i:\Galiso\products Galiso equipment pare sparts.pdf

GALISO EQUIPMENT SPARE PARTS

GALISO® INCORPORATED

GASES LIQUIDS SOLIDS

GALISO® INCORPORATED
22 PONDEROSA CT., MONTROSE, CO 81401
(970) 249-0233 (800) 854-3789

This document contains illustrations and tables identifying primary component spare parts for Galiso RECORTEST III systems and related auxiliary equipment. The information contained in this document is organized as follows:

1.0 RECORTEST III CONSOLE Spare Parts

2.0 RSP-10D Spare Parts

3.0 HYDRACLOSE® Test Head Spare Parts

4.0 HYDRACLOSE® Test Jacket Spare Parts

5.0 PCT-122 Spare Parts

6.0 GVM-16G Valver Spare Parts

If you have any questions or require any additional information regarding spare parts contact your Galiso Customer Service representative at 1-800-854-3789.

1.0 RECORTEST III CONSOLE SPARE PARTS:

Figures 1-1 and 1-2 identify the spare/replacement parts for the RECORTEST III Console. A list of the spares shown in figures 1-1 and 1-2 is also provided below.

SPARE PARTS LIST: TEST CONSOLE RECORTEST III		
ITEM NUMBER	DESCRIPTION	QUANTITY
01-41-7084A	TRANSDUCER ASSY REC III	1
01-41-1330A	LOAD CELL ASSY REC III	1
01-43-1401B	BOARD ASSY RELAY OPTO REC III	1
37-11-8015	WEIGHT LAB 50G OHAUS	2
81-11-0166	VALVE AIR OPERATED 2 WAY NUPRO	2
81-11-0167	VALVE AO 2 WAY WHITEY	1
81-11-0224	VALVE E/P CONTROL 12 VOLT ARO	2
87-11-0048	KEYPAD MEMBRANE RECORTEST III	1
81-11-0131	STEM VALVE SNO TRIK	2
81-11-0132	SEAL STEM SNOTRIK	4
81-11-0133	SEAT REPLACEABLE SNOTRIK	2
81-11-0197	STEM ACTUATOR SNOTRIK	1
81-11-0201	RING PACKING	2
81-11-0208	SPACER	1

1.0 RECORTEST III CONSOLE SPARE PARTS: continued

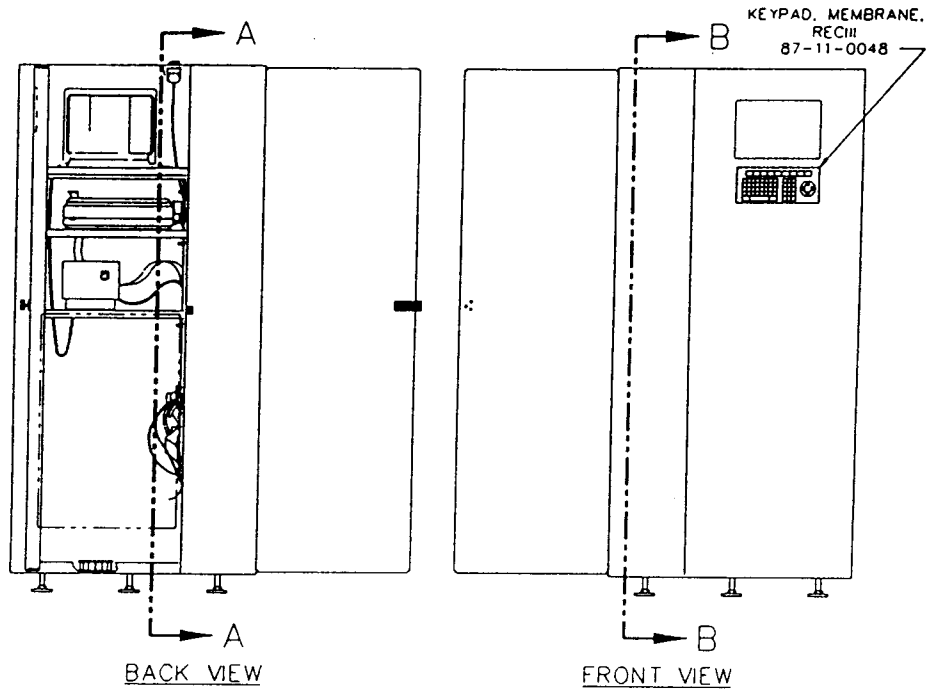


Figure 1- 1

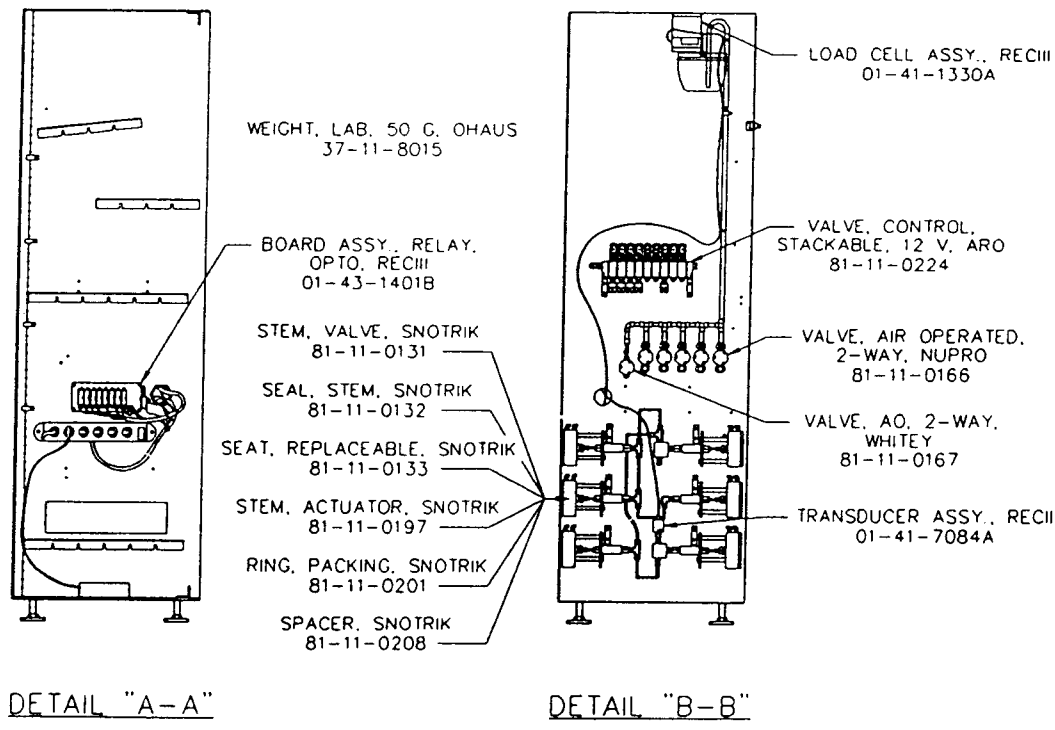


Figure 1- 2

2.0 RSP-10D SPARE PARTS:

RSP-10D spare parts are tabulated below. Figures 2-1 and 2-2 depict the parts listed.

RSP-10D SPARE PARTS LIST		
ITEM NUMBER	**DESCRIPTION**	**QUANTITY**
40-11-3002	SEAL KIT	4
01-44-0536G	PUMP ASSY	1
36-11-0508	2" GAGE 160# G14397	1
36-11-0510	GAGE 300# G14399	1
36-11-0523	GAUGE 2" 160# 1/8" BKCN	1
37-11-3002	REGULATOR MINI WATTS	1
37-11-3048	REGULATOR LARGE 125# 1/2'	1
40-11-3014B	SEAL KIT PUMP GDP-5SI	1
54-11-0003	OIL NON DET. 10 WEIGHT	1 QUART
80-11-0040	FILTER	1
80-11-0042	FILTER 1/2"	1
80-11-0051	ELEMENT FILTER	1
80-11-0052	ELEMENT FILTER	1
80-11-0053	ELEMENT FILTER	1
80-11-0066	FILTER AIR LINE 1/2"	1
80-11-4009	FILTER ELEMENT WATER 5 MICRON	1
80-11-4024	LUBRICATOR 125 PSI 1/2 NPT	1
80-11-7001	MUFFLER 3/4" NPT	1
80-75-4008	HOUSING FILTER	1
81-11-0009	VALVE BALL 1/2 NPT	1
81-11-0023	VALVE CHECK OUT 11-5023S000	1
81-11-0024	VALVE CHECK IN 11-5024S000	1
81-11-0045	VALVE AIR PILOT 5 WAY	1
81-11-0077	VALVE CONTROL MINI 3W-5/32	2
81-11-0176	VALVE 2 WAY ½	1
01-31-1866A	VALVE HERION 1/2 3 WAY AIR PILOT	1
81-11-0216	VALVE PLUG 1/4 MPTX1/4 FPT	1
83-11-0030	VALVE CHECK 1/2" FPT	1
83-11-0047	SAFTEY VALVE 1/4" 125 PSI	1
83-11-2503	RELIEF VALVE 1/4"NPT 175PSI	1

2.0 RSP-10D SPARE PARTS:

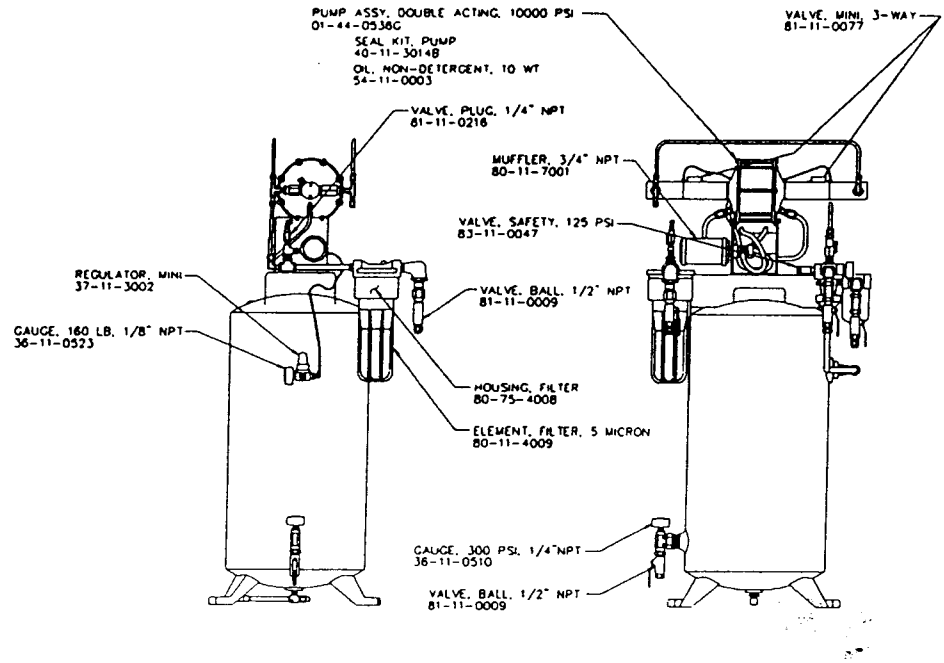


Figure 2 - 1

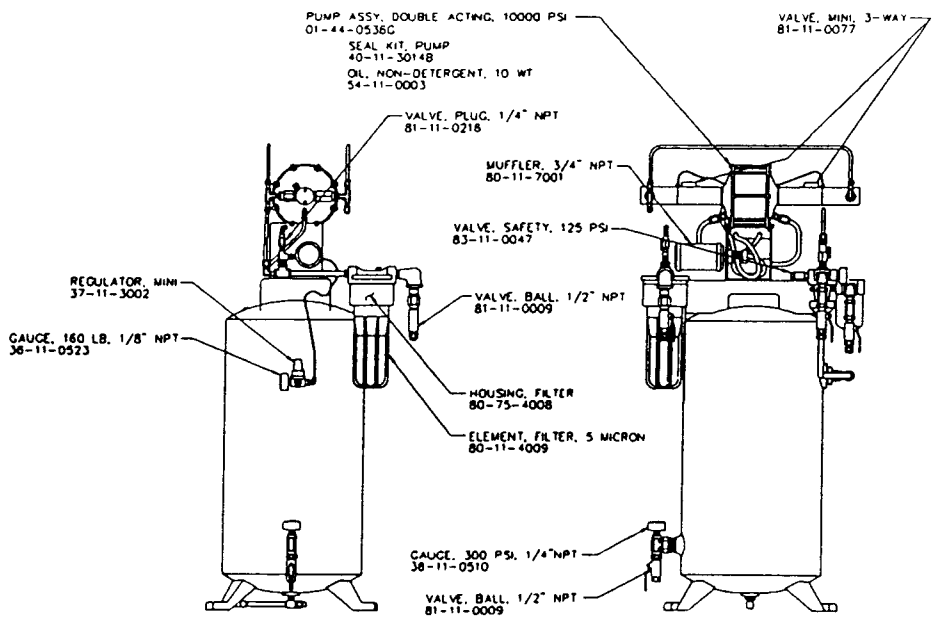


Figure 2 - 2

3.0 HYDRACLOSE® TEST HEAD SPARE PARTS:

HYDRACLOSE® Test Head spare parts are tabulated below. Figures 3-1 and 3-2 depict the parts listed.

3.1 12" OHH and GHH Style Heads

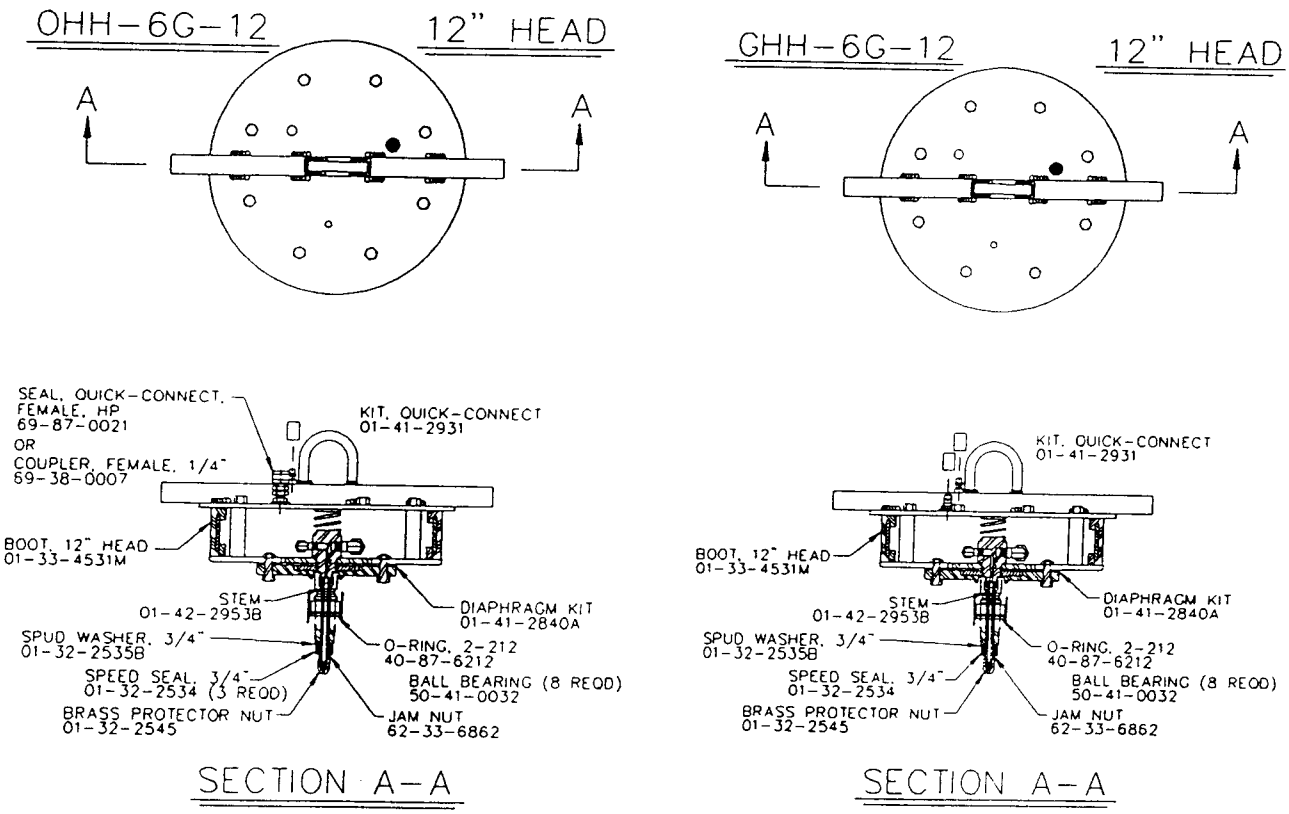


Figure 3 - 1

SPARE PARTS LIST: 12" HEADS GHH/OHH		
ITEM NUMBER	**DESCRIPTION**	**QUANTITY**
01-32-2534	SPEED SEALS	1
01-33-4531M	BOOT	1
01-42-2953B Pre 2002 - see below	STEM (G-Style)	1
01-41-2840A	DIAPHRAGM KIT	1
40-87-6212	ORING 2-212	1
50-41-0032	BALL BRGS	8
69-87-0021	SEAL (QC FEMALE) HP	1

01-41-4694 Stem - post 2002 - needs new adapter
01-32-2843 Test pressurisaton adapter
Bothparts together 01-41-4690 Presurisation adapter assy G and H style

3.2 18" GHH and OHH Style Heads

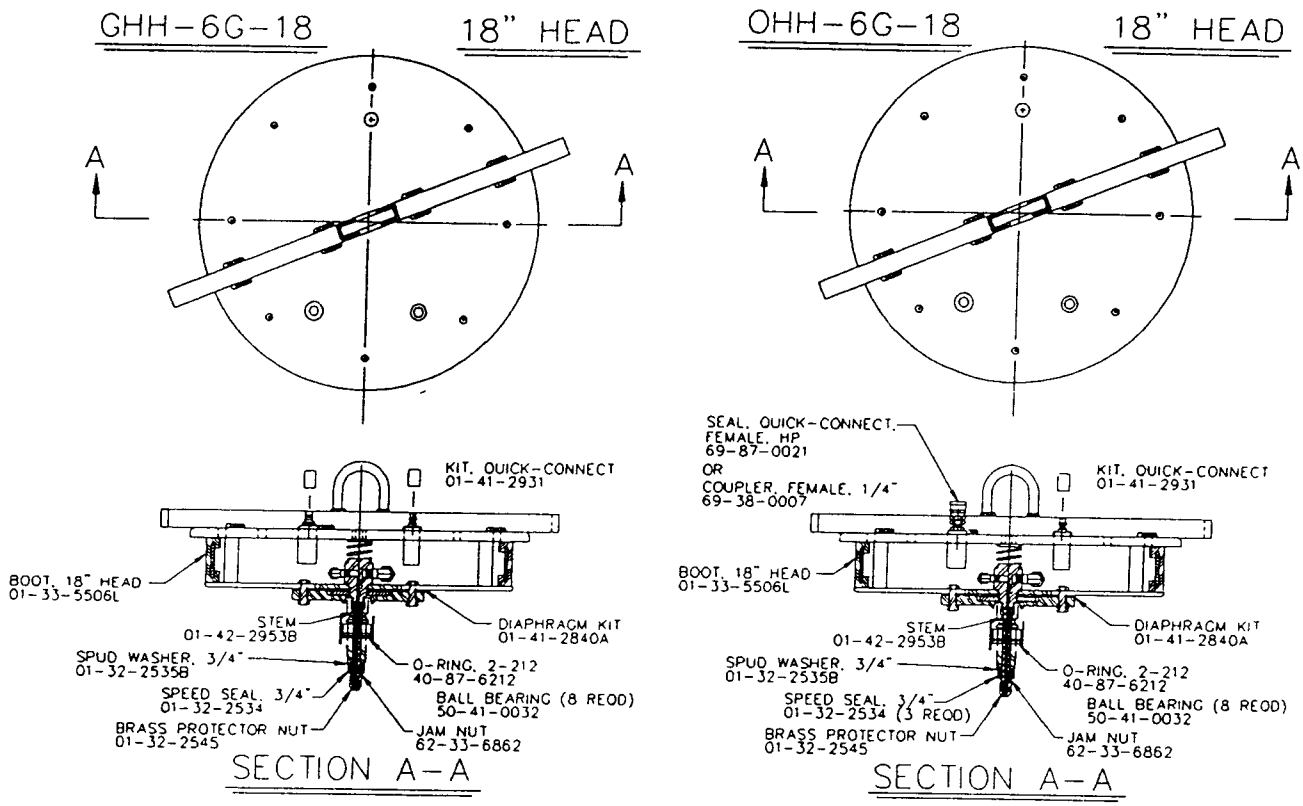


Figure 3 - 2

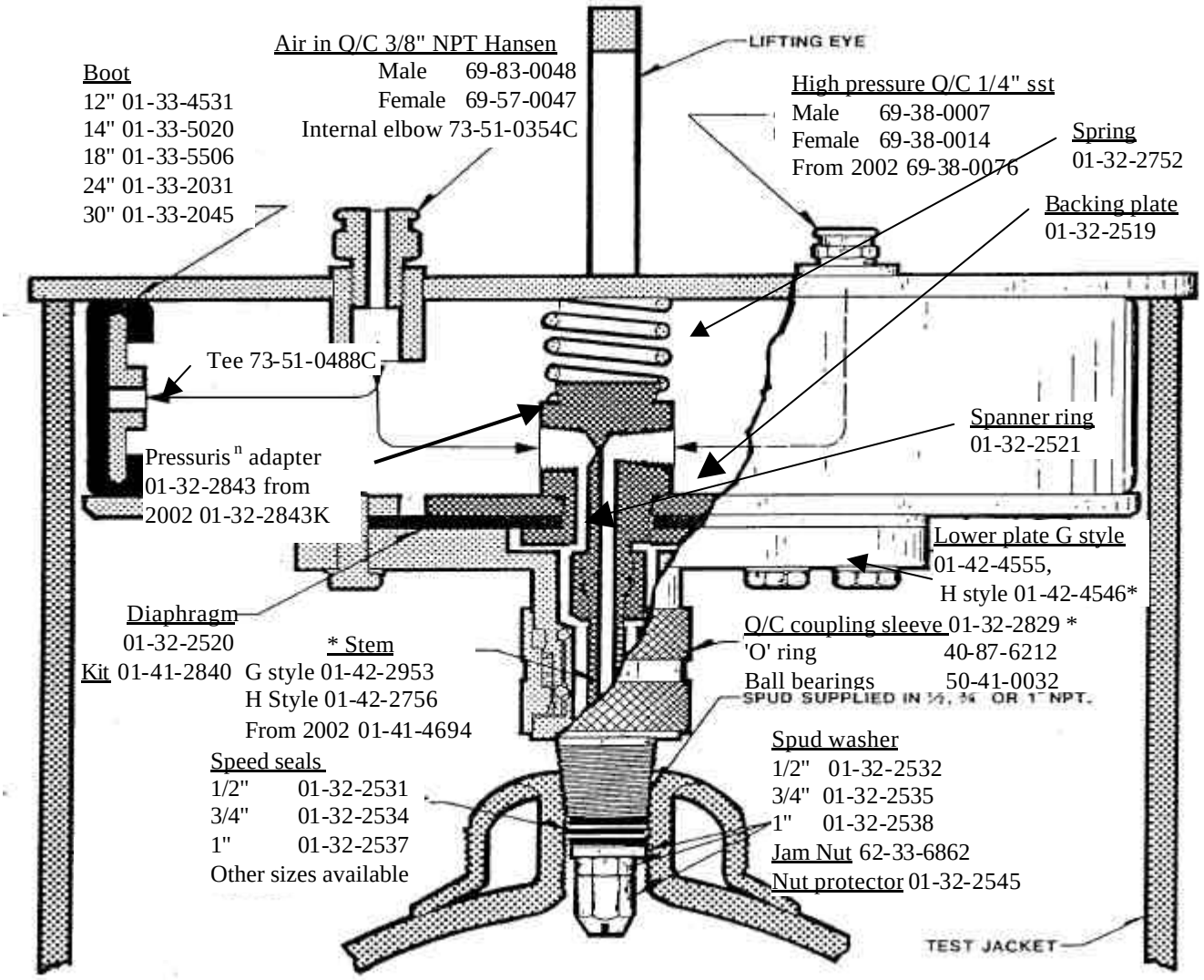
SPARE PARTS LIST: 18" HEADS OHH		
ITEM NUMBER	**DESCRIPTION**	**QUANTITY**
01-32-2534	SPEED SEALS	1
01-33-5506L	BOOT	1
69-38-0053	SNAP TITE	1
01-41-2931	KIT	1
69-38-0007	FEMALE	1

Ref: I:\GALISO\products\test head\Test Head spares.doc
Date: 26/05/2000

Parallel thread spud kit 01-41-3163
1" + 1/2" spud kit G style 01-41-4652

GALISO TEST HEAD SPARES

The diagram shows most test head spares, please contact us for clarification or to answer any queries. G style head shown, H style different where shown *



Low pressure internal tubes 34-73-8551

12" head	3 ft	
18" head	4 ft	Cut to length and fit
24" head	5 ft	ferrules as required

Two types of ferrule are fitted:-
Ferrule Hi-seal 73-51-0675 qty 4
Ferrule CPI/ swagelok 73-51-0675C qty 4

High pressure internal tube, stainless

12" head	01-71-2433
14" head	01-71-2433
18" head	01-71-2435
24" head	01-71-2436

Test Spud H style fixed *

1/2" NPT GTS-500	01-32-2530
3/4" NPT GTS-750	01-32-2533
1" NPT GTS-1000	01-32-2536

Test Spud G style quick release

1/2" NPT GTS-500-G	01-32-2846
3/4" NPT GTS-750-G	01-32-2824
1" NPT GTS-1000-G	01-32-2845

Other sizes on request

Note: view shown is representative only

EUROPEAN SALES & SERVICE COORDINATORS FOR GALISO PRODUCTS

BANCROFT HINCHEY LTD, UNIT 5 BOLNEY GRANGE BUSINESS PARK, STAIRBRIDGE LANE, BOLNEY, W. SUSSEX RH17 5PA
TEL: +44(0)1444 248884 OR 07000 226276 FAX: +44(0)1444 242767 E-MAIL: GALISO@BANCROFT.CO.UK

01-41-4690

REV.	AUTHORITY	DATE	BY
C	ECN #02-020	7/23/02	RRC

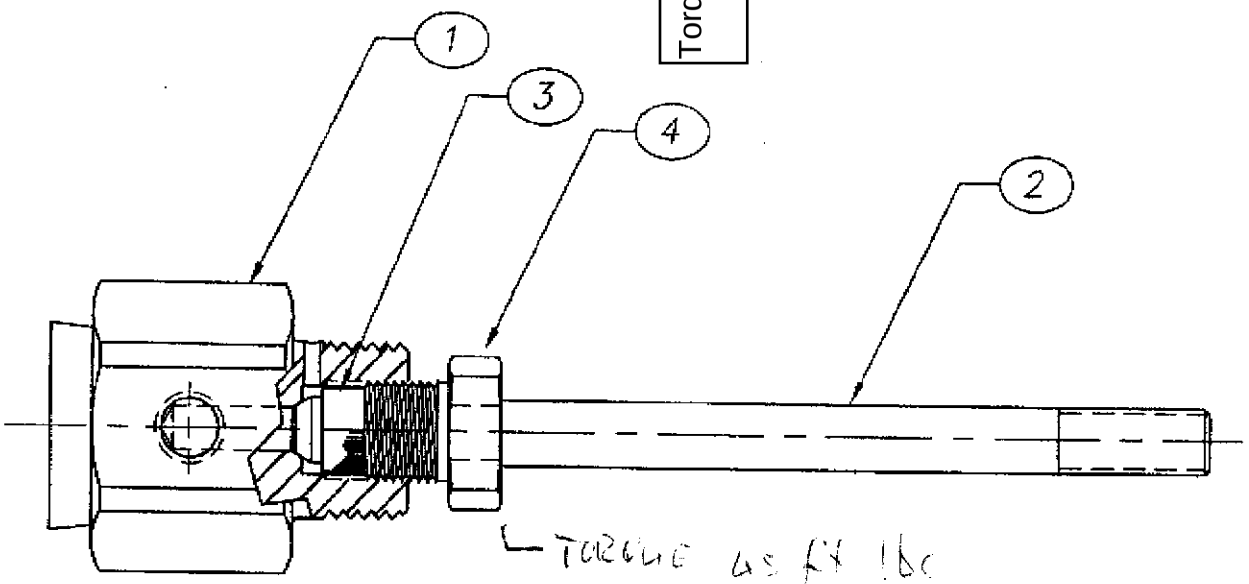
NOTES:

1. THREAD COLLAR ONTO STEM (LEFT HAND THREAD) UNTIL TWO THREADS BEYOND EDGE OF CONE ON STEM ARE SHOWING.
2. SLIDE GLAND ONTO STEM, AND INSERT STEM INTO ADAPTER. TORQUE GLAND 33 TO 35 LB/FT.

Torque 45 ft lbs

01-41-4694 = ~~2T4~~ 2+3+4

Assy = 01-41-4690 = 1+2+3+4



ORIGINAL

ITEM	QTY	UNIT	PART NUMBER	DESCRIPTION	MATERIAL
4	1	EA	73-32-0002	GLAND, 3/8" O.D. TUBING	
3	1	EA	73-32-0001	COLLAR, 3/8" O.D. TUBING	
2	1	EA	01-31-4691C	TEST SPUD STEM	
1	1	EA	01-32-2843K	TEST PRESSURATION ADAPTER	

GALISO
GAS LIQUIDS SOLIDS
MONTROSE, CO
(970) 249-0233 PHONE
(970) 249-0607 FAX

INTERPRET THIS DRAWING IN ACCORDANCE WITH Y14.5

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES:
.X ± .1
.XX ± .01
.XXX ± .005
ANGLES ± 1°
SURFACE ROUGHNESS √

APPROVAL	SIGNATURE	DATE
DRAWN BY:	R. CLAY	7/23/02
PRODUCTION		7/26/02
ENGINEERING		7-25-02
QUALITY ASSURANCE		7/26/02

TITLE:
PRESSURIZATION ADAPTER ASSEMBLY
G & H STYLE TEST HEADS

DRAWING NUMBER	REVISION	EXTENSION	SHEET
1-41-4690	C	DWG	1 OF 1

Test head spares

To assist identification of head type, the newer style heads are fitted with a bulkhead fitting where the high pressure water and low pressure air fittings screw into the head.

"Old" style head before October 2001

"New" style head after October 2001

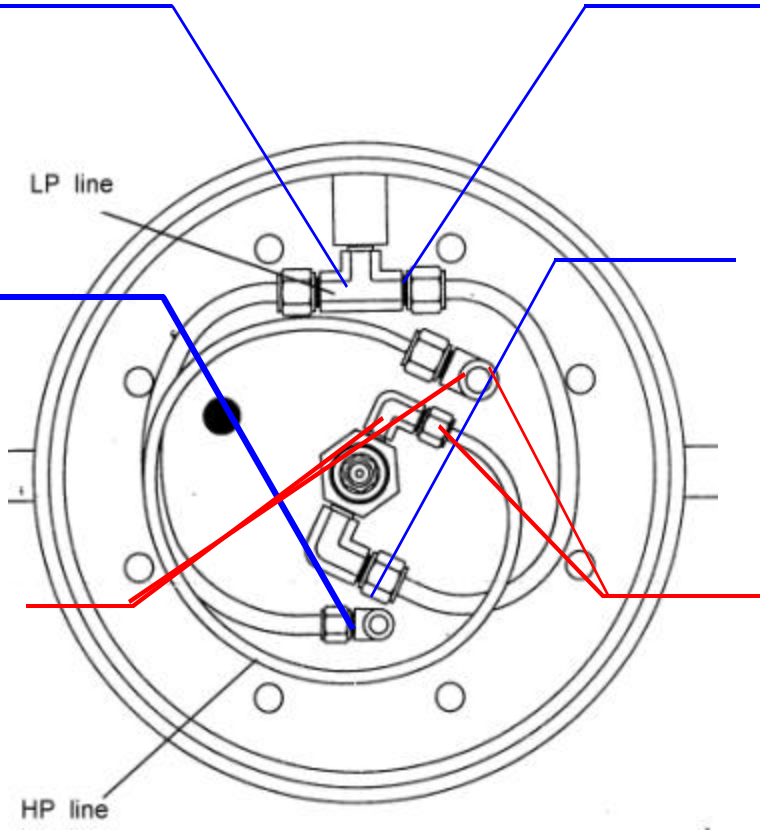
Tee 3/8 x 1/4NPT M
Hi-Seal 73-51-0488

3/8" ferrules Hi-Seal
73-51-0675
3/8" Nut Hi-Seal
73-51-0690

Elbow 3/8 x ¼ NPT M
HI-Seal 73-51-0354

Male elbow High Pressure
¼" x 1/8 NPT M Hi-Seal
73-38-0347

¼" ferrules ????
73-51-0675
¼" Nut ????
73-38-0688



Tee 3/8 x 1/4NPT M
Parker CPI 73-51-0488C

3/8" ferrules Parker CPI
73-51-0675C
3/8" Nut Parker CPI
73-51-0690C

Elbow 3/8 x ¼ NPT M
Parker CPI 73-51-0354C

Male elbow High Pressure
¼" x 1/8 NPT M Gyroloc
73-38-0347G

¼" ferrules Gyroloc
73-51-0675C
¼" Nut Gyroloc
73-38-0688C

12" LP line Hi-Seal	01-71-2425A
14" LP line Hi-Seal	01-71-2426A
18" LP line Hi-Seal	01-71-2427A
24" LP line Hi-Seal	01-71-2428A
Stem G Style	01-42-2953C
Stem H Style	01-42-2756
Adapter 1/8 NPT 1"-12UNF-2A	01-32-2843
12" & 14" HP line Hi- Seal	01-71-2433A
18" HP line Hi-Seal	01-71-2435A
24" HP line Hi-Seal	01-71-2436A

12" LP line CPI	01-71-2425C
14" LP line CPI	01-71-2426C
18" LP line CPI	01-71-2427C
24" LP line CPI	01-71-2428C
Stem G Style	01-42-2953C
Stem H Style	01-42-2756
Pressurisation Adapter	01-32-2843H
12" & 14" HP line Gyroloc	01-71-2433B
18" HP line Gyroloc	01-71-2435B
24" HP line Gyroloc	01-71-2436B

NEW STYLE TEST HEADS
1/2001

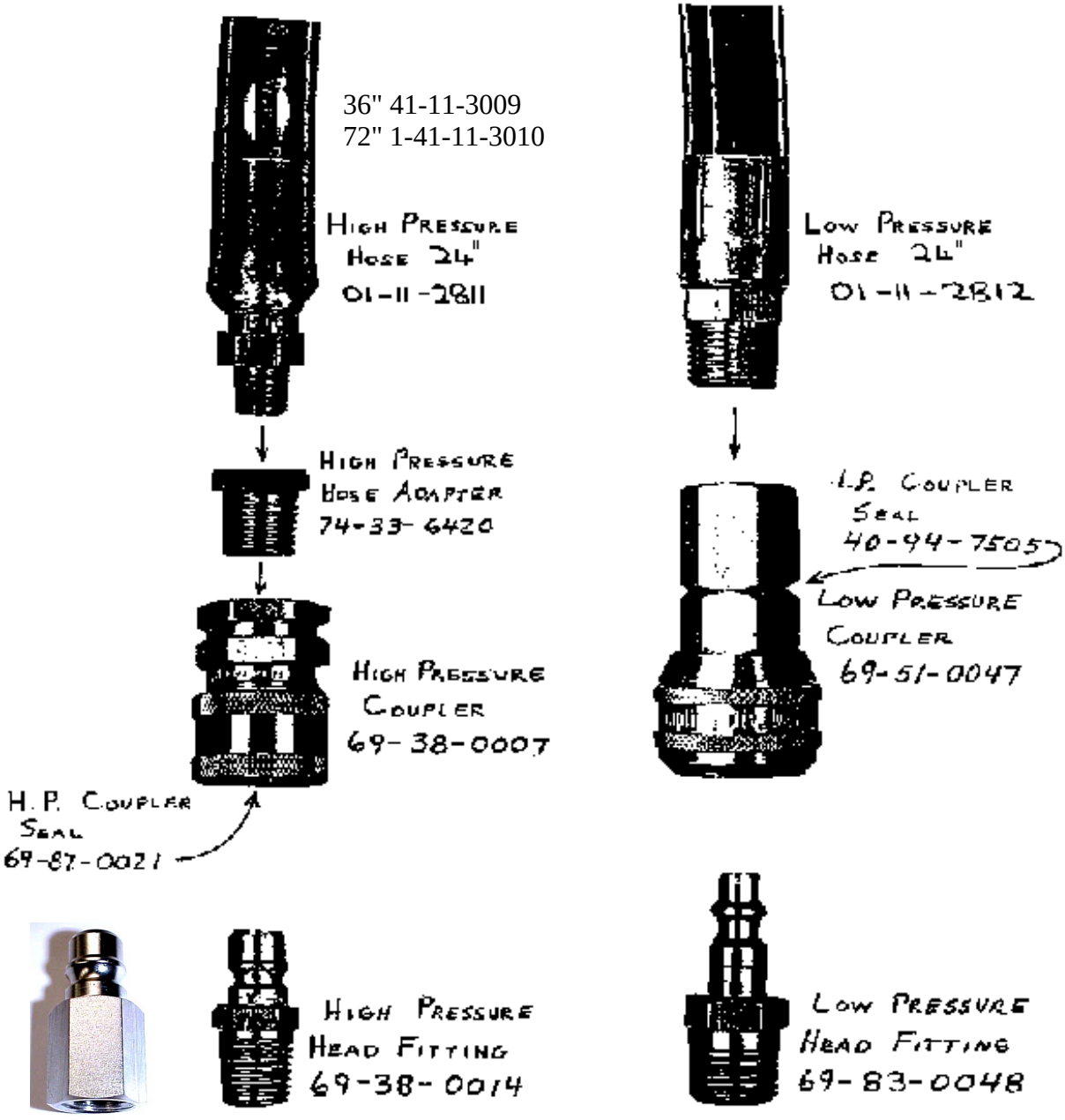
HYDRACLOSE® HEAD REPAIR
PARTS USAGE LIST
FOR 12, 14, 18 OR 24 INCH AND FOR [redacted] "G", OR "H" STYLE

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
01-31-2385B	Q.C. Stem Protector		01-51-4640A	14" Safety Device	
01-31-2850F	Head Stud		01-51-4641A	18" Safety Device	
01-31-4628A	Head Safety Locking Arm (12")		01-51-4642A	24" Safety Device	
01-31-4629A	Head Safety Locking Arm (14")		01-53-4590A	12" Safety Device	
01-31-4630A	Head Safety Locking Arm (18")		01-71-2425A	12" L.P. Line – Hi Seal	
01-31-4631A	Head Safety Locking Arm (24")		✓ 01-71-2425C	12" L.P. Line - CPI	
01-31-4689A	Spud,Plate, 1 Piece,Machined,H-Style		01-71-2426A	14" L.P. Line – Hi Seal	
✓ 01-31-4691B	Spud,Stem,G & H Style		✓ 01-71-2426C	14" L.P. Line - CPI	
01-32-2033H	24" Lower Plate		01-71-2427A	18" L.P. Line – Hi Seal	
01-32-2034E	24" Upper Plate		01-71-2427C	18" L.P. Line - CPI	
01-32-2518C	Lifting Eye		01-71-2428A	24" L.P. Line	
01-32-2519D	Backing Plate		01-71-2433A	12" & 14" H.P. Line – Hi Seal	
01-32-2520A	Diaphragm		✓ 01-71-2433B	12" & 14" H.P. Line - Gyrolok	
01-32-2521C	Spanner Ring		01-71-2435A	18" H.P. Line – Hi Seal	
01-32-2524B	Plate,Spud,GHH-6B & 6H		✓ 01-71-2435B	18" H.P. Line – Gyrolok	
01-32-2530F	GTS-500 Spud		01-71-2436A	24" H.P. Line – Hi Seal	
01-32-2531A	½" Speed Seal		✓ 01-71-2436B	24" H.P. Line - Gyrolok	
01-32-2532	½" Spud Washer		40-87-6118	70 Shore Buna N "O"-Ring	
01-32-2533E	GTS-750 Spud		40-87-6212	"O" Ring	
01-32-2534	¾" Speed Seal		43-11-0060C	Serial No. Nameplate	
01-32-2535B	¾" Spud Washer		43-31-6205A	Label, Danger	
01-32-2536F	GTS-1000 Spud		43-41-8145A	Label Pkg,Test Head	
01-32-2537	1" Speed Seal		50-41-0032	Ball Bearing	
01-32-2538	1" Spud Washer		62-33-0219	1"-8-8" SST Hex Bolt	
01-32-2545	Brass Nut Protector		62-33-0852	3/8"-24SST Hex Nut	
01-32-2752A	Pressurization Spring		62-33-5808	1'-8 Nylon Lock Hex Nut	
01-32-2824E	GTS-750-G Spud		62-33-6862	3/8"-24 SST Jam Nut	
01-32-2829D.	Coupling Sleeve "G" Head		62-83-0504	3/8"-34x7/8" Hex Bolt	
01-32-2843H	Pressurization Adapter		62-83-0505	3/8"-24x1" Hex Bolt	
✓ 01-32-2843X	Adapter,1/8'NPT,1"-12unf-2A		62-83-0509	3/8"-24x1.5" Hex Bolt	
01-32-2845F	GTS-1000-G Spud		✓ 62-83-8719	U-Bolt,3"Pipe,1/2"-13x4.5"L,Zinc	
01-32-2846F	GTS-500-G Spud		63-33-0019	1" SST Std. Flat Washer	
01-32-4532K	12" Lower Plate		63-83-0003	3/8" Zinc Lock Washer	
01-32-4533E	12" Upper Plate		69-38-0007	Q.C. Coupling H.P.	
01-32-5022J	14" Lower Plate		69-38-0014	Q.C. Male Plug H.P.	
01-32-5023D	14" Upper Plate		✓ 69-38-0076 A	Q.C,Nipple, 1/4"NPT	
01-32-5518F	18" Upper Plate		69-51-0047	Q.C. Coupling, L.P.	
01-32-5519H	18" Lower Plate		69-83-0048	Q.C. Male Nipple L.P.	
01-32-8504A	Coupling,Spud,GHH-6H		69-87-0021	H.P. Q.C. Coupling Seal	
01-33-2031L	24" Head Boot		✓ 73-38-0045G	1/4" NPT Bulkhead, Gyrolok	
01-33-4531M	12" Head Boot		73-38-0347	¼"X1/8" Male Elbow – Hi Seal	
01-33-5020M	14" Head Boot		✓ 73-38-0347G	¼" X 1/8" Male Elbow - Gryolok	
01-33-5506L	18" Head Boot		73-38-0348	¼"X1/4" Male Elbow – Hi Seal	
01-41-2818B	½" Spud Protector		73-51-0354	3/8"X1/4" Male Elbow – Hi Seal	
01-41-2819B	¾" Spud Protector		✓ 73-51-0354C	3/8"X1/4" Male Elbow - CPI	
01-41-2820B	1" Spud Protector		73-51-0355	¾"X3/8" Male Elbow – Hi Seal	
01-41-2931	Q.C. Kit		✓ 73-51-0355C	¾"X3/8" Male Elbow - CPI	
01-42-2756	Spud Stem Assembly (H)		73-51-0488	3/8"X1/4" Male Brch Tee – Hi Seal	
01-42-2831A	Spud Stem Protector		✓ 73-51-0488C	3/8"X1/4" Male Branch Tee-CPI	
01-42-2953C	Spud Stem Assembly (G)		73-51-0675	3/8" Brass Sleeve	
01-42-4555A	Spud Plate Assembly (G)		73-51-0690	3/8" Brass Nut	
01-42-4556B	Side Plate Assembly (12")		74-00-2022	3/8" NPT Full Coupling	
01-42-4557B	Side Plate Assembly (14")		74-00-6021	¼" NPT Full Coupling	
01-42-4558B	Side Plate Assembly (18")		74-33-6420	1/8"X1/4" SST Hex Bushing	
01-42-4559C	Side Plate Assembly (24")		74-37-5021	¼" SST 3000 PSI Coupling	
			✓ 74-51-2783	3/8"NPTx1.5L,Br,Blkhd,Adpt.	
			76-33-6261	¼"X1/4" SST Hex Nipple	
			92-11-0003	¾" Blowout Plug	

Dept 7 - Gatso spares + cat

TOTAL HOURS LABOR: 9.9×10^{99} days

Ref: I:\GALISO\products\test head\test head connections b.doc
Date: 12/03/2003

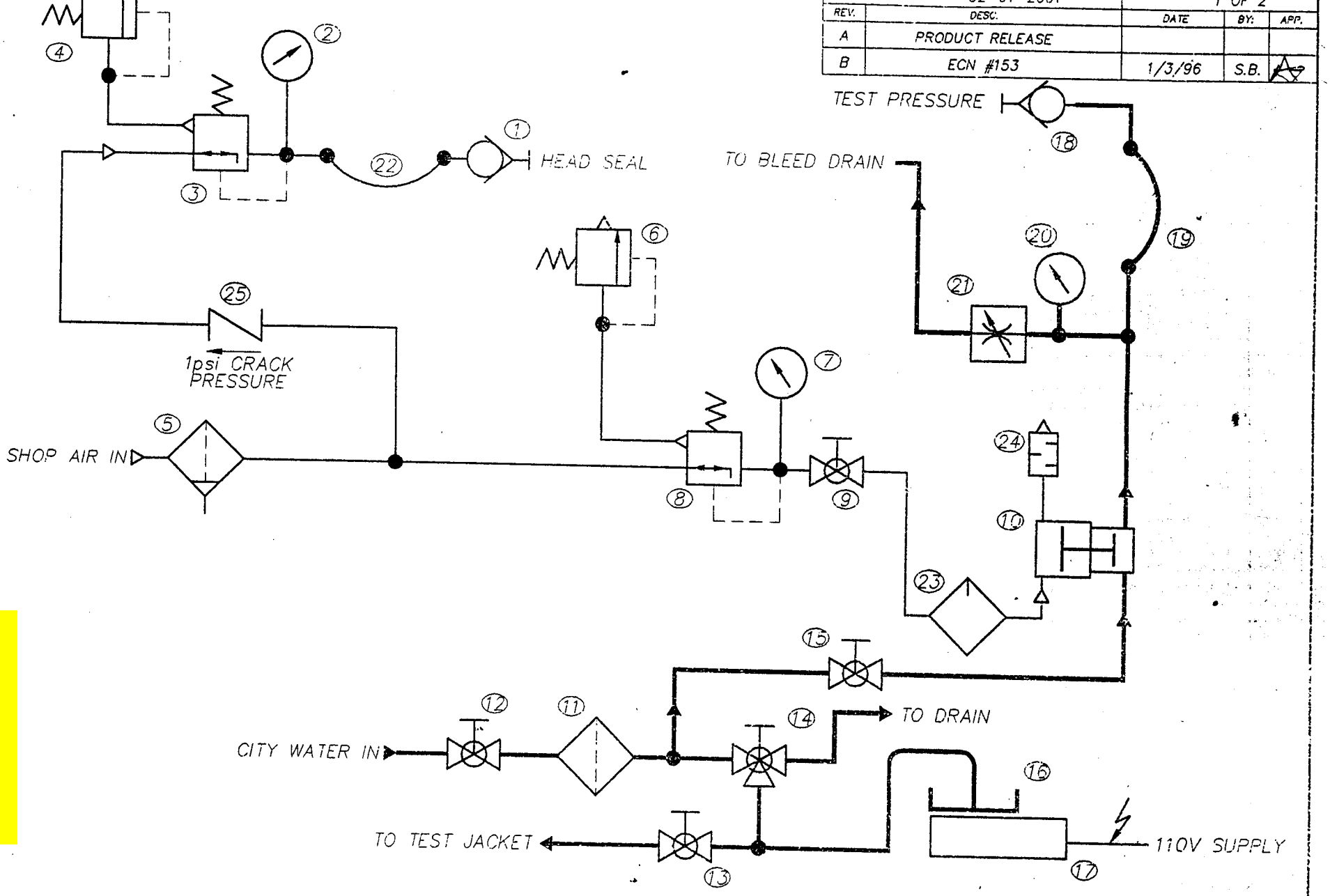


69-38-0076
New Style
After 2002

Quick Connect Coupler Parts Breakdown

Bancroft Hinchey Ltd, Unit 5 Bolney Grange Business Park, Stairbridge Lane, Bolney, W. Sussex RH17 5PA
Tel: +44(0)1444 248884 or 07000 226276 Fax: +44(0)1444 242767 E-mail: Galiso@bancroft.co.uk

REV.	DESC.	DATE	BY:	APP.
A	PRODUCT RELEASE			
B	ECN #153	1/3/96	S.B.	



GTC 8000

GALISO
GAS LIQUIDS SOLIDS

MATERIAL	N/A
DRAWING NUMBER	02-91-2001
NEXT ASSEMBLY	N/A
SHEET	1 OF 2
REVISION	B
UNLESS OTHERWISE SPECIFIED - TOLERANCES ARE:	.X = ± N/A .XX = ± N/A .XXX = ± N/A
E.C.N.	N/A

GTC-8000 SYSTEM SCHEMATIC

GTC-8000

DRAWN:	S.BROWN	DATE	6/22/94
TEAM LEADER	F.JANKOWSKY	DATE	6/24/94
Q.A.	W.BACUS	DATE	6/24/94
SCALE	NONE	FILE NAME	02912

		DATE	BY:
A	PRODUCT RELEASE		
B	ECN #153	1/3/96	S.B.

- BALL VALVE, 2 WAY HAND OPERATED
- BALL VALVE, 3 WAY HAND OPERATED
- PRESSURE GAUGE
- QUICK ACTING COUPLING, UNCOUPLED
- FILTER WITH WATER TRAP MANUAL CONTROL DRAIN
- PRESSURE RELIEF VALVE (SAFETY VALVE)
- PRESSURE REGULATOR WITH RELIEF PORT
- FILTER OR STRAINER
- RESERVOIR OPEN TO ATM. W/ INLET PIPE BELOW FLUID LVL
- CONNECTED PIPLINE (JUNCTION)
- ADJUSTABLE NEEDLE VALVE (BLEED)
- FLOW DIRECTION WATER
- FLOW DIRECTION PNEUMATIC
- SILENCER
- PRESSURE INTENSIFIER (WATER PUMP)
- LUBRICATOR

FLOW LINES

- WATER
- AIR
- PILOT
- ELECTRIC
- FLEXIBLE

NOTE:

⚠ ITEM #20 WILL BE A 36-11-2500, TEST GAUGE, 0-11,000 psi IF REFERENCING A 02-51-2013, GTC-8000 w/ 11K GAUGE.

ITEM	QTY	UNIT	PART NUMBER	DESCRIPTION	MATERIAL
25	1	EA	83-11-0031	CHECK VALVE, 1/4"	
24	1	EA	80-11-7001	MUFFLER, 3/4" NPT	
23	1	EA	80-11-4024	LUBRICATOR, AIR LINE, 1/2"	
22	1	EA	01-11-2965	L.P. FLEXIBLE HOSE	
21	1	EA	81-11-0299	BLEED VALVE	
⚠ 20	1	EA	36-11-2007	TEST PRESSURE GAUGE (0-9000 psi)	
19	1	EA	41-11-3010	H.P FLEXIBLE HOSE	
18	1	EA	69-38-0007	H.P. TEST PRESSURE Q.C. COUPLER	
17	1	EA	37-11-8402	EXPANSION MEASURING DEVICE (SCALE)	
16	1	EA	09-76-0005	EXPANSION BOWL	
15	1	EA	81-11-1012	WATER TO PUMP VALVE	
14	1	EA	81-11-1013	BOWL WATER LEVEL ADJUSTMENT VALVE	
13	1	EA	81-11-1012	EXPANSION VALVE	
12	1	EA	81-11-1011	WATER SHUT OFF VALVE	
11	1	EA	80-11-0202	WATER FILTER	
10	1	EA	38-11-3078	PNEUMATICALLY ACTUATED WATER PUMP	
9	1	EA	81-11-1012	PUMP SPEED ADJUSTMENT VALVE	
8	1	EA	37-11-3064	PUMP SUPPLY REGULATOR	
7	1	EA	36-11-0523	PUMP SUPPLY PRESSURE GAUGE	
6	1	EA	83-11-0047	125 PSI SAFETY VALVE	
5	1	EA	30-11-0201	AIR FILTER	
4	1	EA	83-11-0013	100 PSI SAFETY VALVE	
3	1	EA	37-11-3058	HEAD SEAL PRESSURE REGULATOR (MINI)	
2	1	EA	36-11-0523	HEAD SEAL PRESSURE GAUGE	
1	1	EA	69-51-0047	L.P. HEAD SEAL Q.C COUPLER	

GALISO®
GAS FLUIDS SOLIDS

MATERIAL: N/A

GTC-8000 SYSTEM SCHEMATIC

GTC-8000

DRAWING NUMBER	NEXT ASSEMBLY	SHEET	REVISION
02-91-2001	N/A	2 OF 2	B

UNLESS OTHERWISE SPECIFIED - TOLERANCES ARE: X = ± N/A XX = ± N/A XXX = ± N/A

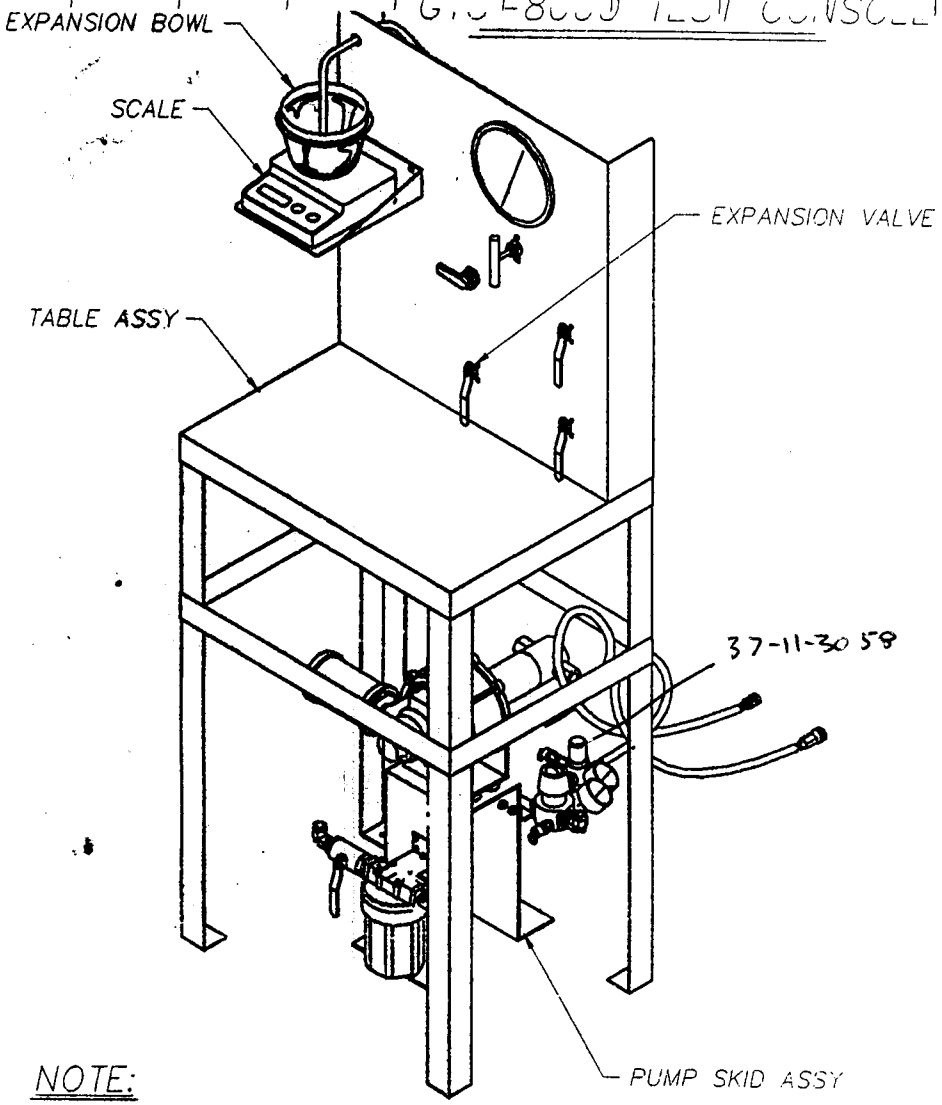
E.C.N. N/A

		DATE
DRAWN	S.BROWN	6/22/94
TEAM LEADER	F.JANKOWSKY	6/24/94
Q.A.	W.BACUS	6/24/94

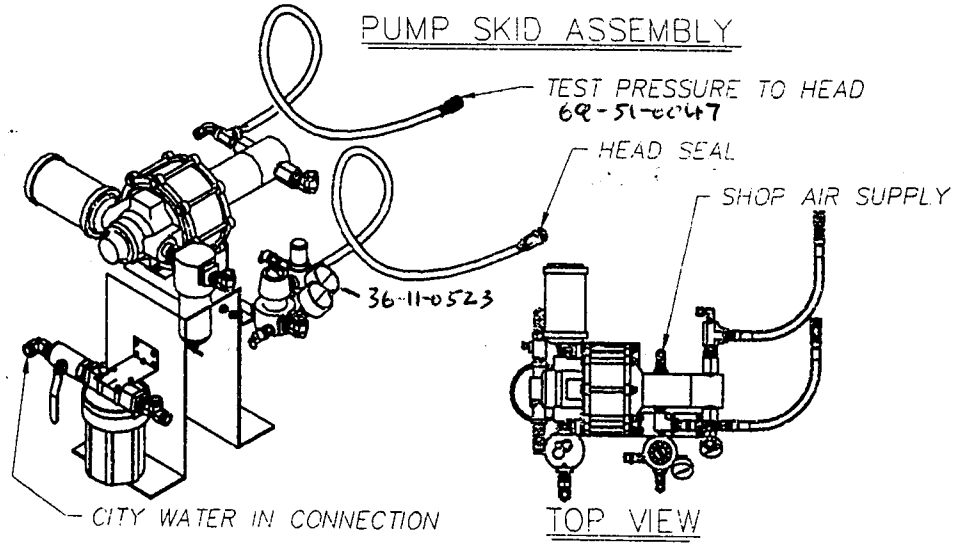
SCALE: NONE FILE NAME: 02912001

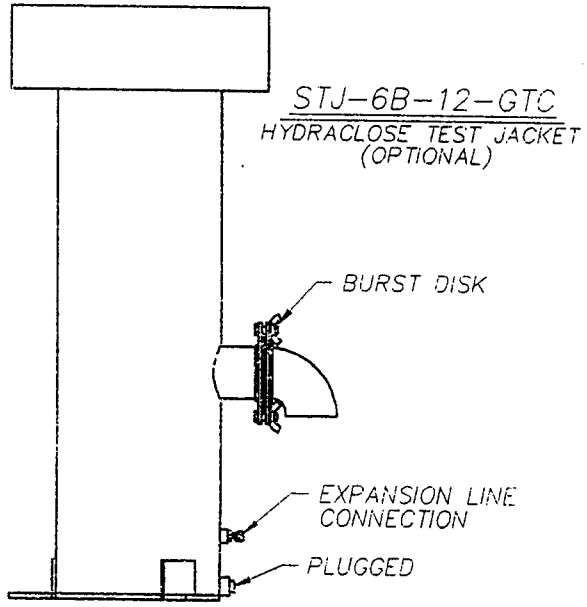
GTC-8000 TEST CONSOLE

REV	DESC	DATE	BY	APP
B	ECN #153	2/22/96	S.B.	



PUMP SKID ASSEMBLY





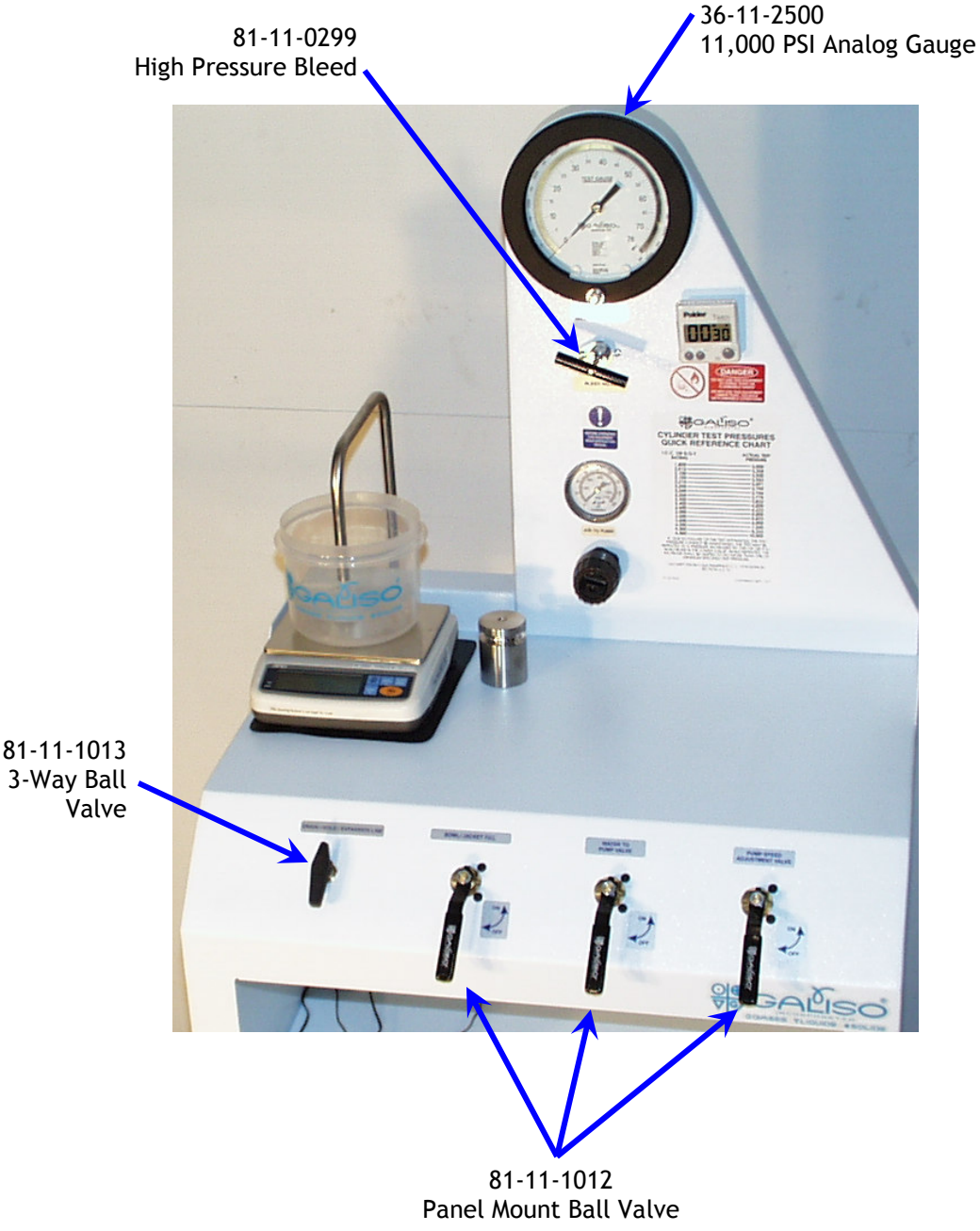
NOTE:

1. REFERENCE SECTION 4.1 OF YOUR INSTRUCTION MANUAL FOR A DETAILED SET OF INSTRUCTIONS ON INSTALLING THE GALISO TEST CONSOLE, THE GTC-8000 OR THE GTC-8000 WITH 11,000 PSI GAUGE.

GALISO
GAS LIQUIDS SOLIDS

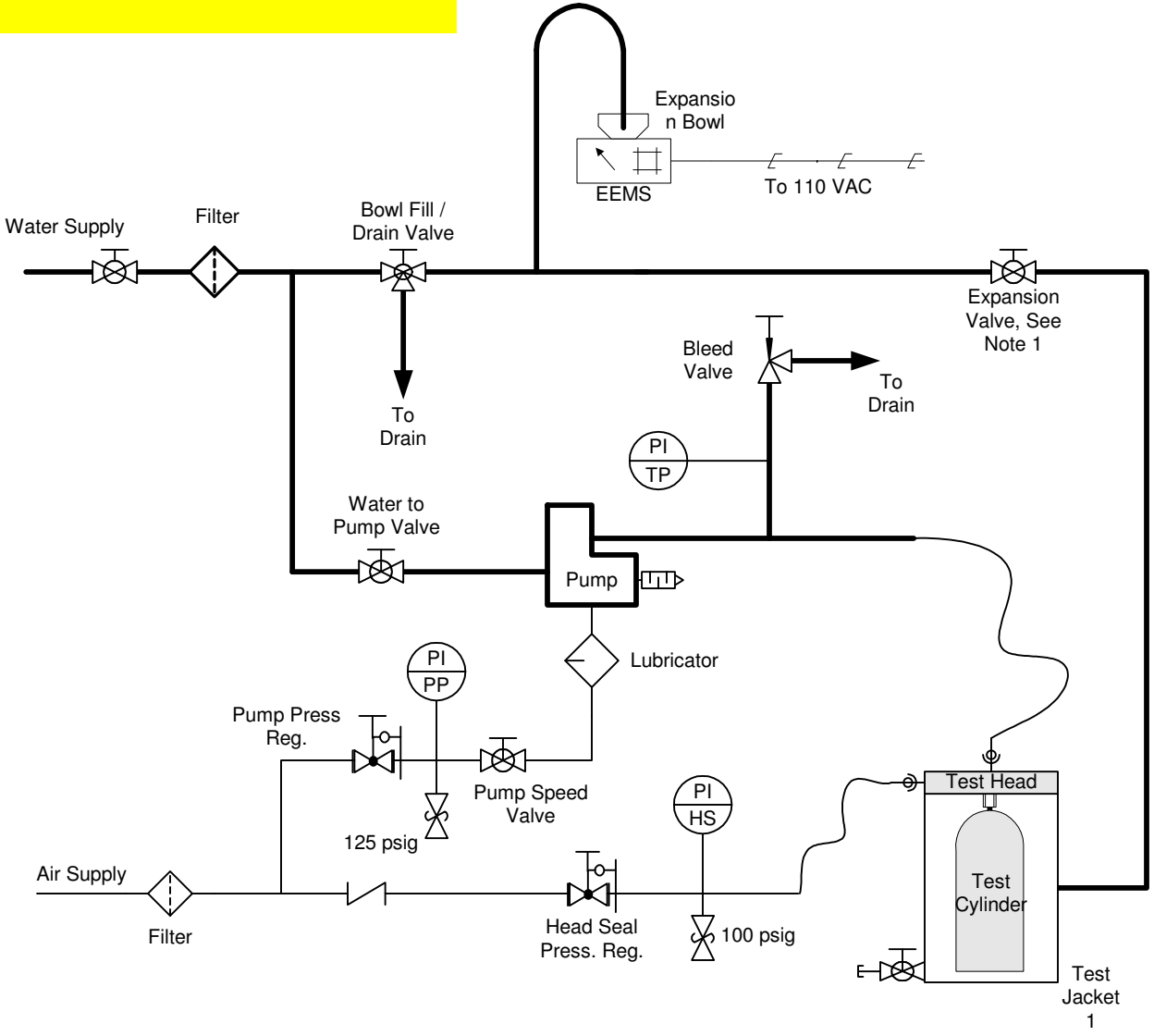
MATERIAL N/A	GTC-8000 INSTALLATION			DRAWN S.BROWN	DATE 6/28/94
				TEAM LEADER A.NORDHOFF	DATE 6/30/94
DRAWING NUMBER 02-71-2001	NEXT ASSEMBLY N/A	SHEET 1 OF 1	REVISION B	Q.A. W.BACUS	DATE 6/30/94
UNLESS OTHERWISE SPECIFIED - TOLERANCES ARE: X = ± N/A .XX = ± N/A .XXX = ± N/A			E.C.N. N/A	SCALE NONE	FILE NAME 02712C

Spare Parts Visual ID:

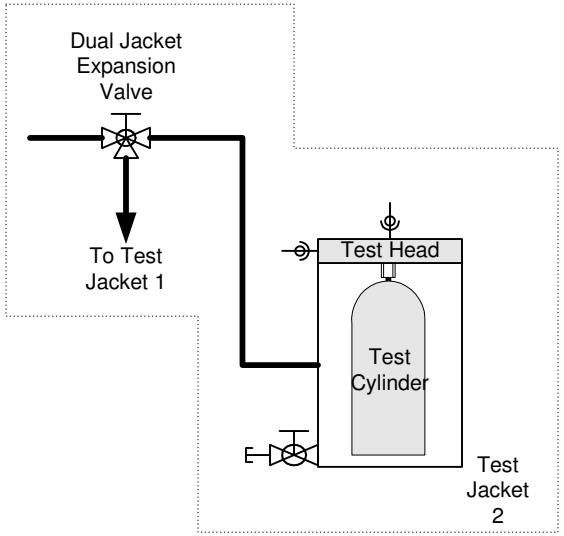


REV.	AUTHORITY	DATE	BY:
A	Redrawn from 02-91-2001	3/2/99	DST

GTC spares



Dual Jacket Option



NOTES:

1. Replace with 3-way valve and re-plumb for dual jacket option.

GALISO
GAS LIQUIDS SOLIDS
MONTROSE,CO
(970) 249-0233 PHONE
(970) 249-0607 FAX.

INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI Y14.5

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES:
.X = ±
.XX = ±
.XXX = ±
ANGLES ±
SURFACE ROUGHNESS

APPROVAL	SIGNATURE	DATE
DRAWN BY:	DST	3/2/99
PRODUCTION		
ENGINEERING		
QUAL. ASSURANCE		

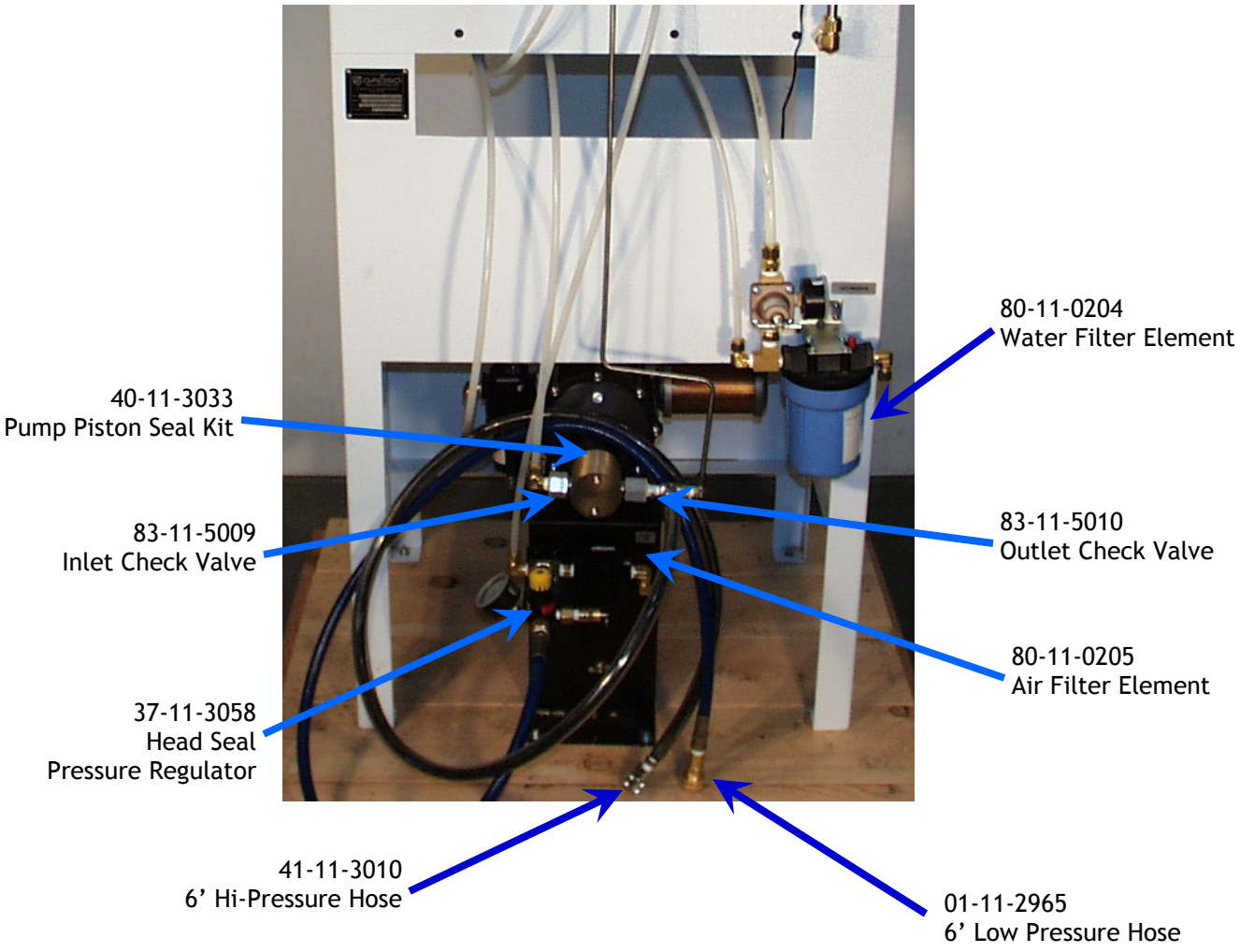
TITLE:

Piping and Instrument Diagram

GTC Series Test Consoles

DRAWING NUMBER	REVISION	EXTENSION	SHEET
21-61-1098	A	VSD	1 OF 1

Spare Parts Visual ID continued:



Common Parts for both High and Low Pressure Test Consoles:
01-11-2965 6' LOW PRESSURE HOSE
01-32-2531 1/2" SPEED SEALS
01-32-2532 1/2" S.S. WASHERS
01-32-2534 3/4" SPEED SEALS
01-32-2535 3/4" S.S. WASHERS
01-32-2537 1" SPEED SEALS
01-32-2538 1" S.S. WASHERS
01-32-2545 BRASS PROTECTOR NUT
01-41-2931A COUPLER KIT HIGH AND LOW PRESSURE
01-41-3235 BURST DISK W/GASKET
01-41-3901 SNUBBER LINE
36-11-2500 11,000 PSI GAGE
37-11-3055 WATER PRESSURE REGULATOR
37-11-3058 HEAD SEAL PRESSURE REGULATOR
37-11-3064 AIR TO PUMP REGULATOR
38-11-5405 INLET CHECK VALVE REPAIR KIT
38-11-5406 OUTLET CHECK VALVE REPAIR KIT
40-87-6110N CHECK VALVE O-RING
40-94-7505 LOW PRESSURE COUPLER SEAL
62-22-6862 S.S. JAM NUT
69-87-0021 HIGH PRESSURE COUPLER SEAL
80-11-0204 WATER FILTER ELEMENT
80-11-0205 AIR FILTER ELEMENT
81-11-0299 HIGH PRESSURE BLEED VALVE
81-11-1012 PANEL MTG. BALL VALVE
81-11-1013 3 WAY BALL VALVE
83-11-5010 OUTLET CHECK VALVE

GTC 10K ModII parts:
38-11-3084 PUMP REPAIR KIT
40-11-3033 PUMP PISTON SEAL KIT
41-11-3010 6' HIGH PRESSURE HOSE
83-11-5009 INLET CHECK VALVE

GTC 1200 parts:
41-11-3020 6’ High Pressure Hose (GTC 2200 also)
38-11-5569 Pump Repair Kit
38-11-5570 Pump Piston Seal Kit
36-11-1515 1500PSI Test Gauge
83-11-5012 Inlet Check Valve

19.9.1 RECORTEST/OPEN (A) Console Replacement Parts:

Table 19-1
Replacement Parts

ITEM	DESCRIPTION	PART NO.
1	Load Cell Assembly, includes cable with DB-9 connector	~~01-41-1330~~
2	Computer, Monitor and Keyboard	02-41-0215
3	Bleed Valve / Transducer Assembly	02-41-0216
4	Printer, Parallel	94-11-0018
5	Valve Assembly, Expansion/Drain	02-41-0220
6	Air Reservoir Assembly	02-41-0222
7	Valve Assembly, Micro-5	02-41-0218
8	Air filter/Regulator Assembly	02-41-0223
9	Transducer Assembly., includes cable with DB-9 connector	01-42-1402
10	Pump Assembly	02-41-0221
11	Water Filter/Regulator Assembly	02-41-0128

From 2006 (?)
Load cell assy = 02-41-0621

Pump kit complete 38-11-3084
check valve - inlet 83-11-5009
check valve - outlet 83-11-5010
check valve seal kit - inlet 38-11-5405
check valve seal kit - outlet 38-11-5406
Puston hp seal kit 40-11-3033
Burst disc 01-32-2493
Burst disc gasket 01-32-2510
burts disc with gasket 01-41-3235
Jacket cover 12" 01-31-3100
Jacket cover 14" 01-31-3101
Jacket cover 18" 01-31-3102
Jacket cover 24" 01-31-3103
Jacket cover 30" 01-31-3104
Jacket cover 36" 01-31-3105
Printer ribbon Star NX1001 (old style) 94-11-0027
Printer ribbon Panasonic KXP1150 94-11-0028

RecOpen Spares

1	MEM #129	4/22/92	G.N. R.S.
2	E.C.N. #133	6/15/93	G.N. C.H.
3	ECN #153	10/20/95	S.B. A

NOTES:

1. PLUG THE COMPUTER, MONITOR & PRINTER INTO A 115 VOLT AC SURGE CONTROL UNIT (CUSTOMER SUPPLIED). TURN ON THE SURGE CONTROL UNIT, THEN MONITOR, PRINTER, AND COMPUTER.

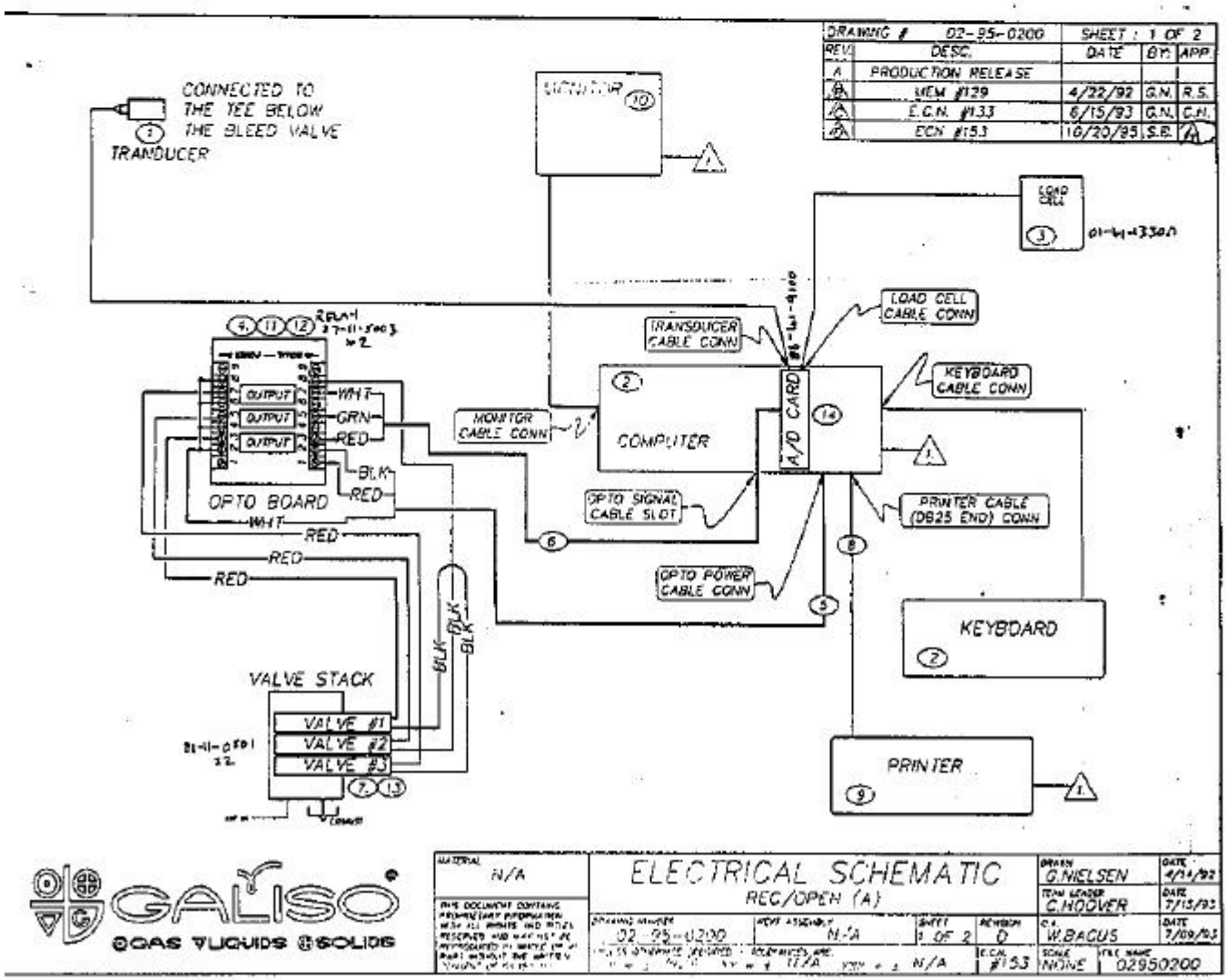
ITEM	QTY	UNIT	PART NUMBER	DESCRIPTION	MATERIAL
14	1	EA	86-41-9100 B	A/D CARD, 18 BIT	
13	3	EA	81-11-0501	VALVE, SOLENOID ACTD.	
12	3	EA	87-11-5003	RELAY OUTPUT, 5 VOLT DC	
11	1	EA	87-11-5001	BOARD, RELAY, MOUNT, 4 POSITION	
10	1	EA	86-11-6562	MONITOR, 14"	
9	1	EA	94-11-0018	PRINTER, PARALLEL	
8	1	EA	94-11-0017	CABLE, PRINTER, PARALLEL	
7	1	EA	02-41-0233 A	VALVE ASSEMBLY, MICRO-3	
6	1	EA	02-41-0242 A	CABLE ASSEMBLY, OPTO SIGNAL	
5	1	EA	02-41-0243 A	CABLE ASSEMBLY, OPTO POWER	
4	1	EA	02-41-0234 A	BOARD ASSEMBLY, OPTO RELAY-4	
3	1	EA	01-41-1330 A	LOAD CELL/DB9 CONN. ASSY	
2	1	EA	02-41-0215 D	COMPUTER, & KEYBOARD W/POWER CABLES	
1	1	EA	01-42-1402 C	TRANSDUCER ASSEMBLY	

GALISO® GAS FLUIDS SOLIDS

MATERIAL: N/A

ELECTRICAL SCHEMATIC
REC/OPEN (A)

DRAWN: G.NIELSEN 4/14/92
TEAM LEADER: C.HOOVER 7/15/93
Q.A.: W.BACUS 7/09/93
DRAWING NUMBER: 02-95-0200
NEXT ASSEMBLY: N/A
SHEET: 2 OF 2
REVISION: D
E.C.N. #153
SCALE: NONE
FILE NAME: 02950200



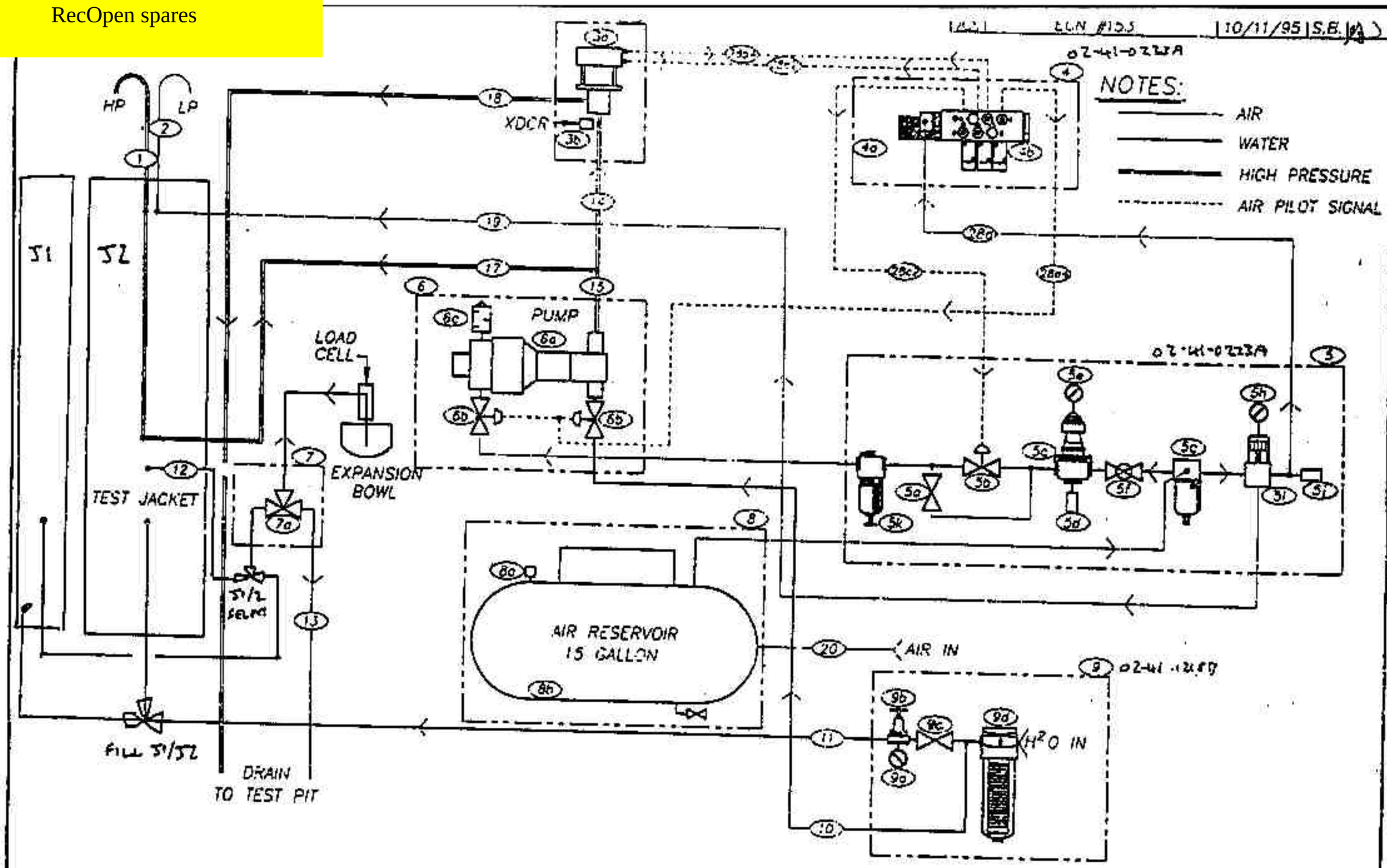
GALISO® GAS FLUIDS SOLIDS

MATERIAL: N/A

ELECTRICAL SCHEMATIC
REC/OPEN (A)

DRAWN: G.NIELSEN 4/14/92
TEAM LEADER: C.HOOVER 7/15/93
Q.A.: W.BACUS 7/09/93
DRAWING NUMBER: 02-95-0200
NEXT ASSEMBLY: N/A
SHEET: 1 OF 2
REVISION: D
E.C.N. #153
SCALE: NONE
FILE NAME: 02950200

RecOpen spares



GALISO® GAS LIQUIDS SOLIDS

MATERIAL: N/A	WATER & AIR SCHEMATIC REC/OPEN (A)	DRAWN: G.NIELSEN	DATE: 3/13/92
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION WITH ALL RIGHTS AND TITLES RESERVED AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF GALISO INC.		CHECKED: TOM REY	DATE: 5/14/92
	DRAWING NUMBER: 02-91-0200 / NEXT ASSEMBLY: N/A / SHEET: 1 OF 2 / REVISION: C	ISSUED: RICH SMITH	DATE: 6/17/92
	UNLESS OTHERWISE SPECIFIED - TOLERANCES ARE: .XX = ± N/A .XXX = ± N/A	E.C.N. #153	SCALE: NONE / FILE NAME: 02910200

10-35 REFER TO THE INSTALLATION INSTRUCTIONS DWG # 02-91-0172 & THE MANUAL FOR ASSEMBLY PROCEDURES.

REV.	DESC.	DATE	BY:	APP.
A	PRODUCTION RELEASE			
A	MEM #129	4/22/92	G.N.	R.S
A	ECN #153	10/11/95	S.B.	A

ITEM	QTY	UNIT	PART NUMBER	DESCRIPTION
9d	1	EA	80-11-0083	FILTER HOUSING, WITH VALVE 3/4"
9c	1	EA	81-11-0009	VALVE, BALL, 1/2"
9b	1	EA	37-11-3055	REGULATOR, WATER, 3-50 P.S.I. 1/2"
9a	1	EA	36-11-0010	GAUGE, 0-60 P.S.I. 1/4" BACK CONNECT
9	1	EA	02-41-0128 A	FILTER/REGULATOR ASSEMBLY, WATER IN
8b	1	EA	57-00-3004	TANK, AIR, HORIZONTAL, 15 GAL. ASME
8a	1	EA	83-11-2503	VALVE, RELIEF, 1/4"NPT 175 P.S.I
8	1	EA	02-41-0222 B	TANK, ASSEMBLY, AIR
A 7a	1	EA	81-11-0268	VALVE, BALL, 3WAY 3/8"
7	1	EA	02-41-0220 A	VALVE ASSEMBLY, EXPANSION/DRAIN
6c	1	EA	81-11-7001	MUFFLER, 3/4" NPT
6b	2	EA	81-11-1403	VALVE, AIR PILOT, 1/2"
6a	1	EA	38-11-3078	PUMP, WATER, 14K P.S.I. PNEUMATIC
6	1	EA	02-41-0221 B	PUMP ASSEMBLY H.P.
5k	1	EA	80-11-4024	LUBRICATOR, AIR LINE, 1/2"
5j	1	EA	83-11-0013	VALVE, SAFETY, 1/4" NPT 100P.S.I.
5i	1	EA	37-11-3058	REGULATOR, MINI 1/4"
5h	1	EA	36-11-0523	GAUGE, 2"D, 160#, 1/8" BACK CONNECT
5g	1	EA	80-11-0066	FILTER, AIR 1/2"
5f	1	EA	81-11-0009	VALVE, BALL 1/2"NPT
5e	1	EA	36-11-0508	GAUGE, 160#
5d	1	EA	83-11-2502	VALVE, RELIEF,1/4" NPT 125 P.S.I.
5c	1	EA	37-11-3048	REGULATOR, LARGE,125#, 1/2"
5b	1	EA	81-11-1403	VALVE, AIR PILOT, 1/2"
5a	1	EA	81-11-0700	VALVE, NEEDLE 1/4" X 1/4"
5	1	EA	02-41-0223 A	FILTER/REGULATOR ASSEMBLY, AIR
4b	1	EA	81-11-0501	VALVE, SOLENOID, ACTUATED
4a	1	EA	79-11-1025	SILENCER, 1/8" ISO WITH COTTON INSERT
A 4	1	EA	02-41-0233 A	VALVE ASSEMBLY, MICRO-3
A 3b	1	EA	01-42-1402 C	TRANSDUCER, PRESSURE
3a	1	EA	81-11-0130	VALVE, AIR OPERATED 10000 P.S.I.
A 3	1	EA	02-41-0210 B	VALVE ASSEMBLY, BLEED
2	1	EA	01-41-2972	HOSE ASSEMBLY, L.P. OC, 24" LONG
1	1	EA	01-41-2973	HOSE ASSEMBLY, 10000 P.S.I. OC, 24" LONG

GALISO® GAS LIQUIDS SOLIDS

MATERIAL: N/A
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION WITH ALL RIGHTS AND TITLES RESERVED AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF GALISO INC.
WATER & AIR SCHEMATIC REC/OPEN (A)
DRAWN: G.NIELSEN — DATE: 3/13/92
CHECKED: TOM REY — DATE: 5/14/92
ISSUED: RICH SMITH — DATE: 6/17/92
DRAWING NUMBER: 02-91-0200 / NEXT ASSEMBLY: N/A / SHEET: 2 OF 2 / REVISION: C
UNLESS OTHERWISE SPECIFIED - TOLERANCES ARE: .XX = ± N/A .XXX = ± N/A
E.C.N. #153 — SCALE: NONE — FILE NAME: 02910200

5.0 PCT-122 SPARE PARTS:

Figures 5-1 and 5-2 depict the primary component spare parts for the PCT-122. The parts shown are also tabulated below.

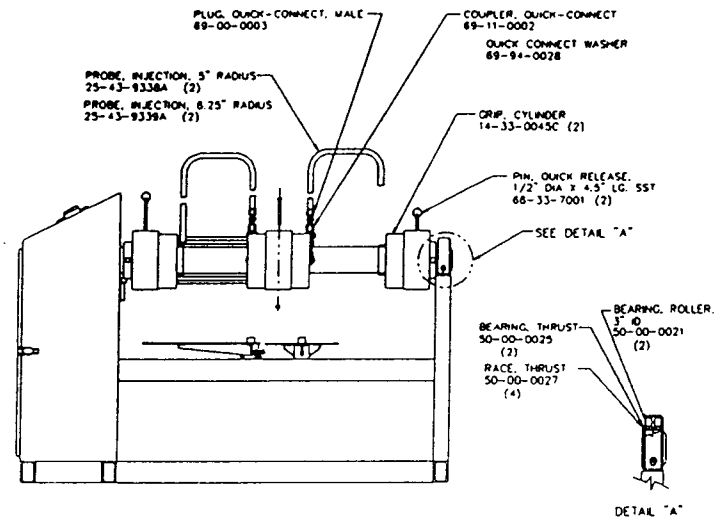


Figure 5 - 1

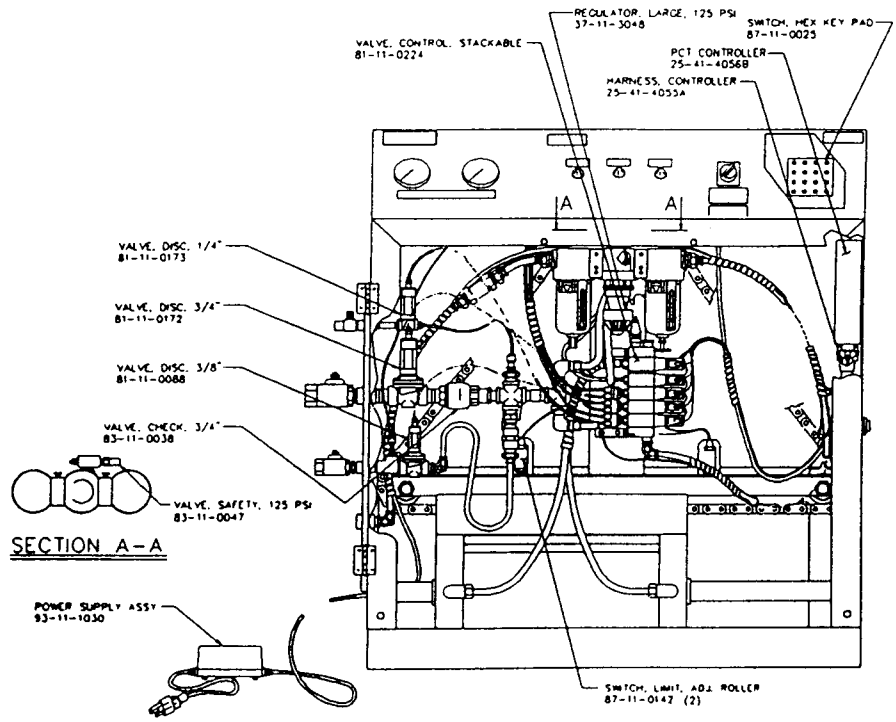


Figure 5 - 2

AZ Spares
38-11-3084 Complete seal kit
83-11-5009 Inlet check valve complete. Seal/repair kit only 38-11-5405.
83-11-5010 Outlet check valve complete. Seal/repair kit only 38-11-5406
40-11-3033 Piston seal kit

AZ HYDRAULIC ENGINEERING INC.
PO BOX 3615
KINGMAN, ARIZONA 86402 U.S.A.
PHONE: 928/757-1400 FAX: 928/757-1004

SERVICING INSTRUCTIONS FOR PUMP MODEL AZ-1-140

PUMP NOT RUNNING PROPERLY: Check to be sure air pressure is reaching the pump Check to be sure air filter is not clogged; clean or replace as required. Check to be sure fluid filter is not clogged; clean or replace as required. If these actions do not remedy operations, a general maintenance repair may be required.

A REPAIR KIT, PART NUMBER P-1-124-140, IS AVAILABLE AND CONTAINS ALL THE PARTS NORMALLY REPLACED DURING A STANDARD MAINTENANCE REPAIR.

GENERAL NOTE: For ease of installation of new parts, all "o" rings, seals, and bumpers should be lubricated with silicone grease, Vaseline or other suitable lubricant.

TO REPLACE THE PACKING IN THE HYDRAULIC CYLINDER: It is not necessary to dismantle the Air Motor. Proceed as follows:

Disconnect the air supply line.
Using an 1/8" Allen wrench, loosen the set screw in the Air Cylinder End, (P-1-7), remove the air muffler if necessary.
Unscrew the Air Motor, (P-1-113), from the Hydraulic Cylinder, (P-1-11-140); the Hydraulic Piston, (P-1-10-140), will be removed with the Air Motor.
The packing, consisting of 1 each 6227-9 "o" ring and 2 each MS28782-9 Teflon Backup Rings, can now be removed and new parts installed.
When replacing the Air Motor, install a new Gasket, (P-1-28), if necessary.
Tighten the Air Motor securely to proper position, tighten set screw.

TO DISASSEMBLE THE AIR MOTOR: refer to Parts List, proceed as follows:

Disconnect the air supply line.
Remove the eight (8) 5/16" bolts around the outside diameter.
To remove the Hydraulic Piston, (P-1-10-140), from the Air Piston, (P-1-48), remove the Retaining Ring, RRT-200.
The Pilot Valve Assembly, (P-1-60), may then be pushed out through the bottom of the Air Piston.
Remove the Retaining, (RRT-262), form the Head Assembly and remove the Bearing Assembly, (P-1-47), by lifting or prying it out with a hammer handle or similar tool. (The Bearing Assembly has a molded rubber seat on one side, if the rubber is damaged, a new Bearing Assembly should be installed).
The Valve, (P-1-3), can now be removed. Remove the Spring, (P-1-5). The Head Casting, (P-1-1), has a rubber bumper, (P-1-57), inserted in the upper portion of the body. This bumper acts as a seal and cushion for the Valve and should be replaced if worn or damaged.

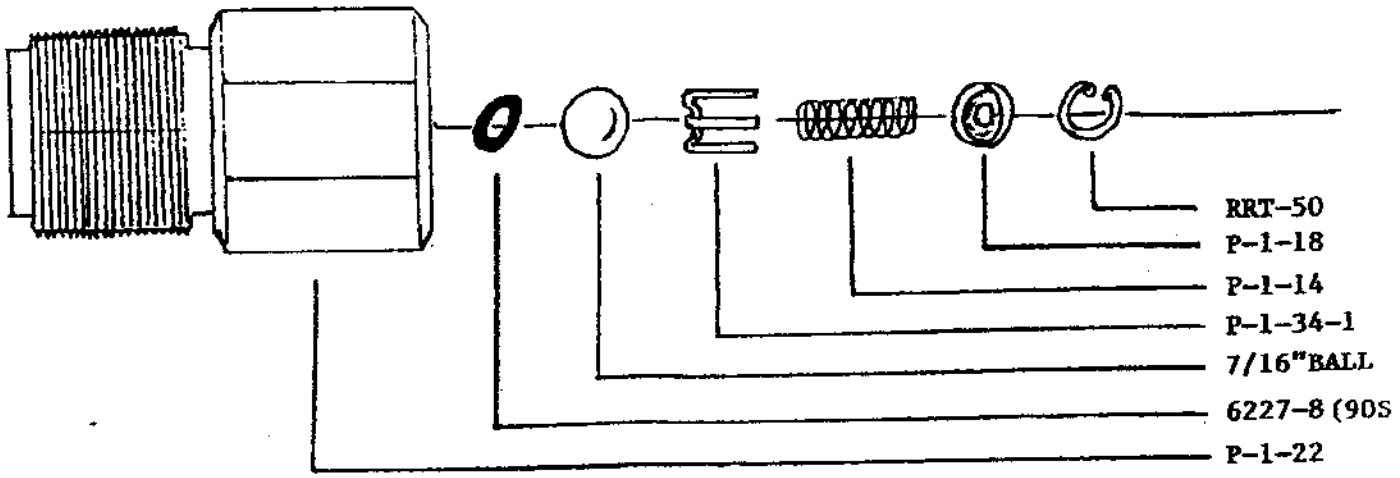
NOTE: when worn or damaged the Valve, (P-1-3), and the Sleeve, (P-1-2), in which the Valve operates can be replaced with a new Valve Assembly, (P-1-111). If installing a new Valve Assembly, install a new set of "o" rings, (28775-144), 4 are required and are included when a replacement assembly is ordered. **CAUTION: DO NOT REMOVE** the Sleeve, (P-1-2), unless a replacement Valve Assembly is being installed. The Valve and Sleeve are ground and honed to a very close tolerance and the Sleeve may be damaged when removed from the Head Casting.

TO REPAIR THE PILOT VALVE ASSEMBLY: (P-1-60), Remove the Retaining Ring, (RRT-93). Using a spanner wrench or needle nose pliers, remove the seat, (P-1-A-24). The Air Check Assembly, (P-1-A-32), and the Spring, (P-1-16), will then drop out and may be inspected for wear or damage. Replace worn or damaged parts and reassemble.

TO REPAIR THE HYDRAULIC CHECK VALVES: refer to the Parts List
INLET VALVE ASSEMBLY, P-1-29: remove the internal parts, inspect and replace as required. Remove the "o" ring, (6227-8 90 Shore), inspect the ball seat in the Check Valve Body, (P-1-21). If worn or damaged a new body should be used. Install a new "o" ring, (6227-8 90 Shore), replace the internal parts and secure the assembly by installing on the Hydraulic Cylinder, (P-1-11-140)
OUTLET VALVE ASSEMBLY, P-1-30: remove the internal parts, inspect and replace as required. Remove the "o"ring, (6227-8 90 Shore), inspect the ball seat in the Check Valve Body, (P-1-22). If worn or damaged a new body should be used. Install a new "o" ring, (6227-8 90 Shore), replace the internal parts and secure the assembly by installing the Retaining Ring, (RRT-50).

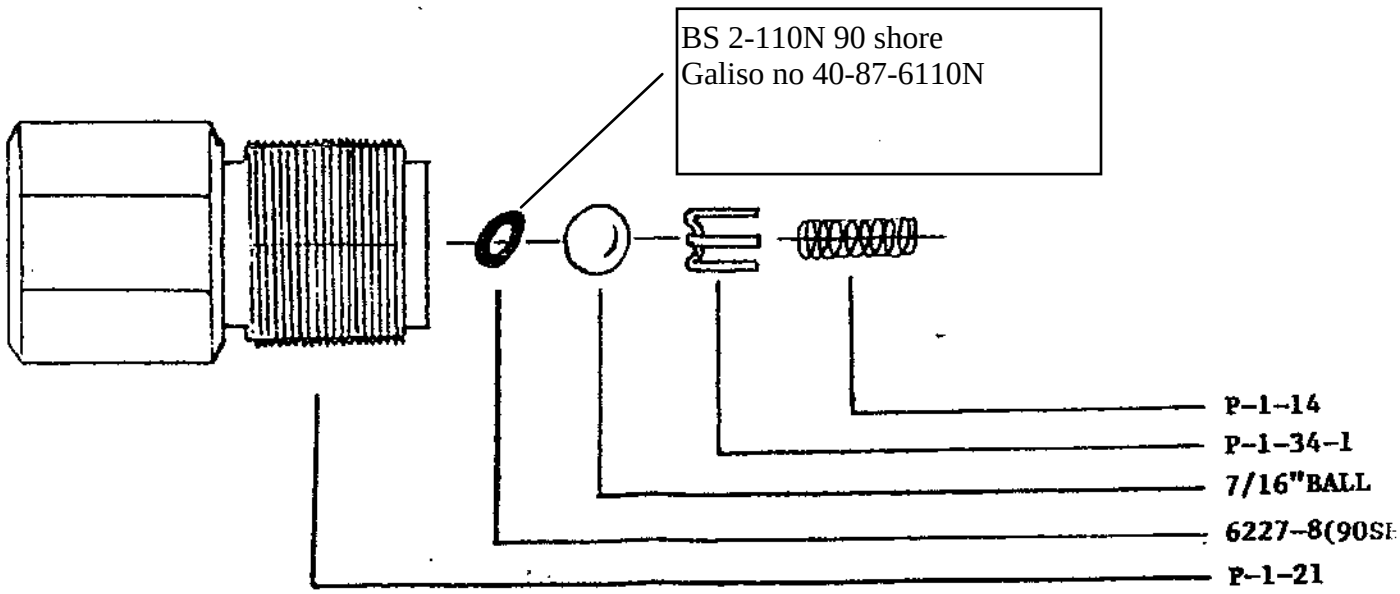
TO REASSEMBLE THE PUMP: it is **VERY IMPORTANT** when reassembling the Air Motor Assembly to be sure that the Air Cylinder, (P-1-4), is in proper position against the flanges on the Pump Head, (P-1-1), and that the Air Cylinder End, (P-1-7), **BEFORE** tightening the bolts that clamp together the Air Motor Assembly. Use a soft hammer to position the flanges tightly against the Air Cylinder, (P-1-4). Bolts should be secured **LIGHTLY** at first, then drawn up in sequence until uniform torque has been applied to all eight bolts. (10-12 foot lbs.)

PARTS LIST FOR FLUID OUT & FLUID IN CHECK VALVE ASSEMBLIES



P-1-30 FLUID OUT

83-11-5010 Outlet check valve complete. Seal/repair kit only 38-11-5406
83-11-5009 Inlet check valve complete. Seal/repair kit only 38-11-5405.

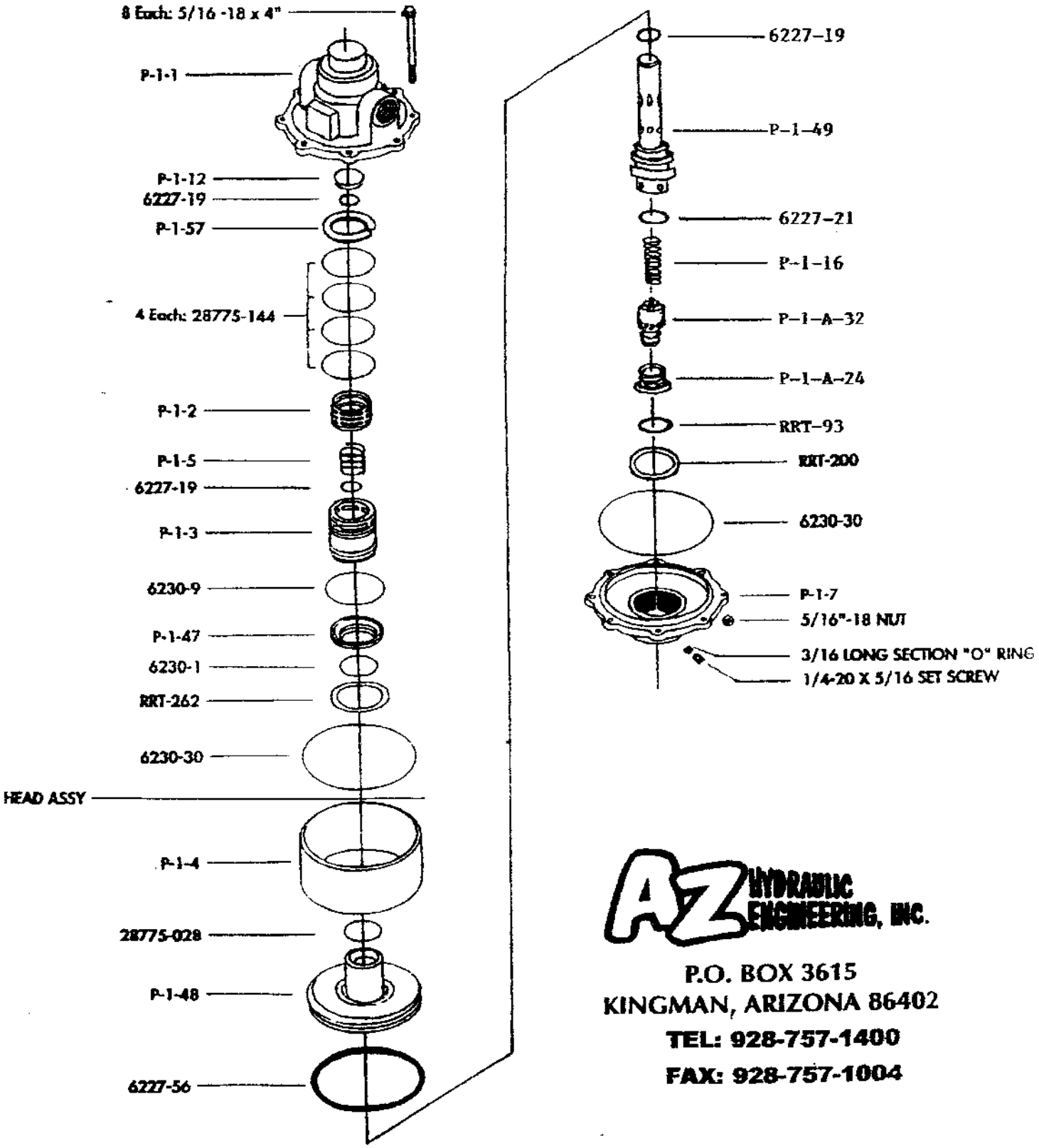


P-1-29 FLUID IN

AZ-1 MODEL PUMP / PARTS LIST

EXPLODED VIEW OF AIR MOTOR

P - 1 - 113

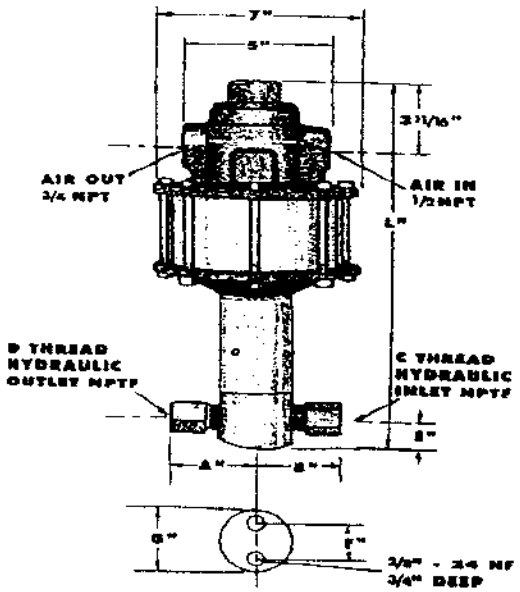


AZ HYDRAULIC ENGINEERING, INC.

P.O. BOX 3615
KINGMAN, ARIZONA 86402
TEL: 928-757-1400
FAX: 928-757-1004

38-11-3084 Complete seal kit

PARTS LIST FOR AZ-1-140CF



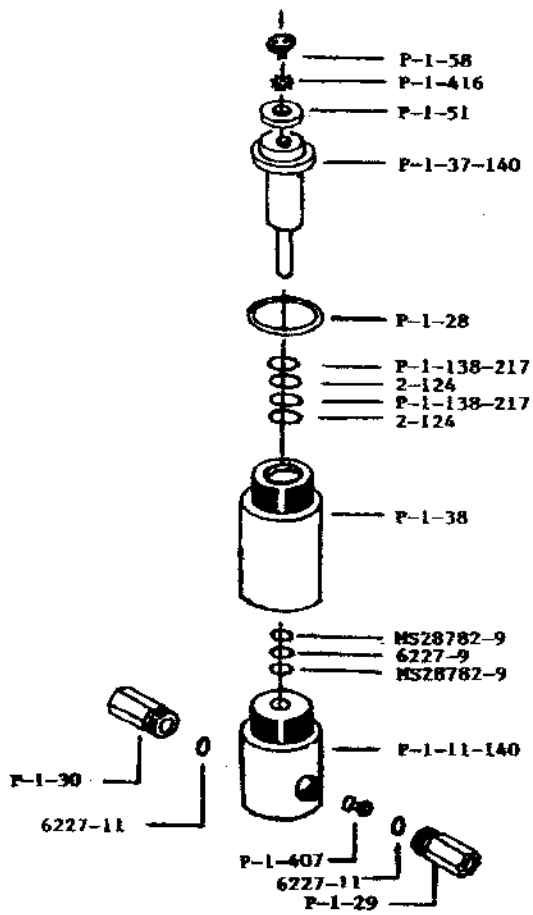
P-1-113
AIR MOTOR ASSEMBLY

P-1-26-100140
HYDRAULIC ASSEMBLY

DIMENSIONS ins/mm								
AZ-1 ASSY	L	A	B	C	D	E	F	G
-10 thru -19	16	3	4	1"	1/2"	1	1 3/4	2 1/2
	406	76	102			25	44	64
-26 thru -107	14 9/16	3	3 3/8	1/2"	1/2"	7/8	1 3/4	2 1/2
	370	76	86			22	44	64
-140 thru -425	14 15/16	2 1/2	2 5/16	3/8"	3/8"	7/8	1 3/4	2 1/2
	379	64	59			22	44	64

Pump may be mounted in any position. (Vertical Prefered) if mounted in an inverted position, drill a 1/16" hole in head or install a drain cock to release any fluid that may accumulate.

AIR PRESSURE PSI	10	20	30	40	50	60	70	80	90	100
HYDRAULIC PRESSURE-PSI	1,100	2,400	3,900	5,400	6,900	8,300	9,800	11,200	12,600	14,000



HYD. PISTON DIA.(ins.)	0.437
HYD. PISTON AREA (ins.)	0.1503
VOLUME PER STROKE (ci.)	0.188

HYDRAULIC PRESSURE-PSI	AIR PSI 60	80	100	APPROXIMATE RATE OF DISCHARGE-CIPM
0	79	86	92	
500				
750				
1,000				
2,000	50	57	61	
2,500				
3,000				
4,000	41	51	56	
5,000				
6,000	33	42	50	
7,000				
8,000	17	35	43	
9,000				
10,000	0	23	37	
12,500		0	29	
15,000			0	

EXPLODED VIEW OF HYDRAULIC ASSEMBLY

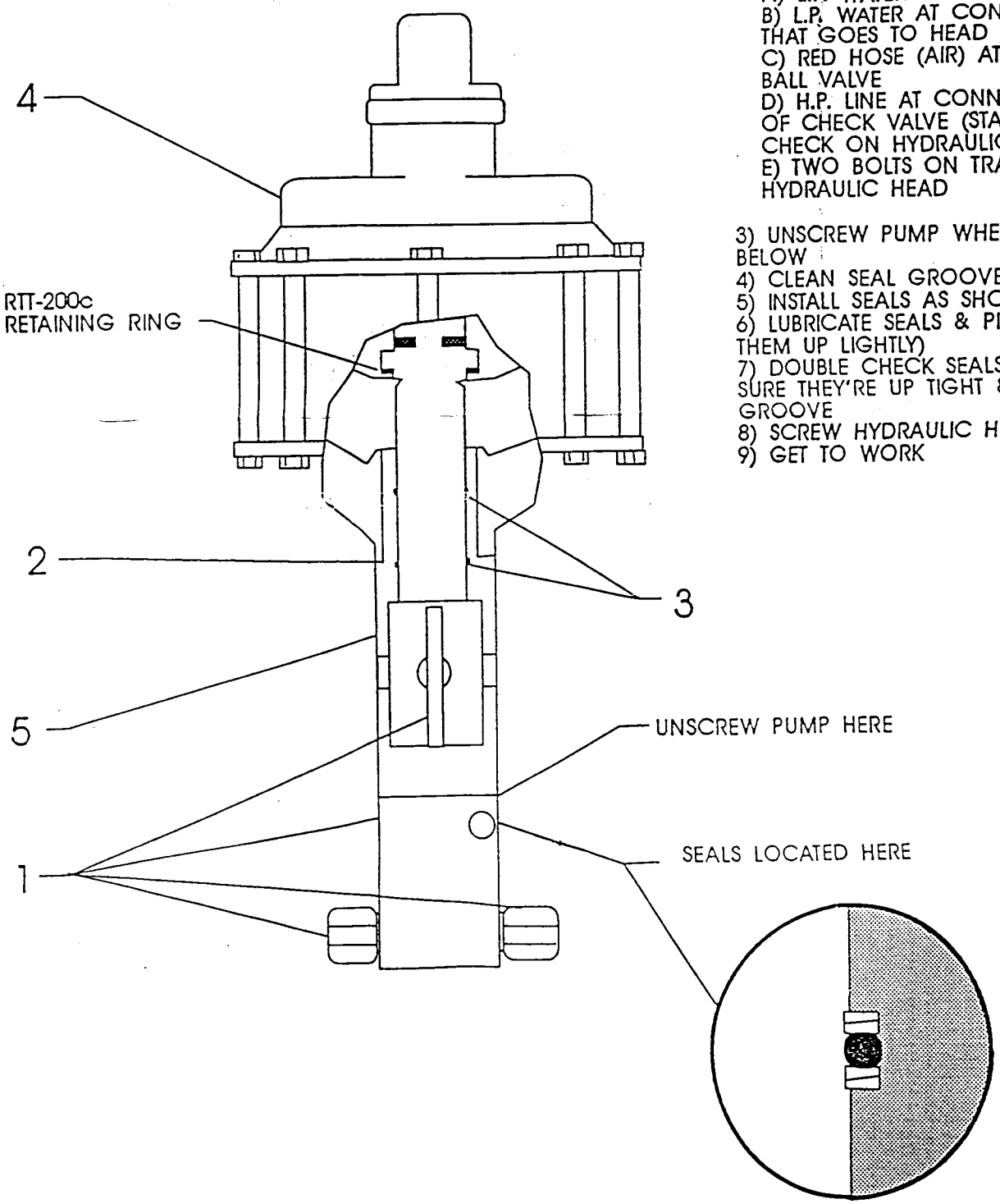
40-11-3033

PUMP ASSEMBLY - WITH ISOLATOR ATTACHMENT

1) SHUT OFF AIR AND WATER TO UNIT.
2) REMOVE PUMP FROM CONSOLE BY REMOVING

A) L.P. WATER IN AT "Y" STRAINER
B) L.P. WATER AT CONNECTION THAT GOES TO HEAD SEAL
C) RED HOSE (AIR) AT THROTTLE BALL VALVE
D) H.P. LINE AT CONNECTION OUT OF CHECK VALVE (STAINLESS CHECK ON HYDRAULIC HEAD)
E) TWO BOLTS ON TRAY INTO HYDRAULIC HEAD

3) UNSCREW PUMP WHERE SHOWN BELOW
4) CLEAN SEAL GROOVE
5) INSTALL SEALS AS SHOWN
6) LUBRICATE SEALS & PISTON (SLICK THEM UP LIGHTLY)
7) DOUBLE CHECK SEALS AND MAKE SURE THEY'RE UP TIGHT & IN THE GROOVE
8) SCREW HYDRAULIC HEAD BACK ON
9) GET TO WORK



5.0 PCT-122 SPARE PARTS: continued

SPARE PARTS LIST: CYLINDER INVERTER 25-54-9480L		
ITEM NUMBER	**DESCRIPTION**	**QUANTITY**
25-41-4056B	PCT CONTROLLER	1
25-41-4055A	HARNESS CONTROLLER	1
14-33-0045B	GRIP CYLINDER	1
25-31-9241A	COUPLING INJECTION PCT	1
25-43-9338A	PROBE INJECTION 5" RADIUS PCT-122	2
25-43-9339A	PROBE INJECTION 6.25 RAD PCT-122	2
50-00-0021	BEARING ROLLER	1
50-00-0025	BEARING THRUST	1
50-00-0027	RACE THRUST	1
69-94-0028	QUICK CONNECT WASHER	2
66-33-7001	PIN QUICK RELEASE 1/2 DIAX 4.5 L SST	1
69-00-0003	PLUG QC MALE 3/8 FPT	1
69-11-0002	COUPLER QC	1
81-11-0088	VALVE DISC 2 WAY 3/8 11439-010	1
81-11-0172	VALVE DISC ¾	1
81-11-0224	VALVE CONTROL STACKABLE 12 VOLT	1
83-11-0038	VALVE CHECK ¾	1
83-11-0047	SAFTEY VALVE ¼	1
87-11-0025	SWITCH HEX KEY PAD MICROSWITCH	1
93-41-1030A	POWER SUPPLY ASSY	1

6.0 GVM-16 SERIES VALVER SPARE PARTS:

Figures 6-1 and 6-2 depict the primary component spare parts for the GVM-16G valver. The parts shown are also tabulated below.

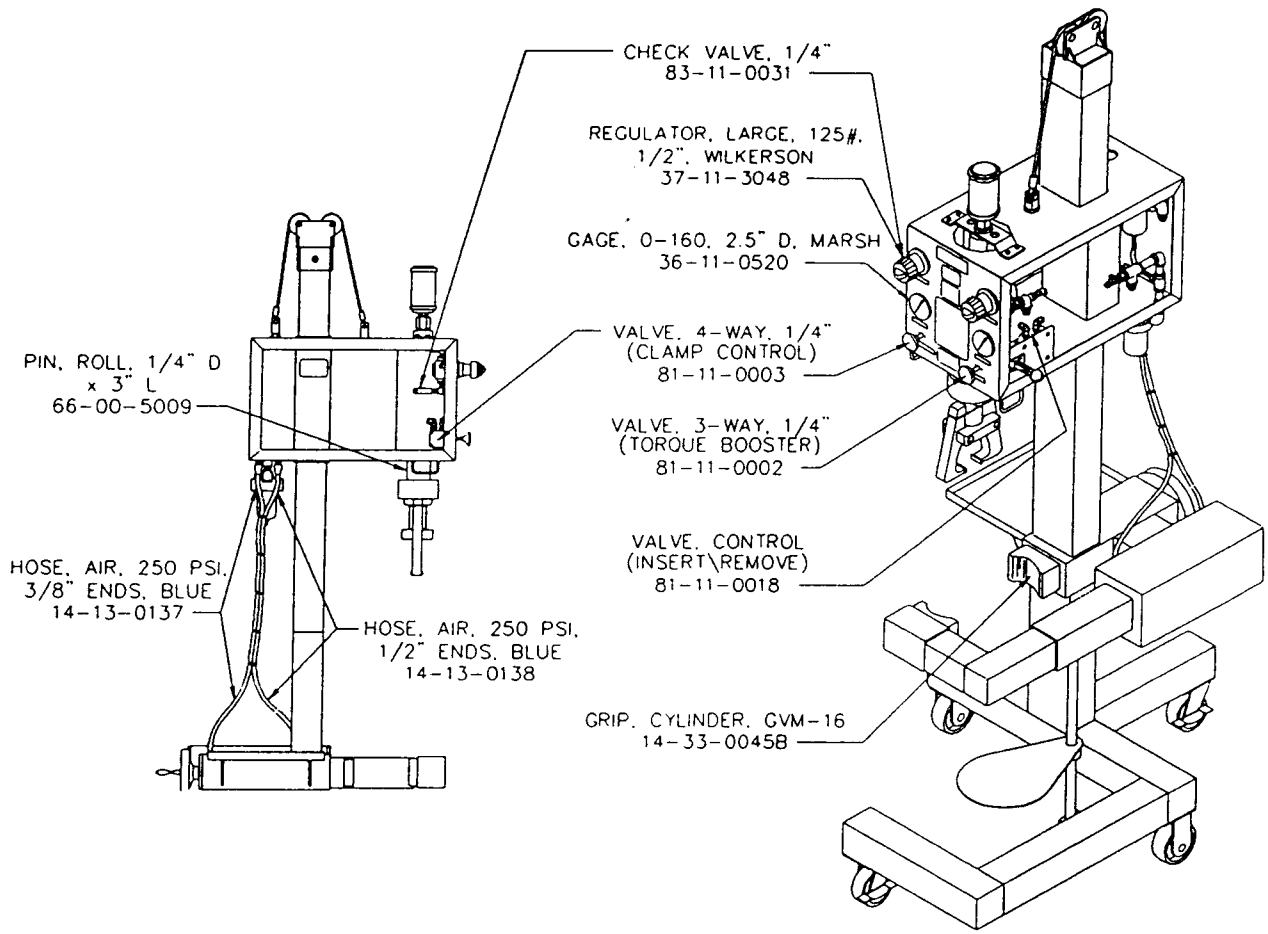


Figure 6 - 1

6.0 GVM-16 SERIES VALVER SPARE PARTS: continued

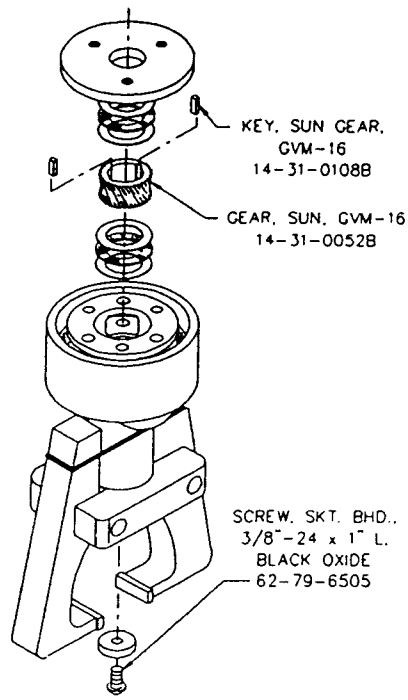


Figure 6 - 2

SPARE PARTS LIST: VALVING MACHINE GVM-16G 14-54-0176D LHPV		
ITEM NUMBER	**DESCRIPTION**	**QUANTITY**
14-13-0137	HOSE AIR 250 PSI 3/8' ENDS BLUE	1
14-13-0138	HOSE AIR 250 PSI 1/2" ENDS BLUE	1
14-31-0052B	GEAR SUN GVM-16	1
14-31-0108B	KEY SUN GEAR GVM-16	1
36-11-0520	GAGE 0-160 2.5 D	1
37-11-3048	REGULATOR LARGE 125# 1/2	1
62-79-6505	SCREW SKT BHD 3/8-24X1" L BLK OXIDE	1
66-00-5009	PIN ROLL 1/4 DX3L	1
83-11-0031	CHECK VALVE 1/4"	1
81-11-0002	VALVE 3 WAY (TORQUE BOOST)	1
81-11-0003	VALVE 4 WAY (CLAMP CONTROL)	1
81-11-0018	VALVE CONTROL (INSERT/REMOVE)	1

MAINTENANCE INSTRUCTIONS FOR ANGLE PATTERN SNO-TRIK VALVES

MS-INS-SNO
CP Revision C
January, 1998

Kit Contents:

TFE Kit:	**Grafoil Kit:**
Glands (2)	Glands (2)
Packing	Packing (2)
Lubricant	Lubricants (2)
Instructions	Instructions
Material Safety Data Sheet	Material Safety Data Sheet

WARNING: Before servicing any installed valve, you must:

- depressurize system
- cycle valve

WARNING: Residual material may be left in the valve and system

*****Refer to Drawing Throughout Procedure*****

1. Loosen and remove the cap screw from the valve body.
2. Lift the lock plate away from the bonnet.
3. Using a wrench, unscrew the bonnet assembly from the valve body.
4. Remove the lock plate from the bonnet.
5. Turn the handle until the entire stem extends through the bottom of the bonnet assembly and remove the stem from the stem shank.
6. Loosen the handle screw and remove the handle from the stem shank.
7. Remove the stem shank from the bonnet.
8. Carefully remove the spacer from the valve body.
9. With a wrench, unscrew the replaceable seat from the valve body.
10. Being careful not to scratch or nick the packing bore, hold the valve upside down and push the glands and packing out through the valve body.
11. Discard the old glands and packing.
12. Remove all contaminants from the handle, bonnet, stem shank, stem, spacer, replaceable seat, and body.
13. Examine all parts carefully for signs of wear or corrosion.
14. Lubricate the stem shank threads with the MS-LT-CP29 lubricant and thread the stem shank into the bonnet.
15. Align the handle screw with the indentation in the stem shank.
16. Place the handle onto the stem shank and tighten the handle screw into that indentation.
17. Lube stem shank slot with MS-LT-CP29 lubricant. Place the stem back into the stem shank slot.
18. Turn the handle until the stem is completely retracted into the bonnet.
19. With grooved end of the spacer facing the handle, slide the spacer over the stem and up toward the bonnet.
20. Place one gland over the stem with the chamfered side positioned toward the handle.

GRAFOIL PACKED VALVES: Lubricate the packing with the MS-LT-MPG lubricant, covering all surfaces of the packing.

21. Place the new packing over the stem and rest it against the gland.
22. Place the other gland on the stem with the chamfered side positioned away from the handle.
23. Position the lock plate over the bonnet assembly.
24. Lubricate the bonnet threads with part of the MS-LT-CP29 lubricant and screw the bonnet assembly into the valve body.

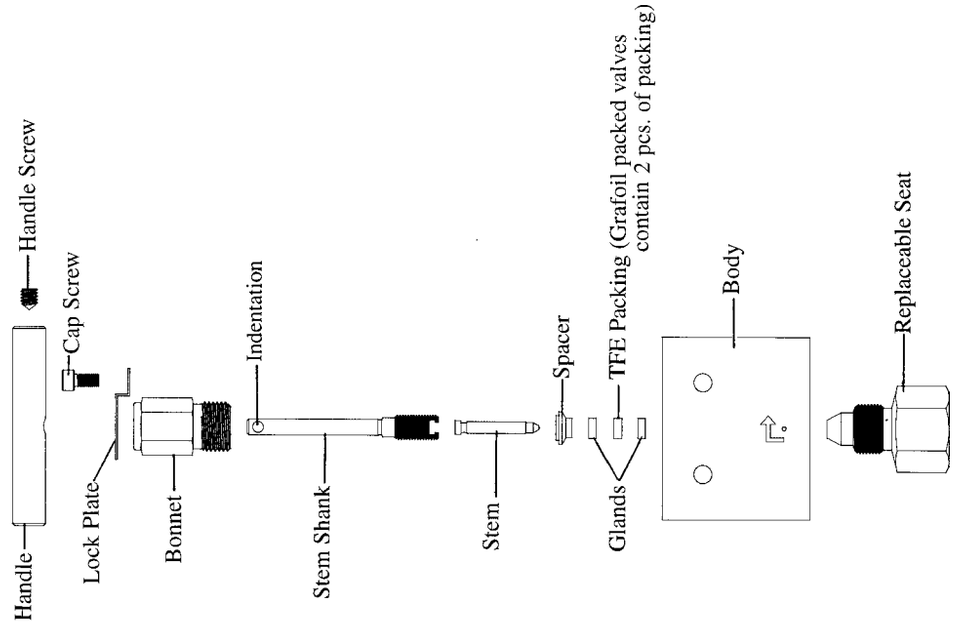
NOTE: Be careful not to get lubricant on stem tip.

25. Torque the bonnet according to the chart below.

Valve Type	Torque Value (in.-lbs.)
Sour Gas (-SG)	150
TFE Packed	300
Grafoil Packed	350

26. Install the cap screw through the lock plate and into the valve body and tighten.
27. Lubricate the threads on the replaceable seat with MS-LT-CP29 lubricant and install the seat into the valve body.
28. Torque the replaceable seat to the Torque Value listed in the chart below.

Valve Series	Torque Value (in.-lbs)
410	250
445	250
645	400
945	650



MAINTENANCE INSTRUCTIONS FOR STRAIGHT PATTERN SNO-TRIK VALVES

MS-INS-SNO
CP Revision C
January, 1998

Kit Contents:

TFE Kit:	**Grafoil Kit:**
Glands (2)	Glands (2)
Packing	Packing (2)
Lubricant	Lubricants (2)
Instructions	Instructions
Material Safety Data Sheet	Material Safety Data Sheet

WARNING: Before servicing any installed valve you must:

- depressurize system
- cycle valve

WARNING: Residual material may be left in valve

Refer to Drawing Throughout Procedure

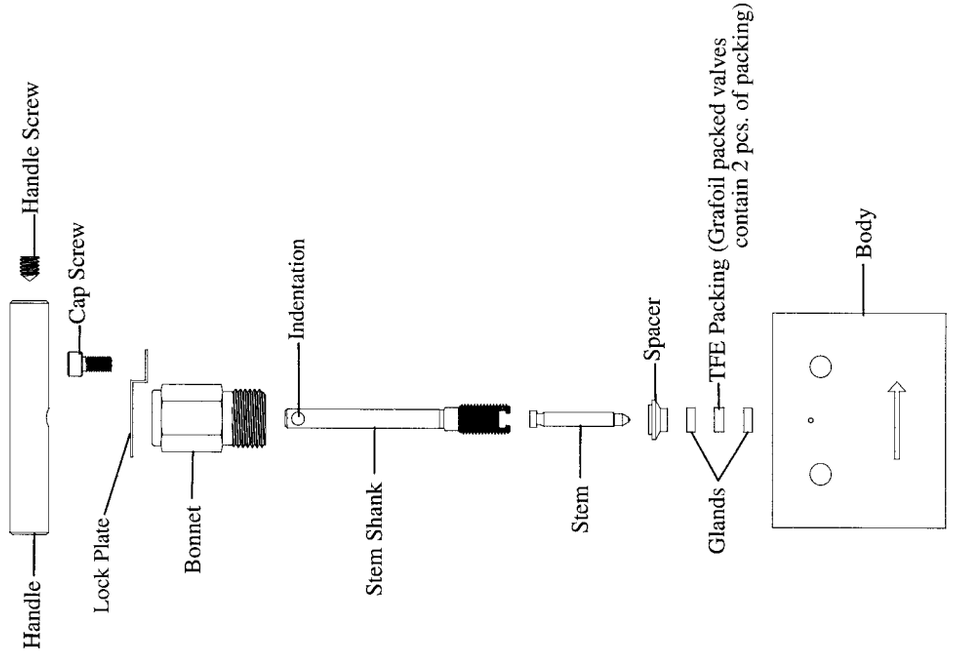
1. Loosen and remove the cap screw from the valve body.
2. Lift the lock plate away from the bonnet.
3. Using a wrench, unscrew the bonnet assembly from the valve body.
4. Remove the lock plate from the bonnet.
5. Turn the handle until the entire stem extends through the bottom of the bonnet assembly and remove the stem from the stem shank.
6. Loosen the handle screw and remove the handle from the stem shank.
7. Remove the stem shank from the bonnet.
8. Carefully remove the spacer, glands, and packing from the valve body. Be careful not to scratch or nick the packing bore.
9. Discard the old glands and packing.
10. Clean the handle, bonnet, stem shank, stem, spacer and body, removing all contaminants. Examine all parts carefully for signs of wear or corrosion.
11. Lubricate the stem shank threads with the MS-LT-CP29 provided in the kit and thread the stem shank into the bonnet.
12. Align the handle screw with the indentation in the stem shank.
13. Place the handle onto the stem shank and tighten the handle screw into that indentation.
14. Lube stem shank with MS-LT-CP29 lubricant. Place the stem back into the stem shank slot.
15. Turn the handle until the stem is completely retracted into the bonnet.
16. With the grooved end of the spacer facing the handle, slide the spacer over the stem and up toward the bonnet.
17. With the chamfered side facing toward the handle, place one gland over the stem.
    GRAFOIL PACKED VALVES: Lubricate the packing with the MS-LT-MPG lubricant provided, covering all surfaces of the packing.
18. Place the new packing over the stem and rest it against the gland.
19. With the chamfered side facing away from the handle, place the other gland on the stem.
20. Position the lock plate over the bonnet assembly.
21. Lubricate the bonnet threads with the remaining MS-LT-CP29 and install the bonnet assembly into the valve body. Be careful not to get lubricant on the stem tip.
22. Torque the bonnet according to the chart below.

Valve Type	Torque Value (in.-lbs.)
Sour Gas (-SG)	150
TFE Packed	300
Grafoil Packed	350

23. Install the lock screw through the lock plate and into the valve body and tighten.

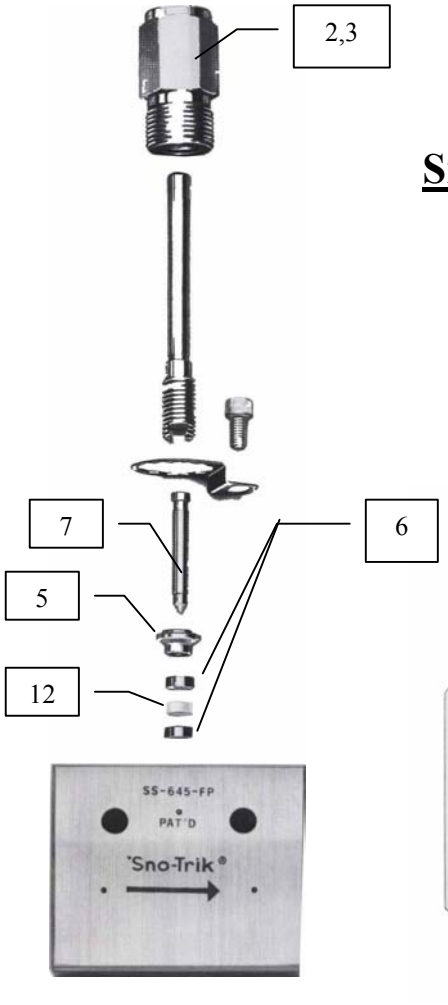
Swagelok®

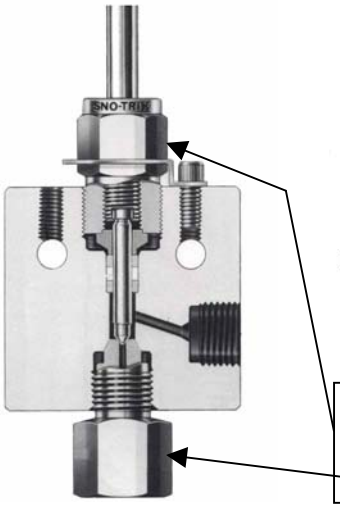
www.swagelok.com

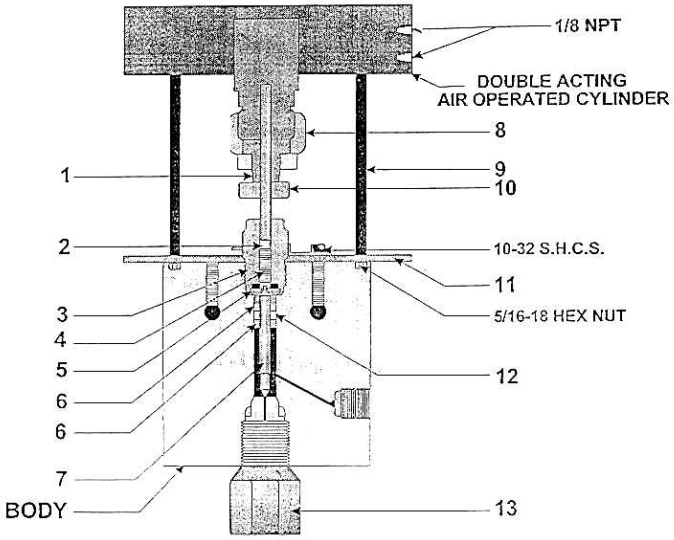


Ref: I:\GALISO\Maintenance\Snotrik.doc
Date: 22/10/1998

Sno-Trik High Pressure Valve Service







Leaks
For leaks around the bonnet nut (2) tighten nut 1/8 to 1/4 turn.
For leaks from the body hole, tighten water inlet seat (13)

Item	Description	Part Number	Item	Description	Part Number
1	Drive.Nut	81-11-0228	8	Rod Nut	81-11-0229
2	Bonnet Nut Sleeve	81-11-0231	9	Tie Rod (3 required)	81-31-0238
3	Bonnet Nut	81-11-0230	10	Lock Nut	62-33-5873
4	Actuator	81-11-0197	11	Mounting Plate	81-31-0239
5	Spacer	81-11-0208	12	Packing Gland	81-11-0132
6	Packing Ring (2 required)	81-11-0201	13	Replaceable Seat	81-110133
7	Stem	81-11-0131	14	Sno-trik repair kit, stem/seat/2 grafoil seals 81-41-0263	

1. With the valve off the test system, apply compressed air to the inlet of the Air Actuation unit until it pushes the body up to it's full extension.
2. Measure the distance between the shoulder of the tie rod and the base plate of the body. There should be a gap between 3/16ths, and 1/8ths inch.
3. To ensure that the measurement is accurate, apply slight pressure to the top of the body. Pressure must be applied while air is fed to the valve.
4. To adjust, loosen the lock nut and turn the Actuator with your fingertips. You may need to use a 3/8ths spanner to hold the drive nut from turning.
5. This measurement usually involves trial and error. Typically, you may need to pressurise and depressurise the Air operated cylinder a few times. When the proper clearance exists, release the air pressure and securely tighten the hex nuts on the tie rods.
6. Re tighten the bonnet nut, but DO NOT OVERTIGHTEN! IF there are leaks from the bonnet nut, tighten only 1/8 turn until the leak stops!

BANCROFT HINCHEY LTD, UNIT 5 BOLNEY GRANGE BUSINESS PARK, STAIRBRIDGE LANE, BOLNEY, W. SUSSEX RH17 5PA
TEL: +44(0)1444 248884 OR 07000 226276 FAX: +44(0)1444 242767 E-MAIL: GALISO@BANCROFT.CO.UK

SPECIFICATION SHEET for 12" – 24" DIAMETER JACKETS

JACKET SIZE	"H" JACKET HEIGHT	CYLINDER LENGTH MAXIMUM *	CYLINDER DIAMETER MAXIMUM	PERIMETER DIAMETER	BOLT HOLE CIRCLE	BURST DISK #(S) USED	FLOOR TO BEAM HEADROOM MINIMUM ~
12" DIAMETER JACKETS							
SHORT (42" PIPE)	48.37"	32.5"	10.0"	31.75"	18.875"	1	116.87" (NO PIT)
TALL (78" PIPE)	84.37"	68.5"	10.0"	31.75"	18.875"	1	140.87" ^
SPECIAL (LENGTH PIPE)	SPECIAL LENGTH PLUS 6.37"	SPECIAL LENGTH MINUS 9.5"	10.0"	31.75"	18.875"	1	(PIT UNKNOWN) ^
14" DIAMETER JACKETS							
SHORT (42" PIPE)	48.37"	32.5"	11.25"	33.00"	20.125"	1	116.87" (NO PIT)
TALL (78" PIPE)	84.37"	68.5"	11.25"	33.00"	20.125"	1	140.87" ^
SPECIAL (LENGTH PIPE)	SPECIAL LENGTH PLUS 6.37"	SPECIAL LENGTH MINUS 9.5"	11.25"	33.00"	20.125"	1	(PIT UNKNOWN) ^
18" DIAMETER JACKETS							
SHORT (42" PIPE)	48.37"	32.5"	15.25"	37.00"	24.125"	1 & 2	116.87" (NO PIT)
TALL (78" PIPE)	84.37"	68.5"	15.25"	37.00"	24.125"	1 & 2	140.87" ^
SPECIAL (LENGTH PIPE)	SPECIAL LENGTH PLUS 6.37"	SPECIAL LENGTH MINUS 9.5"	15.25"	37.00"	24.125"	1 & 2	(PIT UNKNOWN) ^
24" DIAMETER JACKETS							
SHORT (42" PIPE)	48.37"	32.5"	21.25"	43.00"	30.125"	1, 2 & 3	116.87" (NO PIT)
TALL (78" PIPE)	84.37"	68.5"	21.25"	43.00"	30.125"	1, 2 & 3	140.87" ^
SPECIAL (LENGTH PIPE)	SPECIAL LENGTH PLUS 6.37"	SPECIAL LENGTH MINUS 9.5"	21.25"	43.00"	30.125"	1, 2 & 3	(PIT UNKNOWN) ^

* USING NEW STYLE HEAD, NORMAL ADAPTERS & 2" WATER @ BOTTOM.
~ USING CYLINDER LENGTH MAXIMUM PLUS 36" FOR HOIST, HEAD & FREE SPACE, MINUS A PIT 48" DEEP.
^ NORMAL ABOVE FLOOR JACKET HEIGHT 36.37".