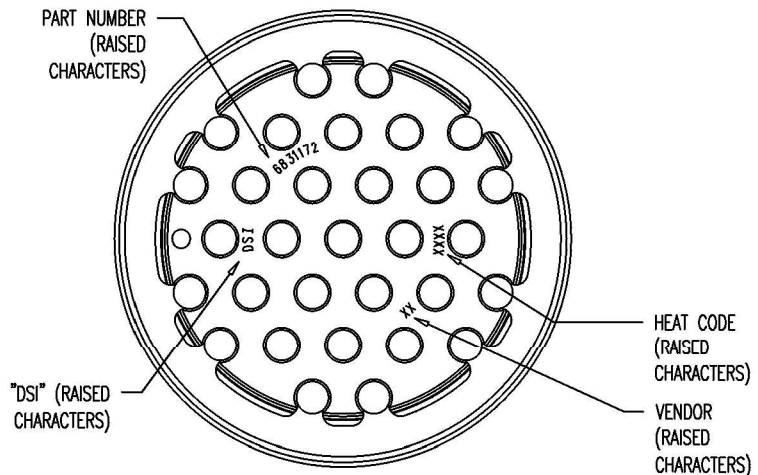




TOP VIEW

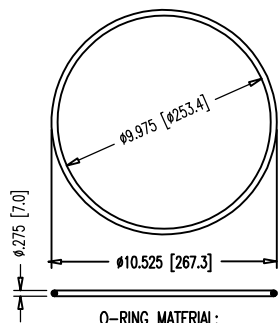
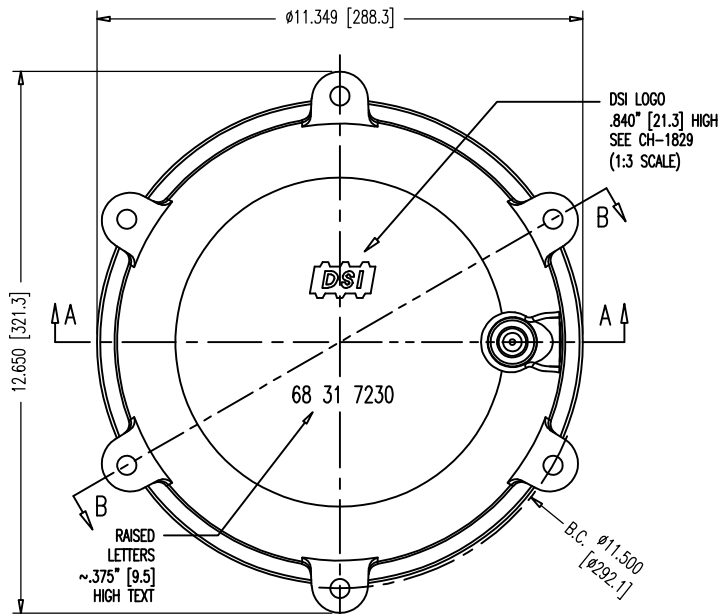


SECTION VIEW



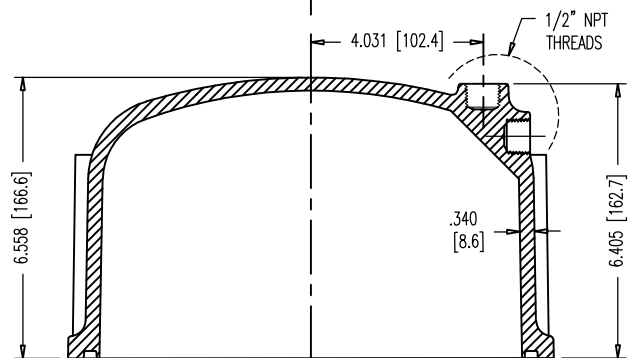
BOTTOM VIEW

DIMENSIONS: INCH / mm mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS00015320C		TOLERANCES: ±.020 UNLESS NOTED	WEIGHT ~62.2 LBS.	REV.	DATE	NAME	PART NUMBER: 68 31 172
<b>31-0.6 CAST WEDGE PLATE (HEX PATTERN)</b>				MATERIAL: DUCTILE IRON 80-55-06 ASTM A536	SCALE 1:4				DRAWING NUMBER: 68 31 172
DATE: 09-04-15	DWG: G. MALECKI	CHK: S.Y.	APP: S.E.	THIS DRAWING, THE PERTINENT ENCLOSURES, DESCRIPTIONS, CALCULATIONS ETC. AND THEIR CONTENTS ARE THE PROPERTY OF <b>DYWIDAG SYSTEMS INTERNATIONAL, USA, INC.</b> THEY ARE NOT ALLOWED TO BE DUPLICATED WITHOUT OUR PERMISSION. THEY ARE ALSO NOT TO BE SHOWN OR EXPLAINED FOR ANY REASON TO A THIRD PARTY OTHER THAN FOR REASONS EXPRESSLY INTENDED BY <b>DSI's</b> SUBMITTAL TO THE ORIGINAL RECEIVER. THEY HAVE TO BE RETURNED UPON REQUEST.					
				<b>DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.</b> 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100 FAX: 630-739-1405					

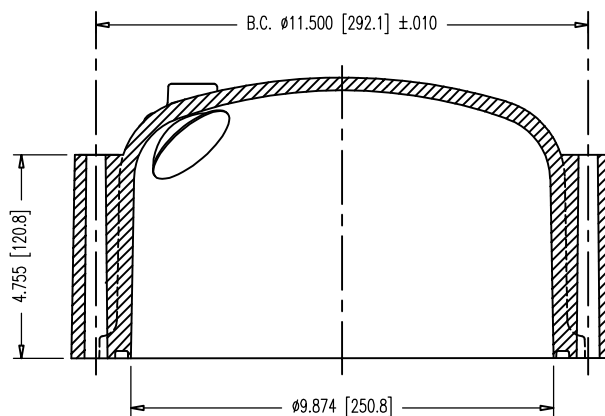


O-RING MATERIAL:  
 EPDM, MEETING FDOT  
 SPECIFICATIONS 960-2.2.1.7.  
 #449 O-RING  
 10' x 10-1/2' x 1/4'  
 SCALE NTS

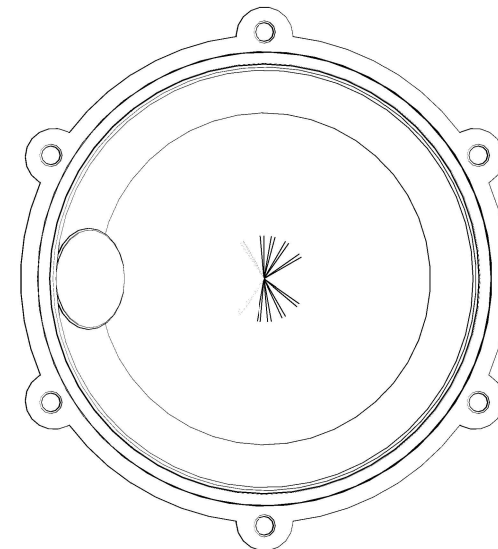
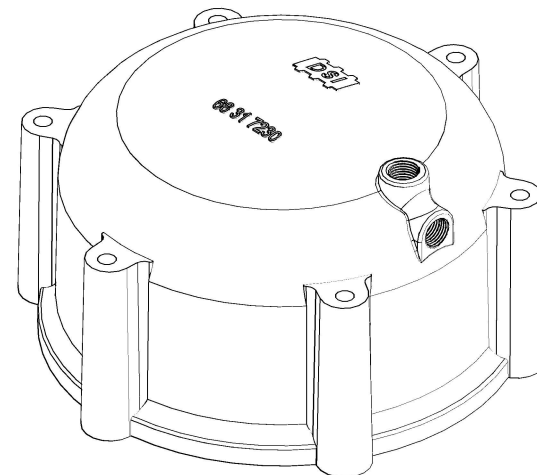
- NOTES:
- USE 3/8"-16UNC 316L S.S. HEX BOLTS, 5-1/2" LONG W/SMALL DIA. WASHER.
  - INSTALL O-RING IN GROOVE USING DROPS OF LIQUID ADHESIVE BEFORE SHIPPING. DON'T USE EXCESSIVE ADHESIVE. O-RING MUST STAY IN PLACE UNTIL INSTALLATION.
  - THE NYLON CONFORMS TO ASTM D5989, WITH CELL CLASSIFICATION S-PA0401 (ULTIMATE STRENGTH 10,000 PSI MIN., WITH UV STABILIZER ADDED).
  - DRILL 1/2" [12.7] HOLE IN PORT BEING USED -CAUTION-RECOMMEND USING HOLE SAW BIT OR SPADE BIT (BY OTHERS), BE CAREFULL TO PREVENT DAMAGE TO THREADS OR CAP.
  - WHEN PRESSURIZING GROUT CAPS, DO NOT STAND BEHIND CAPS!



SECTION A-A

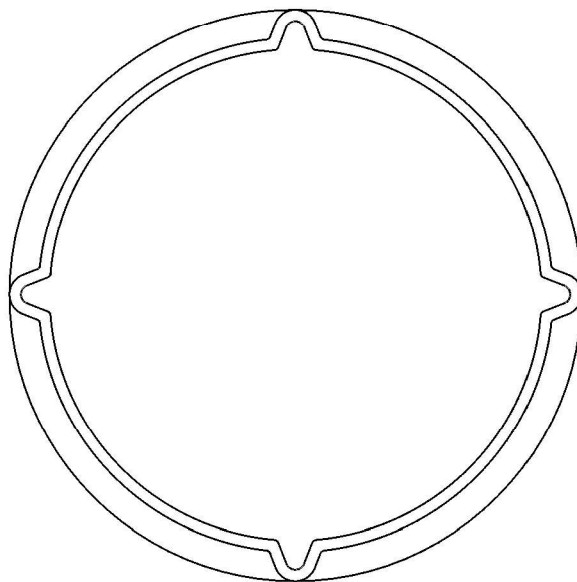
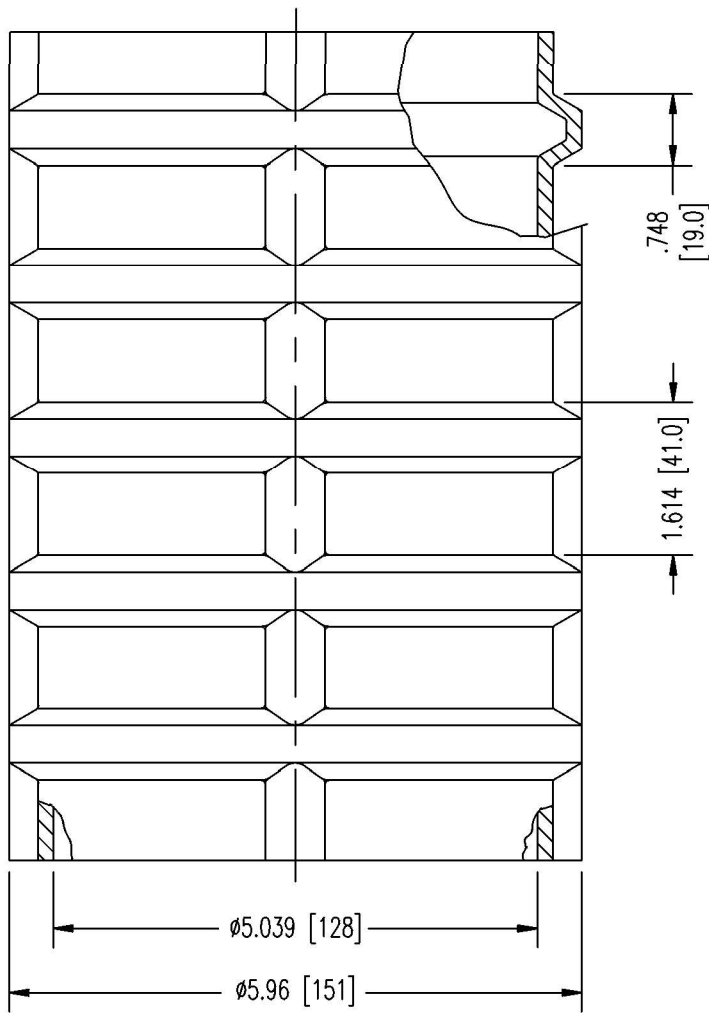


SECTION B-B



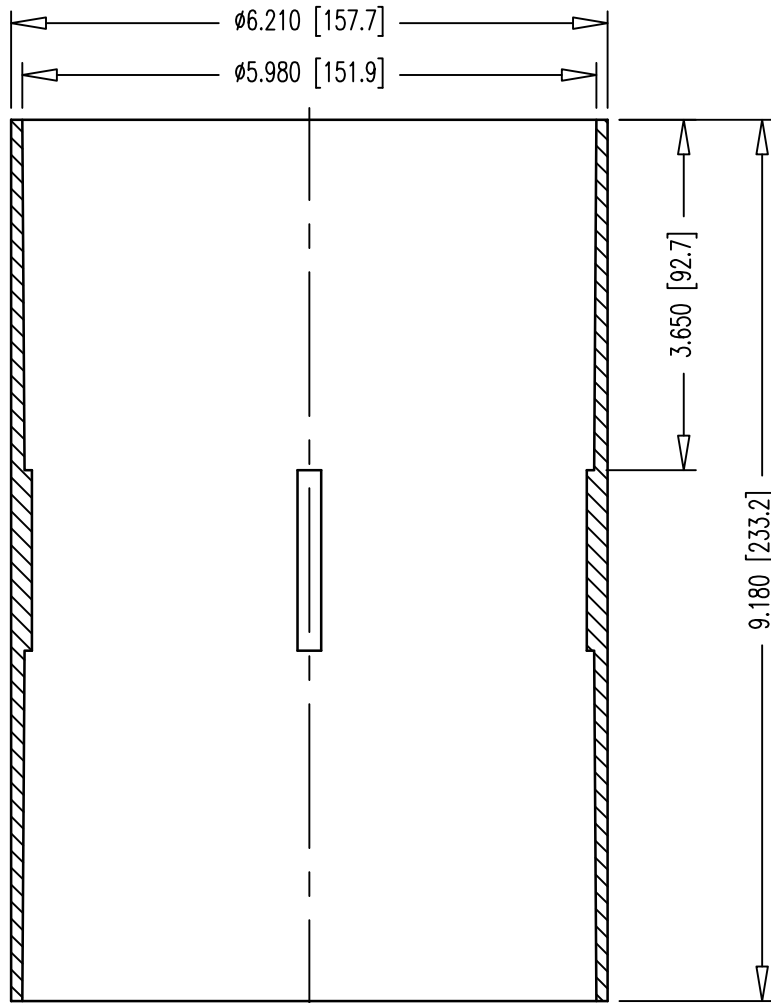
DIMENSIONS: INCH (mm) mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS60072300P		TOLERANCES: ±.020 UNLESS NOTED	WEIGHT ~4.1 LBS.	REV. $\Delta$	DATE 10/04/18	NAME S.I.	ECRN	PART NUMBER: 68 31 7230
<b>31-0.6" PLASTIC GROUT CAP</b>				MATERIAL: NYLON 6, 20% GLASS FIBER FILLED	SCALE 1:3					DRAWING NUMBER: 68 31 7230
DATE: 10-08-18	DWG: G. MALECKI	CHK: S.Y.	APP: E.Z.	THIS DRAWING, THE PERTINENT ENCLOSURES, DESCRIPTIONS, CALCULATIONS ETC. AND THEIR CONTENTS ARE THE PROPERTY OF DWYDAG SYSTEMS INTERNATIONAL, USA, INC. THEY ARE NOT ALLOWED TO BE DUPLICATED WITHOUT OUR PERMISSION. THEY ARE ALSO NOT TO BE SHOWN OR EXPLAINED FOR ANY REASON TO A THIRD PARTY OTHER THAN FOR REASONS EXPRESSLY INTENDED BY DSI'S SUBMITTAL TO THE ORIGINAL RECEIVER. THEY HAVE TO BE RETURNED UPON REQUEST.						
<b>DWYDAG-SYSTEMS INTERNATIONAL, USA, INC.</b> POST TENSIONING / REINFORCING UNIT PHONE: 630-739-1100 320 MARMON DRIVE - BOLINGBROOK, IL FAX: 630-739-1405										





▲ MATERIAL: POLYPROPYLENE  
 CELL CLASS RANGE: PP0340B44541  
 TO PP0340B67884  
 MATERIAL MEETS FDOT SPECS. 960-2.4.3.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QU00041110P		TOLERANCES: ±.010 UNLESS NOTED	WEIGHT 1 LBS./FT.	REV. ▲	DATE 01-11-19	NAME S.I.	PART NUMBER: <b>U00220500</b>
<b>5-1/8" (130mm) CORRUGATED PP DUCT          WITH FLOW CHANNELS</b>				MATERIAL: SEE ABOVE	SCALE 1:2				DRAWING NUMBER: <b>U00220500</b>
DATE: 06-26-01	DWG: G. MALECKI	CHK: H.K.	APP: K.S.	THIS DRAWING, THE PERTINENT ENCLOSURES, DESCRIPTIONS, CALCULATIONS ETC. AND THEIR CONTENTS ARE THE PROPERTY OF DYWIDAG SYSTEMS INTERNATIONAL, USA, INC. THEY ARE NOT ALLOWED TO BE DUPLICATED WITHOUT OUR PERMISSION. THEY ARE ALSO NOT TO BE SHOWN OR EXPLAINED FOR ANY REASON TO A THIRD PARTY OTHER THAN FOR REASONS EXPRESSLY INTENDED BY DSI'S SUBMITTAL TO THE ORIGINAL RECEIVER. THEY HAVE TO BE RETURNED UPON REQUEST.					
DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100 FAX: 630-739-1405									



▲ MATERIAL: POLYPROPYLENE  
 CELL CLASS RANGE: PP0340B44541 TO  
 PP0340B67884  
 MATERIAL MEETS FDOT SPECS. 960-2.4.3.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QU00041110P		TOLERANCES: ±.010 UNLESS NOTED	WEIGHT .58 LBS.	REV. ▲	DATE 01-11-19	NAME S.I.	ECRN	PART NUMBER: <b>U00220505</b>	
<b>5-1/8" (130mm) SLIP-ON COUPLER</b>				MATERIAL: SEE ABOVE	SCALE 1:2					DRAWING NUMBER: <b>U00220505</b>	
				DATE: 10-28-04	DWG: G. MALECKI	CHK: H.K.	APP: K.S.				
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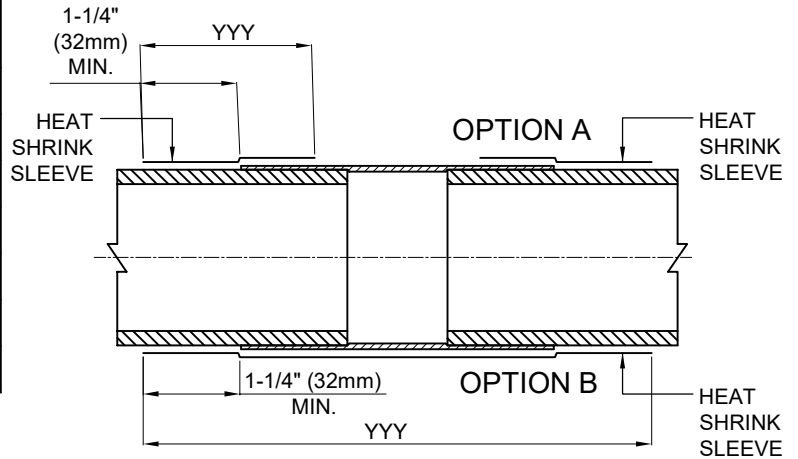


<b>DIMENSIONS &amp; ORDERING INFO</b>	P L A - XXX - YYY - ZZ	<b>STANDARD ORDERING OPTIONS</b>
	COLOR ▶	YE - YELLOW, BK - BLACK
	SLEEVE WIDTH ▶	300mm, 450mm, 600mm, 900mm (12", 18", 24", 36")
	SLEEVE SIZE ▶	63mm -315mm (2-1/2" - 12")
	ADHESIVE (thickness as supplied) ▶	A - 0.75 mm (30 mils)
	BACKING (thickness as supplied) ▶	L - 0.80 mm (31 mils)
	CONFIGURATION ▶	P - Tubular

PMA - HIGH SHRINK SLEEVE.  
 └── HIGH SHRINK TUBULAR BACKING.

TUBULAR SLEEVE	TUBULAR SLEEVE DIAMETER AS SUPPLIED	FULLY RECOVERED
PLA 63-YYY YE	3.5" [90mm]	2.5" [63mm]
PLA 90-YYY YE	4.8" [120mm]	3.3" [81mm]
PLA 115-YYY BK	5.5" [145mm]	3.8" [98mm]
PLA 125-YYY YE	6.3" [160mm]	4.3" [110mm]
PLA 160-YYY BK	7.5" [190mm]	5.2" [130mm]
PMA 90/30-YYY BK	3.5" [90mm]	1.2" [30mm]
PMA 120/40-YYY BK	4.7" [120mm]	1.6" [40mm]

YYY = SLEEVE WIDTH: 300/450/600/900/1500(mm)  
 COLOR: YE = YELLOW; BK = BLACK



**NOTE:**  
 FOLLOW MANUFACTURER'S  
 INSTALLATION INSTRUCTIONS.

**MATERIAL:**  
 POLYELEFIN FDOT SPECS 960-2.2.1.8 FOR  
 GROUTED APPLICATIONS

	DUCT SIZE	STRAND SYSTEM	BAR SYSTEM	HEAT SHRINK SLEEVE SIZE	PART NUMBER
CORRUGATED DUCT	1" x 3" (25mm x 76mm)	4-0.6"		PLA-63-450 YE	U00044063
	2-3/8" (59mm)	7-0.6"		PLA-63-450 YE	U00044063
			1", 1-1/4", 1-3/8"	PMA-90/30-450 BK	U00044030
	3" (76mm)		1 3/4"	PMA-120/40-450 BK	U00044040
	3-3/8" (85mm)	12-0.6"		PLA-90-450 YE	U00044090
	4" (100mm)		2-1/2"	PLA-90-450 YE	U00044090
	4" (100mm)	19-0.6"		PLA-115-450 BK	U00044115
	4-1/2" (115mm)	27-0.6"		PLA-125-450 YE	U00044125
5-1/8" (130mm)	31-0.6", 37-0.6"		PLA-160-450 BK	U00044160	
SMOOTH DUCT	3" SDR 17 HDPE PIPE		1-3/8"	PLA-63-450 YE	U00044063

DIMENSIONS: INCH [mm]  
 mm FOR REFERENCE ONLY

### HEAT SHRINK SLEEVE SIZES FOR INTERNAL GROUTED APPLICATIONS

DATE: 07-31-19    DWG: G. Malecki    CHK: S.I.    APP: S.I.

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REV.	DATE	NAME	ECRN
1	05-28-20	S.I.	
2	02-15-21	S.I.	

SCALE  
 NTS

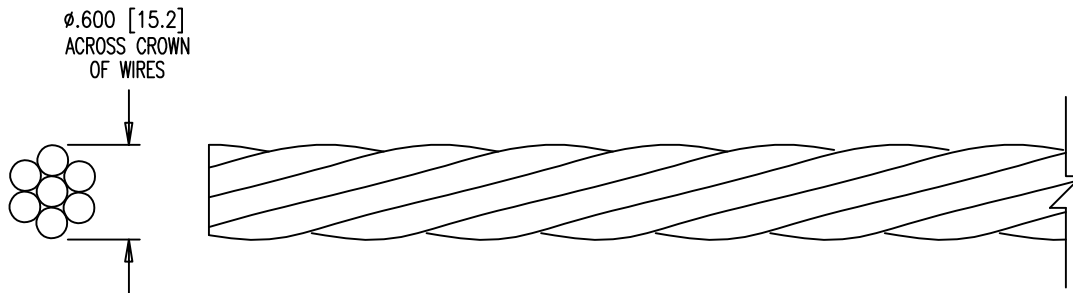
PART NUMBERS:

**SEE TABLE ABOVE**

DRAWING NUMBER:  
**U00044000**


**DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.**  
 320 MARMON DRIVE - BOLINGBROOK, IL 60440  
 PHONE: 630-739-1100    FAX: 630-739-1405

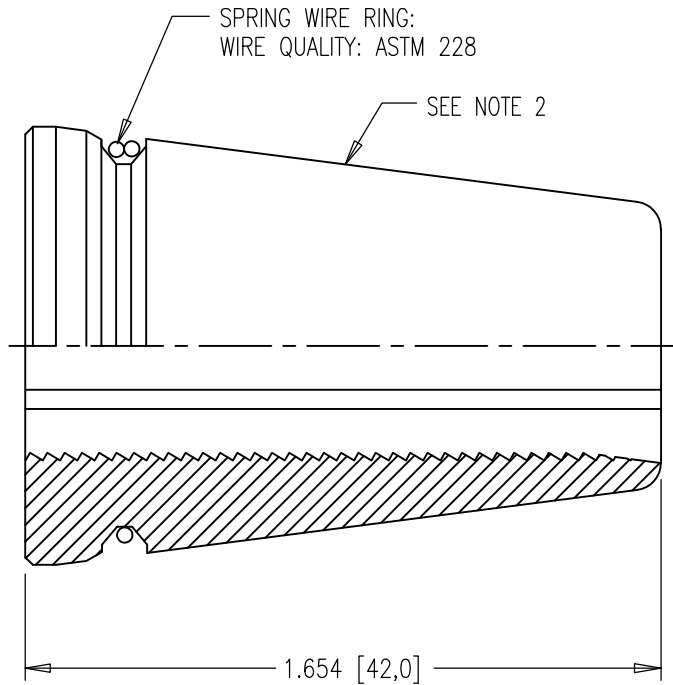
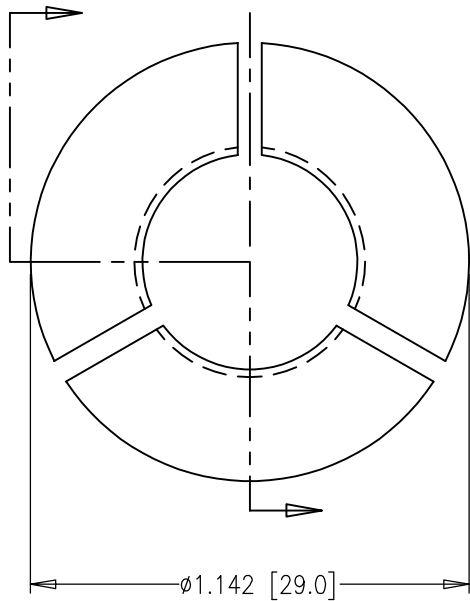




- NOTES:
1. NO PART NUMBER OR IDENTIFICATION MARKS ON STRAND.
  2. RUST PRODUCING VISIBLE PITTING TO THE UN-AIDED EYE IS NOT ALLOWED.

MATERIAL:  
0.6" 270 KSI LOW RELAX STRAND  
ASTM A416

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS000301000		TOLERANCES: ±.020 UNLESS NOTED	WEIGHT .738 PER/FT	REV.	DATE	NAME	PART NUMBER: <b>301060</b>	
<b>0.6" BARE 270 KSI STRAND</b>				MATERIAL: SEE ABOVE	SCALE 1:1				DRAWING NUMBER: <b>301060</b>	
				DATE: 02-18-19	DWG: G. MALECKI	CHK: C.S.	APP: K.S.			
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**NOTES:**

1. SHARP EDGES MUST BE BROKEN.
2. VIBRATE TO SURFACE FINISH OF 63 μIN. MAX.
3. DIP IN SQ70 OIL OR EQUIV. FOR CORROSION PROTECTION.
4. MAKE SURE THAT THE BUTTRESS THREAD IS ORIENTED IN THE DIRECTION SHOWN ON THIS DRAWING.
5. NO STAMPED PART NUMBER

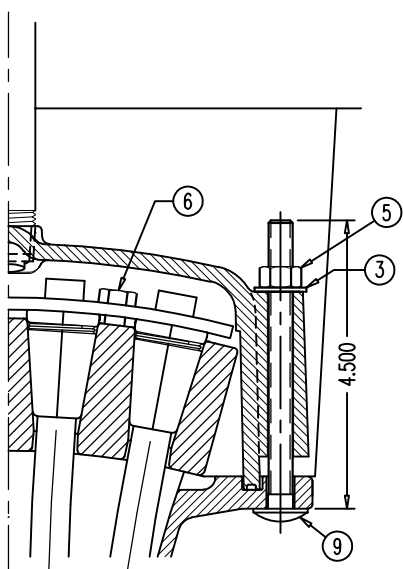
**MATERIAL:**  
12L14  
ALL HARDENED

DIMENSIONS: INCH/mm mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS00000500D		TOLERANCES: ±.010; ±2° UNLESS NOTED	WEIGHT 0.19 LBS.	REV.	DATE	NAME	PART NUMBER: 68 00 0536
<b>3-PART WEDGE FOR 0.6" STRAND</b>				MATERIAL: SEE ABOVE	SCALE 2:1				DRAWING NUMBER: 68 00 0536
				DATE: 06-01-18	DWG: G. MALECKI	CHK: C.S.	APP: S.I.		

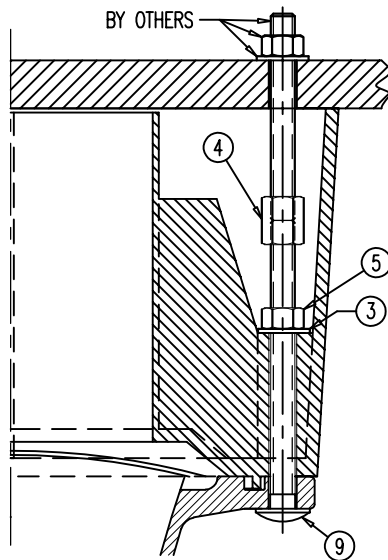
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**DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.**  
POST TENSIONING / REINFORCING UNIT PHONE: 630-739-1100  
320 MARMON DRIVE - BOLINGBROOK, IL FAX: 630-739-1405

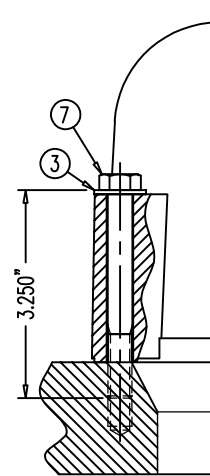




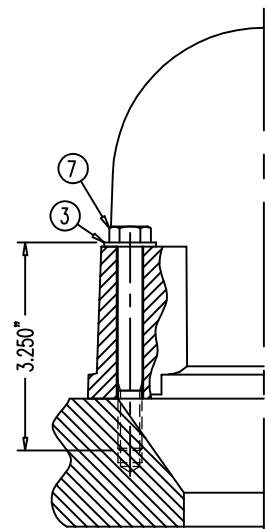
KEEPER PLATE 68 04 2637 ON  
WEDGE PLATE 68 04 2534A &  
NYLON CAP 68 04 2539 ON  
FLAT ANCHOR 68 04 2548



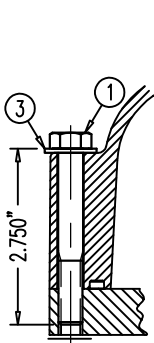
POCKET FORMER 68 04 2640  
ON FLAT ANCHOR 68 04 2548



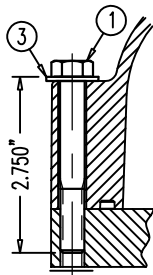
NYLON BAR CAP B36E50700 OR 50700A  
ON GALV. BEARING PLATE  
B26E22510, 22610, 22700, 22800,  
B32E22510, 22610, 22700, 22800,  
B36E22410, 22420, 22910, 22510,  
22610, 22700, 22800 & NYLON  
BAR CAP B66E50700 OR 50700A  
ON GALV. BEARING PLATE B66E22700



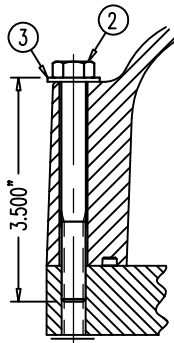
NYLON BAR CAP  
B46M50700  
OR 50700A  
ON GALV.  
BEARING PLATE  
B46E22700 &  
B46E22800



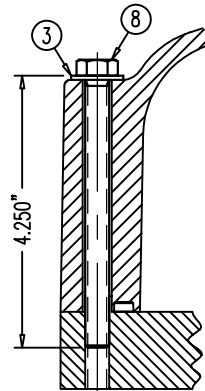
NYLON CAP  
68 07 7230 OR 7230A  
ON MPA 68 07 248



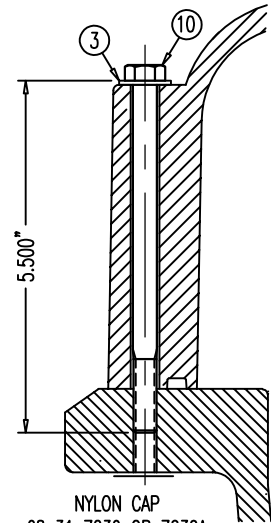
NYLON CAP  
68 12 7230 OR 7230A  
ON MPA 68 12 248



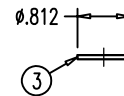
NYLON CAP  
68 19 7230 OR 7230A  
ON MPA 68 19 248



NYLON CAP  
68 27 7230 OR 7230A  
ON MPA 68 27 248



NYLON CAP  
68 31 7230 OR 7230A  
ON MPA 68 31 248



TYPE A NARROW WASHER  
FOR 3/8"-UNC BOLT

NOTE:  
THE 316L S.S. BOLTS ARE SPECIAL ORDER.  
ALL WASHERS, HEX NUTS & COUPLERS HAVE  
NO MARKINGS.

POS.	PART NUMBER	DISCRIPTION (ALL PARTS 316L STAINLESS STEEL UNLESS NOTED)
①	00 00 771	3/8"-16UNC HEX BOLT, 2-3/4" LONG (1" LONG THREAD)
②	00 00 772	3/8"-16UNC HEX BOLT, 3-1/2" LONG (1" LONG THREAD)
③	00 00 774	TYPE A NARROW WASHER FOR 3/8"-UNC BOLT
④	00 00 776	3/8"-16UNC COUPLER, ZINC COATED
⑤	00 00 777	3/8"-16UNC HEX NUT
⑥	00 00 778	5/16"-18UNC HEX BOLT, 7/8" LONG, ZINC PLATED
⑦	00 00 783	3/8"-16UNC HEX BOLT, 3-1/4" LONG (1" LONG THREAD)
⑧	00 00 784	3/8"-16UNC HEX BOLT, 4-1/4" LONG (FULL THREAD)
⑨	00 00 789	3/8"-16UNC CARRIAGE BOLT, 4-1/2" LONG
⑩	00 00 790	3/8"-16UNC CARRIAGE BOLT, 5-1/2" LONG

DIMENSIONS: INCH

QUALITY PLAN NUMBER:

## STAINLESS STEEL 316L BOLTS AND WASHER FOR NYLON CAPS

DATE: 09-10-04 DWG: G. MALECKI CHK: E.A. APP: K.S.

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SCALE  
1:3

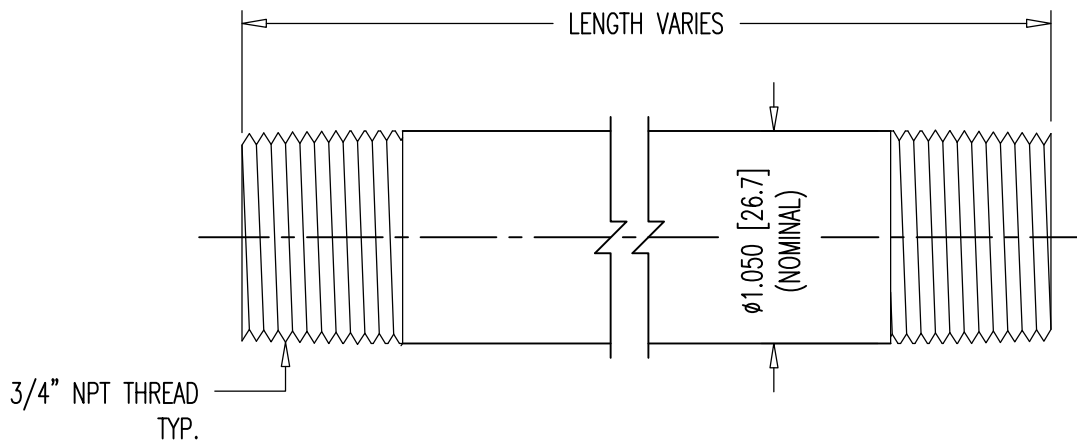
REV.	DATE	NAME	NAME
1	05/01/19	S.I.	
2	05/28/20	S.I.	

PART NUMBERS:  
SEE TABLE


DRAWING NUMBER:  
00 00 770

DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.  
POST TENSIONING / REINFORCING UNIT PHONE: 630-739-1100  
320 MARMON DRIVE - BOLINGBROOK, IL FAX: 630-739-1405

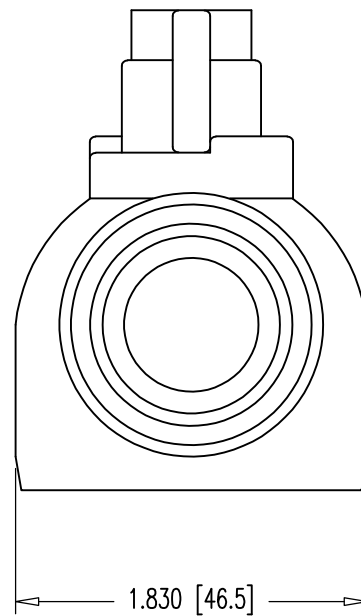
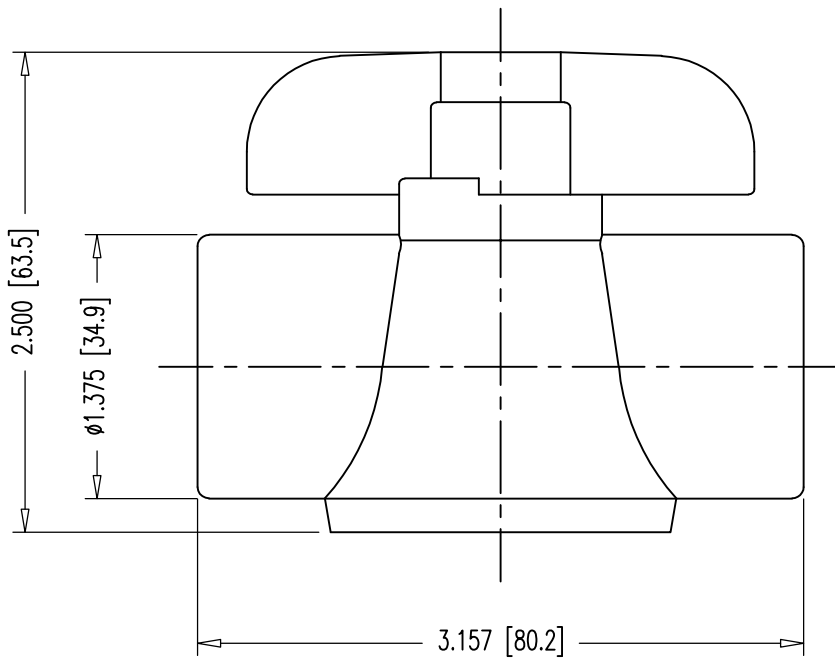
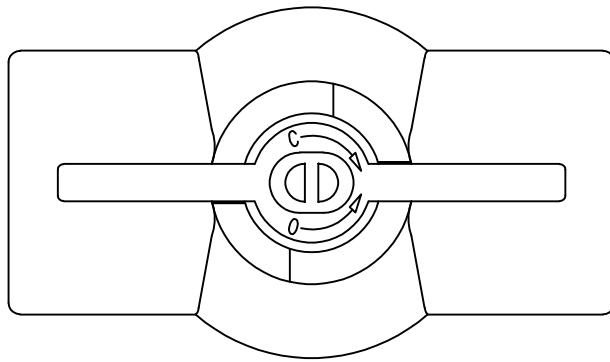




PRESSURE RATED: 150 PSI

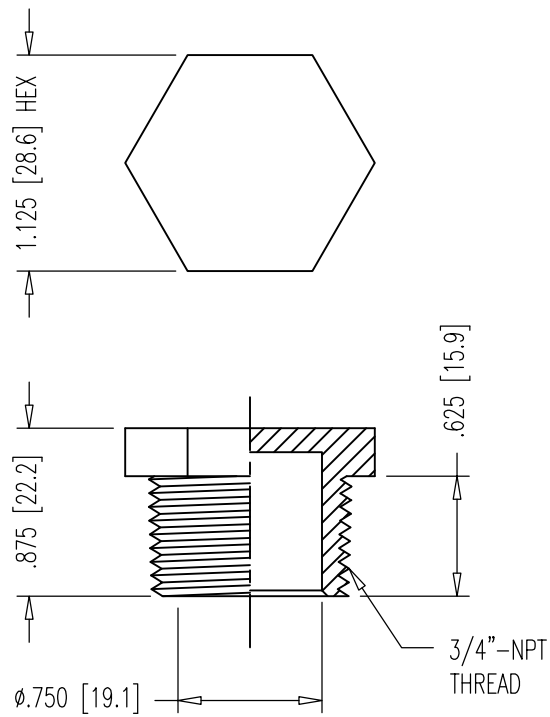
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: Q00000020P		REV.	DATE	NAME	ECRN	PART NUMBER: <b>00 00 878</b>	
<b>3/4" NPT PIPE NIPPLES</b>				MATERIAL: SCH 40 BLACK WELDED STEEL	SCALE 1:1				DRAWING NUMBER: <b>00 00 878</b>
				DATE: 01-29-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.		
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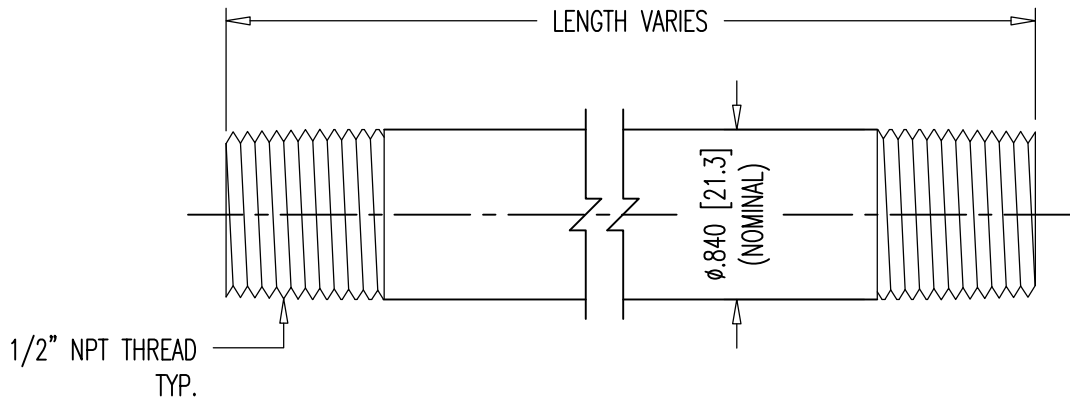
▲ NOTE:  
PRESSURE RATED: 150 PSI.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT 0.213 LBS.	REV.	DATE	NAME	PART NUMBER: <b>00 00 834</b>
<b>3/4" NPT BALL VALVE</b>					SCALE 1:1	▲	01-11-19	
				DATE: 04-30-07		DWG: G. MALECKI	CHK: S.N.	APP: E.A.
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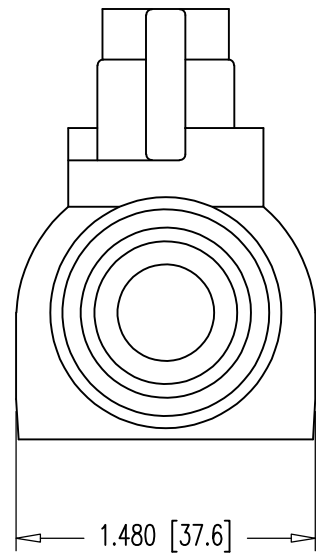
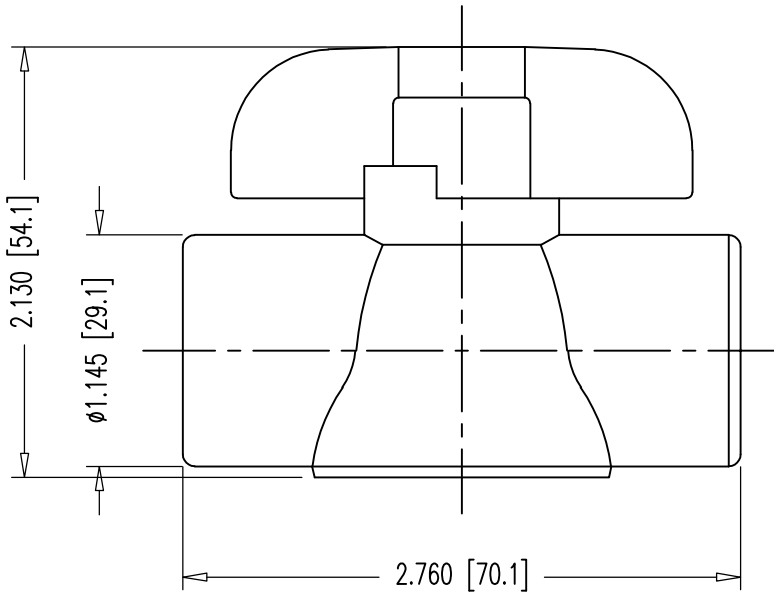
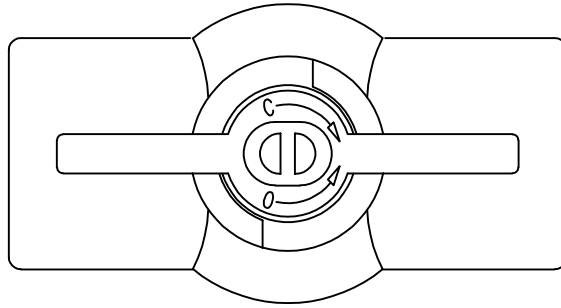
PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT .009 LBS.	REV.	DATE	NAME	PART NUMBER: <b>00 00 849</b>
<b>3/4" NPT NYLON PLUG</b>								
				DATE: 03-12-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I..	DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100      FAX: 630-739-1405
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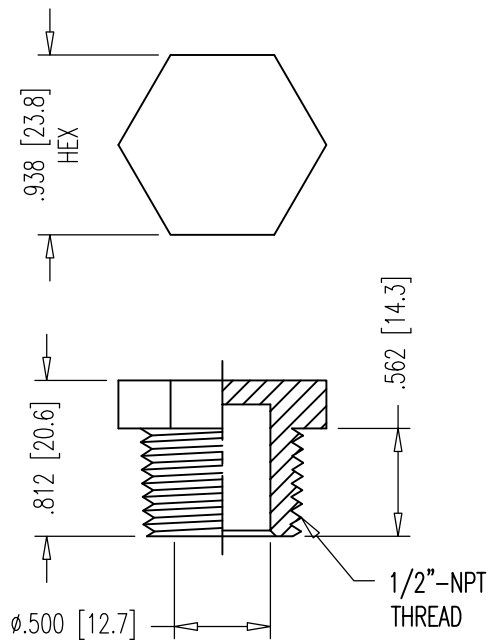
PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: Q000000020P		REV.	DATE	NAME	PART NUMBER: <b>00 00 678</b>
<b>1/2" NPT PIPE NIPPLES</b>				MATERIAL: SCH 40 BLACK WELDED STEEL	SCALE 1:1		DRAWING NUMBER: <b>00 00 678</b>
DATE: 01-29-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.				
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⚠ NOTE:  
PRESSURE RATED: 150 PSI.

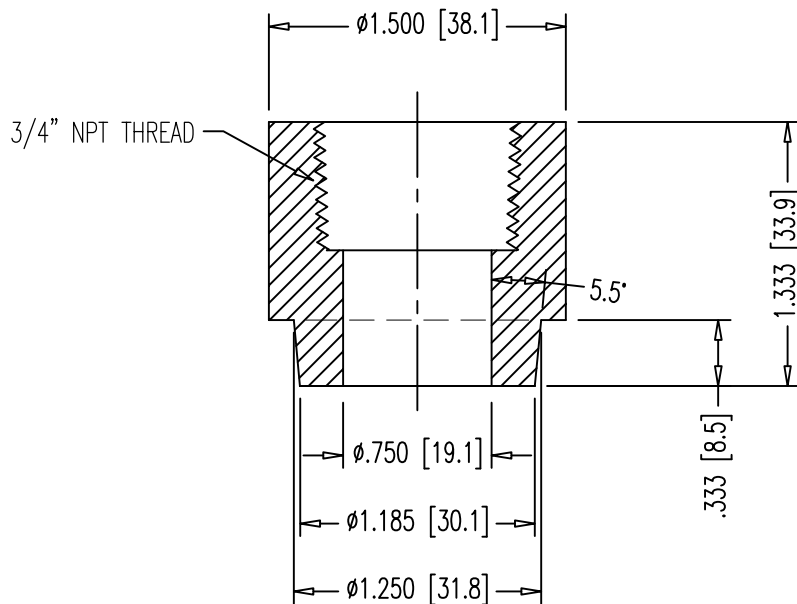
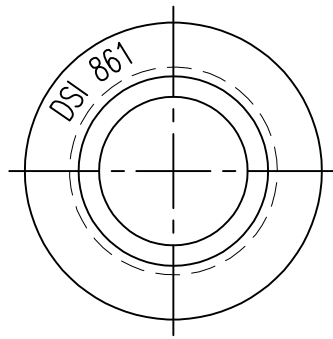
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT 0.138 LBS.	REV. ⚠	DATE 01-11-19	NAME S.I.	PART NUMBER: <b>00 00 634</b>
<b>1/2" NPT BALL VALVE</b>								
DATE: 04-30-07	DWG: G. MALECKI	CHK: S.N.	APP: E.A.	DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100      FAX: 630-739-1405				
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PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT .006 LBS.	REV.	DATE	NAME	ECRN	PART NUMBER: <b>00 00 649</b>
<b>1/2" NPT NYLON PLUG</b>									
				DATE: 03-12-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.	DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100      FAX: 630-739-1405	
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WELDING OPERATIONS:  
 DRILL A HOLE USING SPECIFIED CONE DRILL TOOL  
 WHEREVER NEEDED IN COMMON POLYPROPYLENE  
 DUCTS OF ALL BRANDS. HEAT UP POLYPROPYLENE  
 GROUT PORT AND THE HOLE IN DUCT FOR ABOUT  
 10 SECONDS USING PES-TEC WELDING EQUIPMENT.  
 RELEASE THE GROUT PORT AND PRESS INTO THE  
 HOLE IN DUCT BY HAND FOR 15 SECONDS.

MATERIAL: POLYPROPYLENE  
 USAGE: FOR CORRUGATED PP DUCTS  
 PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		TOLERANCES: ±.020 UNLESS NOTED	WEIGHT 0.045 LBS.	REV.	DATE	NAME	PART NUMBER: <b>00 00 861</b>	
<b>3/4" NPT PP PORT</b>				MATERIAL: SEE ABOVE	SCALE 1:1					
				DATE: 01-11-19   DWG: G. MALECKI   CHK: S.I.   APP: S.I.						DRAWING NUMBER: <b>00 00 861</b>
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