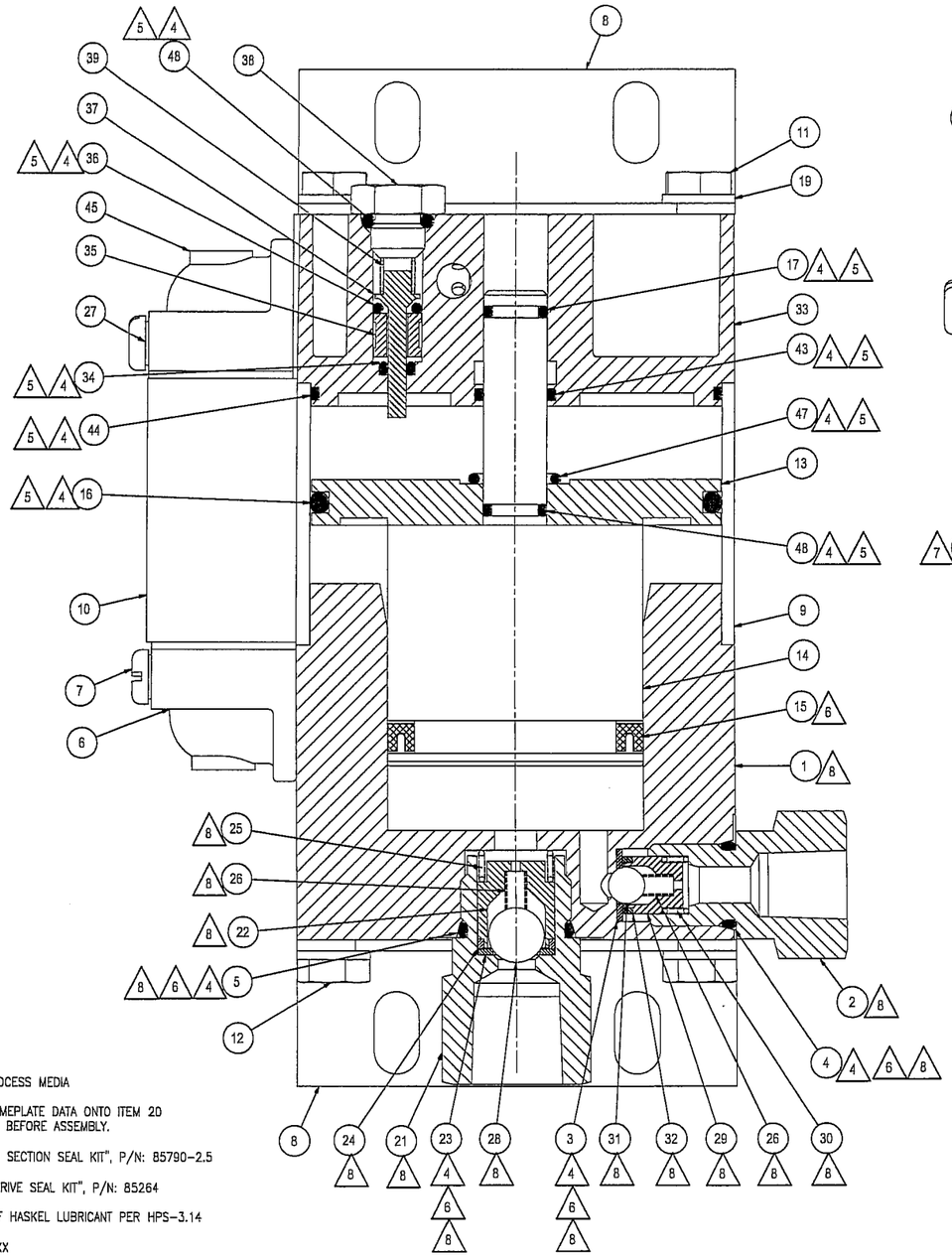
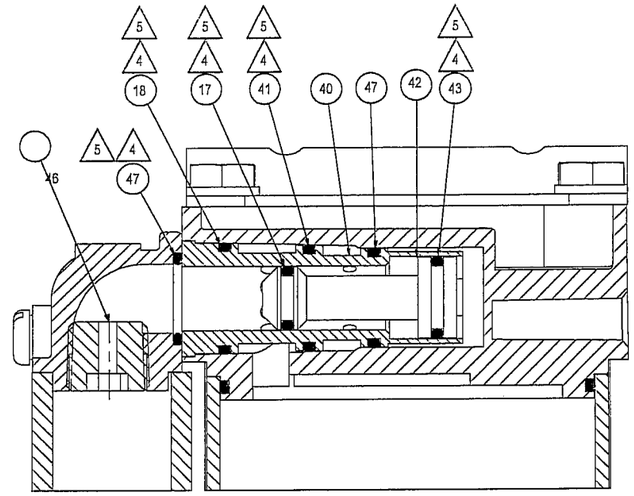
HAA31-2.5-N

CONTROL COPY
LOCATION E

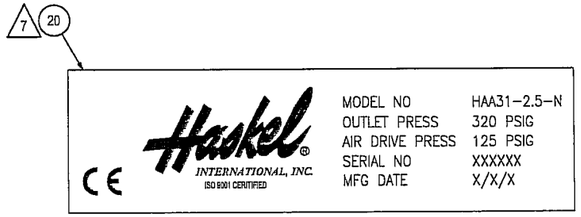
REVISIONS			
REV	DESCRIPTION	DATE	CHECKED
E	RELEASED PER ECO 25030	2-4-04	Speed



SECTION A-A



SECTION B-B



ITEM	MATERIAL	DESCRIPTION	PART NUMBER	QTY
48	BUNA-N	O-RING	568011-2	2
47	BUNA-N	O-RING	568014-2	2
46	PLATED STEEL / ASTM A 108	PIPE PLUG	85174	1
45	ALUM DIE CAST ALLOY / QQ-A-591	CAP, EXHAUST	17193-8	1
44	BUNA-N	O-RING	568038-2	1
43	BUNA-N	O-RING	568013-2	2
42	DELRIN	SPOOL	17157	1
41	BUNA-N	O-RING	58286-2	1

PARTS LIST

ITEM	MATERIAL	DESCRIPTION	PART NUMBER	QTY
40	ALUM 2024-T4 / QQ-A-225/6	SLEEVE	17158	1
39	316L SS	SPRING	17161	1
38	AL 2024-T4 OR AL 2024-T351	PLUG	50111	1
37	303 SS / ASTM A582	STEM	17156-3	1
36	BUNA-N	O-RING	568009-2	1
35	300 SERIES SS	SPACER	17159	1
34	BUNA-N	O-RING	54602	1
33	ALUM DIE CAST ALLOY / QQ-A-591	AIR CAP	17151	1
32	316 SS / ASTM A 479	RING	28083-1	1
31	316 SS / ASTM A 479	BALL	26130-8	1
30	316 SS/ASTM A 479	SPRING	28082	1
29	316 SS / ASTM A 479	CAGE	28083-2	1
28	316L SS	BALL	26130-12	1
27	416 SS	LOCK WASHER	CNF00279	4
26	316 SS/ASTM A 479	SPRING	26685	2
25	316L SS	SPRING	56788	1
24	316L SS	RING	56739	1
23	TEFLON	SEAT	56741	1
22	316 SS / ASTM A 479	CAGE	56786	1
21	304 SS / ASTM A 240	FITTING	85176	1
20	ALUM FOIL	NAMEPLATE	85200	1
19	304 SS / ASTM A 240	WASHER	CNF00165	6
18	BUNA-N	O-RING	568016-2	1
17	BUNA-N	O-RING	568011-21	2
16	BUNA-N	O-RING	27270	1
15	CARBOXYLATED NITRILE	U-CUP RING, HAA31-25	85779-2.5	1
14	DELRIN	PLUNGER	85778-2.5	1
13	ALUM 6061-T6 / QQ-A-225	PISTON	85177	1
12	303 SS / ASTM A 582	BOLT	17187-16-8	2
11	303 SS / ASTM A 582	BOLT	17187-5-8	4
10	POROUS POLYETHYLENE	EXHAUST TUBE	85156-1	1
9	ALUM 6061-T6 / QQ-A-225	BARREL	17071	1
8	304 SS / ASTM A 240	BRACKET	80184	2
7	304 SS / ASTM A 240	SCREW	17196	4
6	ALUM DIE CAST ALLOY / QQ-A-591	CAP, EXHAUST	17193-9	1
5	BUNA-N	O-RING	568908-9	1
4	BUNA-N	O-RING	568906-9	1
3	TEFLON	SEAT	28081-1	1
2	316 SS / ASTM A 479	FITTING	28104-3	1
1	ALUM 6061-T6 / QQ-A-225	BODY	85178-2.5	1

PARTS LIST

8 WETTED PARTS BY PROCESS MEDIA

7 TYPE APPROPRIATE NAMEPLATE DATA ONTO ITEM 20 AND AFFIX TO BARREL BEFORE ASSEMBLY.

6 CONTAINED IN "PUMP SECTION SEAL KIT", P/N: 85790-2.5

5 CONTAINED IN "AIR DRIVE SEAL KIT", P/N: 85264

4 APPLY A THIN FILM OF HASKEL LUBRICANT PER HPS-3.14

3) TEST PER TP-HAA31-XX

2) ASSEMBLE IN ACCORDANCE WITH INSTRUCTIONS LISTED ON SHEET 2.

1) DIMENSIONS AND PERFORMANCE DATA ARE LISTED ON SHEET 3.

NOTES:

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NEXT ASSY (REF ONLY): N/A

APPROVALS		DATE
DRAWN	V VU	3/11/02
CHECKED	AV	4/2/02
APPROVED	AV	4/2/02
CAD FILE NAME	HAA31-2.5-N	

Haskel International, Inc.
Industrial Technologies Division
Burbank, California 91502

TITLE: AIR AMP ASSY, 2.5 TO 1 RATIO

SIZE D | FSCM NO. 81400 | DWG NO. HAA31-2.5-N | REV E

SCALE 1/1 | NO MANUAL REVISIONS ALLOWED | SHEET 1 OF 3

REVISIONS			
REV	DESCRIPTION	DATE	CHECKED
E	SEE SHEET 1		

CONTROL COPY

LOCATION # 1

ASSEMBLY INSTRUCTIONS

1. AIR DRIVE SECTION

NOTE: APPLY A THIN FILM OF LUBRICANT ON O-RINGS AND O-RING DYNAMIC SURFACES. FOR SPECIFIC INSTRUCTIONS REFER TO HPS-3.14

1.1. AIR CAP ASSEMBLY

1.1.1. INSTALL PILOT STEM CONPONENTS INTO AIR CAP.
1.1.2. INSTALL O-RING ON PILOT PLUG (50111) AND THREAD PLUG INTO AIR CAP. TORQUE PER TABLE VALUE.
1.1.3. INSTALL ORINGS ON SLEEVE AND SPOOL INSTALL SPOOL INTO SLEEVE AND INSERT SLEEVE INTO AIR CAP.
1.1.4. INSTALL O-RING (568036-2) ON AIR CAP. INSTALL O-RING IN PISTON BORE (568013-21).
1.1.5. INSTALL PLUG INTO UPPER EXHAUST CAP, ATTACH TO AIR CAP. SET ASIDE FOR FINAL ASSEMBLY.

2. PROCESS GAS (PROCESS AIR) SECTION

2.1. INLET GAS (PROCESS AIR) SECTION

2.1.1. INSTALL O-RING ON INLET FITTING. INSERT SEAT INTO INLET FITTING BORE.
2.1.2. INSTALL INLET CHECK COMPONENTS INTO (85178-XX) BODY IN AN UPWARD POSITION (PLUNGER SECTION UP). THREAD FITTING IN HAND TIGHT.
2.1.3. VERIFY CHECK ASSEMBLY FUNCTIONS FREELY, BY (LIGHTLY) UNSEATING BALL WITH THIN ROD. IF ANY BINDING EXISTS, REMOVE INLET FITTING AND REPEAT 2.1.2.
2.1.4. TORQUE INLET FITTING PER TABLE VALUE.

2.2. OUTLET GAS (PROCESS AIR) SECTION

2.2.1. INSTALL O-RING ON OUTLET FITTING.
2.2.2. ORIENT PUMP BODY IN A POSITION WITH OUTLET PORT CAVITY FACING UPWARD. INSERT CHECK SEAT (28081-1) INTO OUTLET PORT CAVITY.
2.2.3. USING A THIN ROD, GUIDE REMAINING COMPONENTS INTO CAVITY. THREAD FITTING IN HAND TIGHT.
2.2.4. VERIFY CHECK ASSEMBLY FUNCTIONS FREELY, BY (LIGHTLY) UNSEATING BALL WITH THIN ROD. IF ANY BINDING EXISTS, REMOVE OUTLET FITTING AND REPEAT 2.2.3.
2.2.5. TORQUE OUTLET FITTING PER TABLE VALUE.
2.2.6. ATTACH MOUNTING BRACKET. TORQUE BOLTS PER TABLE VALUE.
2.2.7. ATTACH LOWER EXHAUST CAP. SET BODY ASIDE FOR FINAL ASSEMBLY.

2.3. PLUNGER/DRIVE SECTION

2.3.1. INSTALL O-RINGS ON PLUNGER
2.3.2. INSTALL O-RING ON PISTON
2.3.3. INSTALL PISTON ON PLUNGER. INSTALL BUMPER O-RING ON PISTON.
2.3.4. INSERT PLUNGER AND PISTON INTO AIR CAP.

3. FINAL ASSEMBLY

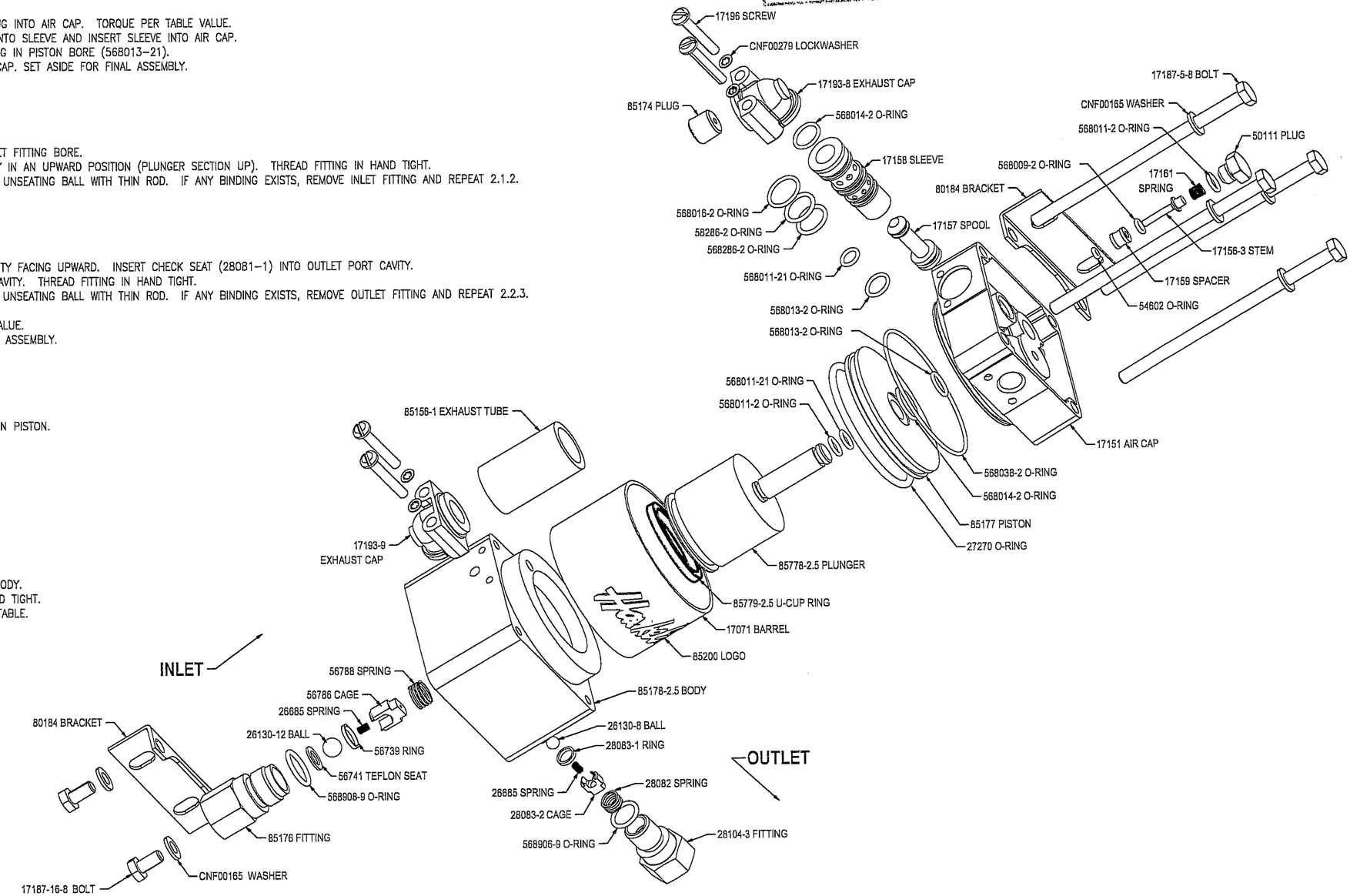
3.1. ASSEMBLY

3.1.1. SLIDE BARREL, OVER AIR CAP O-RING LAND.
3.1.2. INSTALL EXHAUST TUBE ONTO LOWER EXHAUST CAP PILOT.
3.1.3. SLIDE AIR CAP ASSEMBLY AND PUMP BODY TOGETHER.
ALIGN EXHAUST TUBE TO SLIDE INTO UPPER EXHAUST CAP.
3.1.4. ADJUST ALIGNMENT OF BOLT PATTERN TO THAT OF PUMP BODY.
3.1.5. INSTALL UPPER MOUNTING BRACKET, USING (4) BOLTS HAND TIGHT.
3.1.6. TORQUE (4) BOLTS IN A DIAGONAL PATTERN PER TORQUE TABLE.

3.2. TESTING

3.2.1. TEST PER TP-HAA31-XX.
3.2.2. CLEAN PORTS OF ANY EXCESS TEFLON TAPE.
3.2.3. PREPARE FOR SHIPPING. VERIFY NAMEPLATE PART AND DATA, PLUG PORTS (PLASTIC PLUGS).

TORQUE VALUES	
P/N & DESCRIPTION	IN-LBS
85176 INLET FITTING	360
28104-3 OUTLET FITTING	360
17187-5-8 BOLT	60
17187-16-8 BOLT	60
17196 SCREW	20 REF
50111 PLUG	144



Haskel International, Inc. Industrial Technologies Division Burbank, California 91502		SIZE D	FSCM NO. 81400	DWG NO. HAA31-2.5-N	REV E
DRAWN V VU		SCALE 1/1	NO MANUAL REVISIONS ALLOWED	SHEET 2 OF 3	
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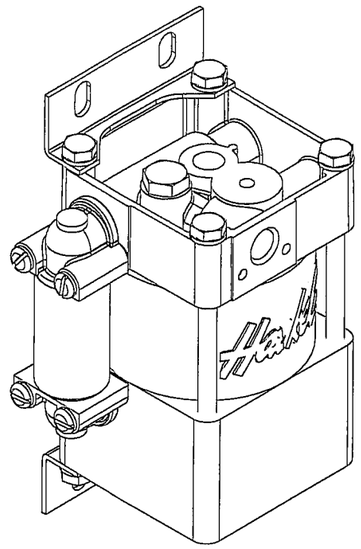
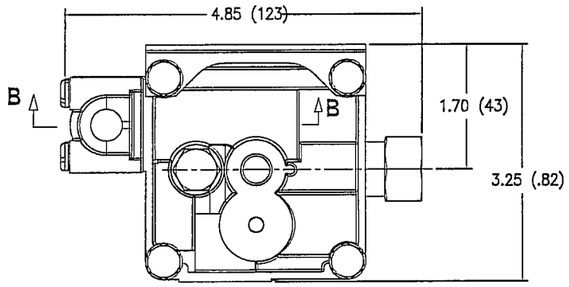
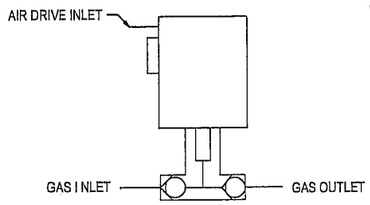
REVISIONS			
REV	DESCRIPTION	DATE	CHECKED
E	SEE SHEET 1		

CONTROL COPY

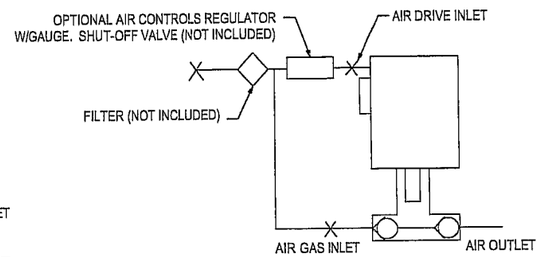
LOCATION # 1



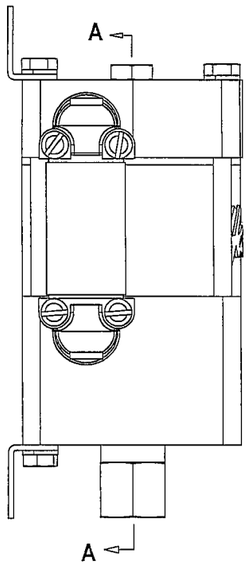


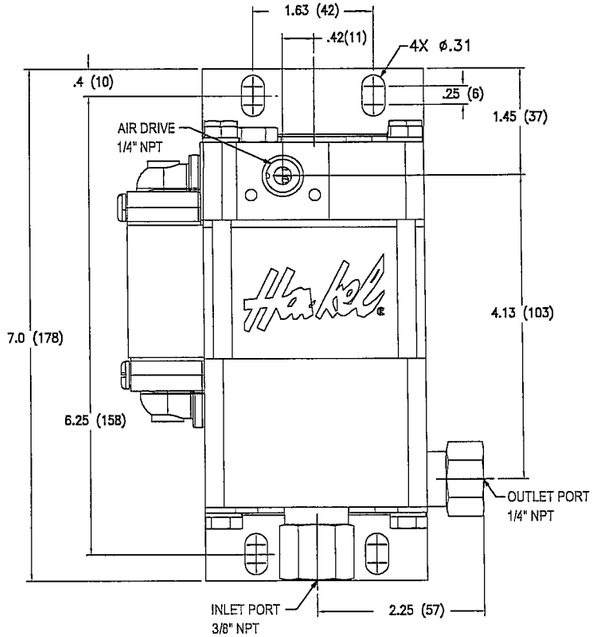


SEPARATE PROCESS GAS CIRCUIT
SCHEMATIC SYMBOLS



AIR AMPLIFIER CIRCUIT





PHYSICAL DATA

MEDIA: AIR PER ISO 8573.1 CLASS 4 OR BETTER AND NON CORROSIVE GASES.

INLET PRESSURE MAX. 125 PSIG (862 kPa) 175 PSIG WITH SEPARATE REGULATED AIR DRIVE.

OUTLET PRESSURE MAX: 320 PSIG (2206 kPa)

PROOF PRESSURE: 480 PSIG (3309 kPa)

AIR DRIVE PRESSURE MAX: 125 PSIG (862 kPa)

AIR DRIVE PRESSURE MIN: 25 PSIG (172 kPa)

CAPACITY PER STROKE: 2.40 CU. IN (39.3 MILLITERS)

OUTPUT RATIO: 2.5: 1

OPERATING TEMPERATURE: – 40°F TO +225°F (–40°C TO +107°C)

NOISE DATA: < 80db @ FULL OPERATING PRESSURE

WEIGHT: 3.7 LBS (1.66 KG)

2) DIMENSIONS ARE IN INCHES (MILLIMETERS)

1) DIMENSIONS ARE FOR REFERENCE

NOTES:

Haskel International, Inc. Industrial Technologies Division Burbank, California 91502		SIZE D	FSCM NO. 81400	DWG NO. HAA31-2.5-N REV E
DRAWN V VU		SCALE 1/1	NO MANUAL REVISIONS ALLOWED	SHEET 3 OF 3
CHECKED AV				