



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, D.C. 20590

APR 10 2013

Mr. Aubrey R. Campbell
Senior Dangerous Goods Safety Advisor
Global Products and Services, Baker Hughes
2001 Rankin Road
Houston, TX 77073

Ref. No. 13-0013

Dear Mr. Campbell:

This responds to your December 10, 2012 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to accumulators. In your letter, you describe and provide a picture illustrating two accumulators that are part of a "Thumper Unit" that is used at well drilling sites as an integral component of the oilfield operation. Each accumulator is offered for transport pre-charged with nitrogen gas to a maximum pressure of 2,000 psig (at 70°F). Additionally, each has a manufacturer's burst pressure rating of 12,000 psig, which is six times greater than the maximum pre-charged pressure. Based on this information, it is your understanding that the "Thumper Unit" is excepted from the requirements of the HMR as specified in § 173.306(f).

Your understanding is correct. In accordance with § 173.306(f)(1), accumulators installed in motor vehicles, construction equipment, and assembled machinery and designed and fabricated with a burst pressure of not less than five times their charged pressure at 70 °F., when shipped, are not subject to the requirements of the HMR. Based on the information you provided, the "Thumper Unit" meets the conditions for exception from the HMR.

I hope this information is helpful. If you have further questions, please contact this office.

Sincerely,

Robert Benedict
Chief, Standards Development Branch
Standards and Rulemaking Division

Der Kinderen
§173.306(f)(1)
Accumulators
13-0013



2001 Rankin Road
Houston, TX 77073
Phone: (713) 879-2658
www.bakerhughes.com

December 10, 2012

Office of Hazardous Materials Standards
Pipeline and Hazardous Materials Safety Administration,
Attn: PHH-10
U.S. Department of Transportation
East Building, 1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Re: Letter of Interpretation

Dear Office of Hazardous Materials Standards:

Baker Hughes, Inc. (BHI) requests a letter of interpretation regarding the provisions in Title 49 Code of Federal Regulation (CFR) Part 173.306(f)(1) applicable to limited quantities of compressed gases.

Specifically, BHI offers an accumulator called the "Thumper Unit" for transport with Nitrogen compressed gas, 2.2, pre-charged to a maximum of 2000 psig. The Thumper Unit (see attached photo) is used at oil and natural gas well sites as an integral component of the oilfield operation. The manufacturer's burst pressure rating on each accumulator cylinder (2) in the Thumper Unit is 12,000 psig (see attached specification sheet.) We calculated the burst pressure as six times greater than the maximum pre-charged pressure at 70 degrees. Given this calculation, we understand that the Thumper Unit, as described, is excepted for all requirements of subchapter C according to Part 173.306(f)(1). Please provide clarification of this determination.

Sincerely,

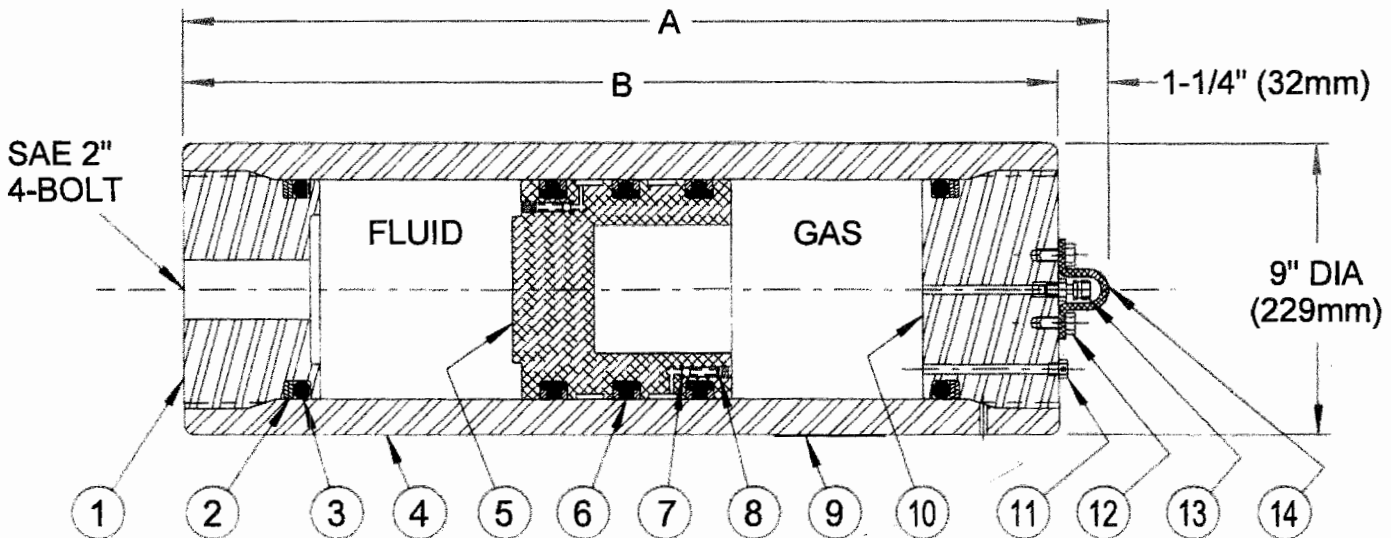
Aubrey R. Campbell
Senior Dangerous Goods Safety Advisor
Global Products and Services, Baker Hughes



090A30 Accumulators 3,000 PSI (207 Bar)



MODEL NUMBER	GAS CAPACITY		FLUID CAPACITY		DRY WEIGHT		DIMENSION			
	In. ³	Cm. ³	Gallon	Liters	Lbs.	Kg.	A		B	
							In.	mm.	In.	mm.
090A30-20NV1K	612	10,030	2.5	9	192	87	22	559	23.25	591
090A30-40NV1K	1,191	19,515	5	19	256	116	34.625	879	35.875	912
090A30-60NV1K	1,765	28,925	7.5	28	320	145	47.25	1200	48.5	1,232
090A30-80NV1K	2,347	38,465	10	38	385	175	60	1524	61.25	1,556
090A30-100NV1K	2,918	47,819	12.5	47	448	203	72.5	1841	73.75	1,873
090A30-120NV1K	3,495	57,266	15	57	513	232	85.125	2162	86.375	2,194
090A30-140NV1K	4,071	66,713	17.5	66	576	261	97.75	2483	99	2,515
090A30-160NV1K	4,648	76,160	20	76	641	291	110.375	2804	111.625	2,835
090A30-200NV1K	5,806	95,148	25	95	770	349	135.75	3499	137	3,480
090A30-240NV1K	6,959	114,042	30	114	898	407	161	4089	162.25	4,121
090A30-320NV1K	9,265	151,831	40	151	1,154	523	211.5	5372	212.75	5,404
090A30-400NV1K	11,571	189,619	50	189	1,411	640	262	6655	263.25	6,687



GENERAL DESIGN DATA

MAXIMUM WORKING PRESSURE	3,000 PSI	(207 Bar)
MAXIMUM PROOF PRESSURE.....	4,500 PSI	(310 Bar)
MINIMUM BURST PRESSURE.....	12,000 PSI	(827 Bar)
OPERATING TEMPERATURE (Buna/Nitrile).....	-20° TO +200° F	(-28° to 93° C)

STANDARD SEAL MATERIAL FOR PETROLEUM BASE OIL.
SEALS AVAILABLE FOR OTHER FLUIDS.

NOTE: Optional porting/mounting configurations available on request

090A30_1112

090A30 Accumulators 3,000 PSI (207 Bar)



090A30 SERIES PARTS BREAKDOWN (CATALOG STANDARD 090A30-*NV1K)

ITEM NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	HG61MB23-K	HEAD, FLUID, 2" SAE 4 BLT CODE 61	1
2	SB4T112	SEAL, BACKUP, TEFLON	2
3	SO4N112	SEAL, O-RING, HEAD, BUNA-N	2
4	C72TA61-176	CYLINDER, 090A30-20, 2.5 GALLON, 9 LITER	1
	C72TA61-277	CYLINDER, 090A30-40, 5 GALLON, 19 LITER	
	C72TA61-378	CYLINDER, 090A30-60, 7.5 GALLON, 28 LITER	
	C72TA61-480	CYLINDER, 090A30-80, 10 GALLON, 38 LITER	
	C72TA61-580	CYLINDER, 090A30-100, 12.5 GALLON, 47 LITER	
	C72TA61-681	CYLINDER, 090A30-120, 15 GALLON, 57 LITER	
	C72TA61-782	CYLINDER, 090A30-140, 17.5 GALLON, 66 LITER	
	C72TA61-883	CYLINDER, 090A30-160, 20 GALLON, 76 LITER	
	C72TA61-1086	CYLINDER, 090A30-200, 25 GALLON, 95 LITER	
	C72TA61-1288	CYLINDER, 090A30-240, 30 GALLON, 114 LITER	
	C72TA61-1692	CYLINDER, 090A30-320, 40 GALLON, 151 LITER	
	C72TA61-2096	CYLINDER, 090A30-400, 50 GALLON, 189 LITER	
5	P61MH33T	PISTON, ALUMINUM	1
6	SB4T113	SEAL, BACKUP, TEFLON	6
	ST4N114	SEAL, PISTON, "T" SEAL, BUNA-N	3
7	3A-175	BALL, CHECK VALVE	2
	SO1V.114	SEAL, O-RING, CHECK VALVE, VITON®	2
8	3A-24	SCREW, RETAINING, CHECK VALVE	2
	4A-135	SPRING, CHECK VALVE	2
9	NP-300	NAMEPLATE	1
10	HG61MB23-1	HEAD, GAS, ½-20	1
OPT	DR-ASSY-32	RUPTURE DISK ASSM (OPTIONAL) 3200 PSI	1
12	B-.37CB16S6-B	BOLT, CARBON STEEL, 3/8-16 x ¾	2
13	3A-283	SS VALVE, GAS, 3K, ½-20 UNF-3A	1
14	3A-754D	GUARD, VALVE, ALUMINUM	1

(*DENOTES INSERTION POINT FOR UNIT VOLUME DESIGNATION, i.e., 80 = 10 GALLON VOLUME)

COMPLETE SEAL KITS

NEW PART NUMBER	TYPE	OLD PART NUMBER
SK090A30-NT	BUNA-N	9A30-G40T-NST
SK090A30-VT	VITON®	9A30-G40T-ETT
SK090A30-ET	EPR	9A30-G40T-HTT

Specify seal material by selecting appropriate material code – "N"= Buna-N; "B"= Butyl; "E"= EPR; "V"= FKM (Viton®)

090A30_1112