

Troubleshoot error 468

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

This function was introduced in the 2011 software update to reduce lost production without losing visibility of potential accumulator problems. This is done by eliminating the need for manual reset if pitch accumulator pressure differential is less than 50 bar. If the differential exceeds 50 bar, error [468](#) 'Pitch ac. Pressure mismatch' is raised.

If error 403 is being raised but error 468 is not, you have probably caught the problem in the early stages. Troubleshoot the turbine with the solutions from the error 468 guide.

Locate and repair leak

Does this solve the problem?

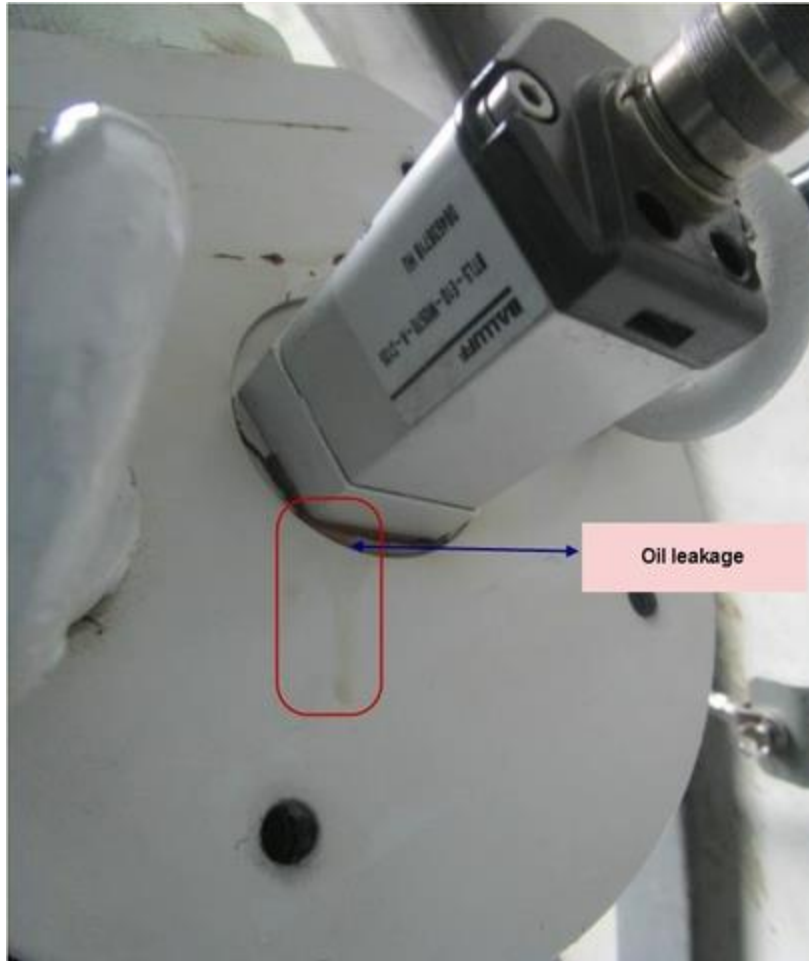
1] Yes

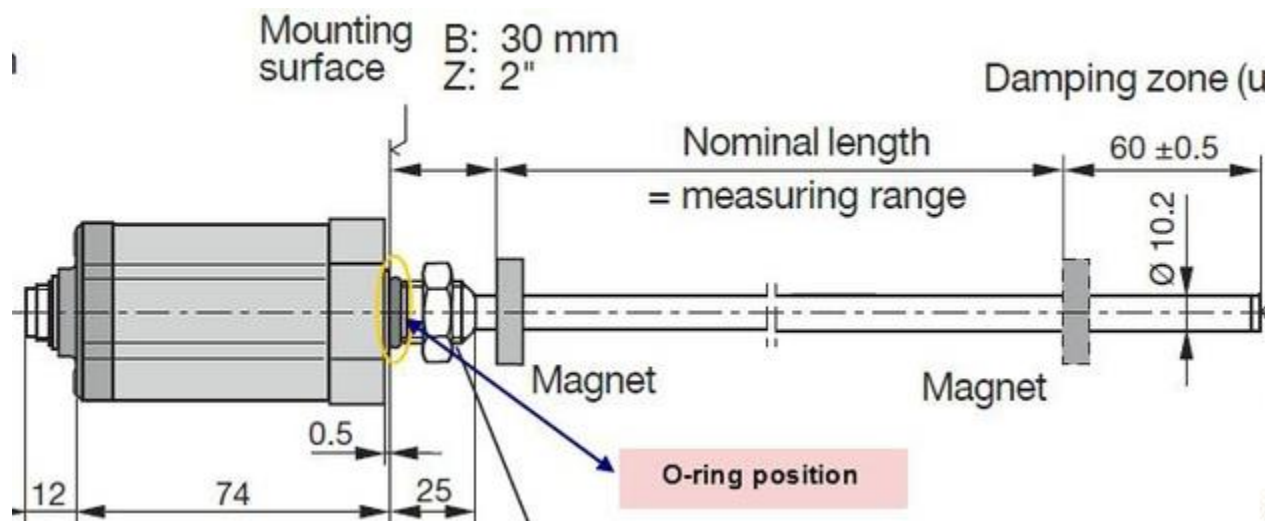
2] No

3] I don't know

- **Explanation**

Check for oil leakage from pitch position sensor (Balluf sensor). If oil leakage noticed fix the same by replacing the seal (O- ring) as shown below;





Relevant Spare parts	
Description	Item No.
O-RING 2,10 x 15,40 F/LA41	60065665

CAUTION: Oil under pressure on A side of ram

Oil in the hydraulic system is under high pressure.

If the pressure is not relieved prior to removing the Balluff sensor, oil splashes or oil vapor will occur.

Ω **Do not** open with pressure on.

Ω It is important to start by opening the 222 valves and then screwing one end of a measuring hose onto test nipple MX2 which is the one without pressure.

Ω Screw the other end onto MA.

Test the pitch cylinder for internal leakage:

Cylinder Internal Leakage at Stop Position:

The pitch cylinder is tested at Stop position by bypassing valve 240. This is done by test hoses.

1. Fully extend (Stop) pitch cylinder.
2. Discharge accumulators by opening valve 222.

Close it when oil stops flowing.

3. MSP and MA are connected by test hose – **connect test hose to MSP before connecting it to MA.**
4. Activate valve 215.
5. Activate valve 210.
6. Connect MB to bucket / measuring glass.
7. Charge accumulators above 200 bar.
8. Record leakage at MB.

NOTE: The pitch cylinder has internal leakage if oil is constantly leaking from MB (if the pitch cylinder is tight at the next test it is also possible that leakage is from valve 226).

Cylinder Internal Leakage at Run Position:

The pitch cylinder is tested at the most frequent run position ($-0.5^\circ = \sim 5$ mm from fully retracted) by connecting B-side to accumulators and isolating A-side.

1. Fully extend (Stop) Pitch cylinder.
2. Discharge accumulators by opening valve 222. Close the valve when oil stops flowing.
3. Pitch cylinder is positioned at pitch angle -0.5°
4. Activate valve 215.
5. Deactivate valve 210 by removing connector.

6. Start pump by commanding pitch towards run.

7. Observe cylinder.

If the pitch cylinder is drifting to run then valve 230 is leaking. If the pitch cylinder is drifting to stop then the cylinder is leaking.

If the pitch cylinder is found to be leaking internally, inspect/replace the piston/piston seals in accordance with document: 0023-2047- Pitch Actuator Piston Rod Replacement, NM72/82, V82.

Relevant Spare parts	
Description	Item No.
Pre-assembled piston rod (Bosch Rexroth)	60110963
Actuator seal kit (STD + Arctic Bosh Rexroth)	60110956
HYDR CYL ROD-PISTON 125/90 (Parker)	60114035
Hydr Cyl Piston Seal Kit Ø 125 (Parker)	60114089

Perform a visual inspection of the back of the pitch cylinder bore.

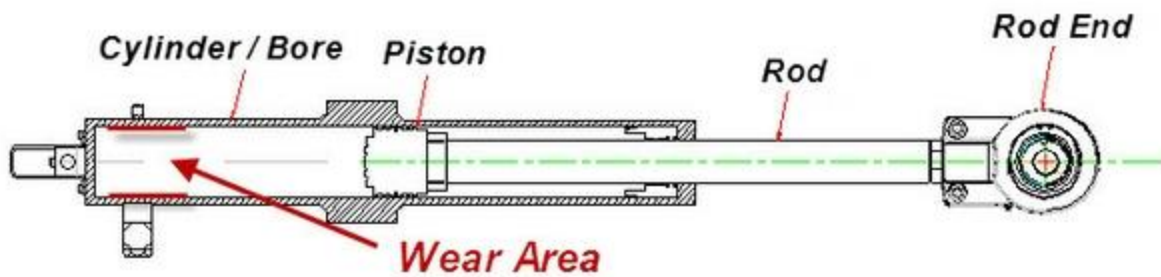
Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**



The back 250 mm of the pitch cylinder bore may be susceptible to excessive wear. This area of the cylinder is where the piston operates during production. When excessive wear occurs in the cylinder barrel, the piston seals are also subjected to accelerated wear, and internal leakage will occur in both run and stop positions. The effect of this leakage is excessive pump run time during operation as well as during stop. In the event of a pump failure, grid outage or certain turbine faults, pressure within the accumulators will bleed off, and blades may be at risk of being pushed into the run position under high wind conditions. Check the back of the bore for abnormal wear.

Actions:

Refer to DMS doc 0059-1574 for inspection instructions and criteria for running the turbine if wear is found.

Relevant documentation	
Description	DMS No.
V-82 Pitch Ram Bore inspections	0059-1574
V82 Rexroth pitch ram installation on a Parker pitch system	0059-7339

Relevant CIM case

CIM case	Task list	Service Message
3699	23210	0059-3323 Evo2 Pitch Cylinder Wear

Replace the defective valve

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Check the below valve positions.

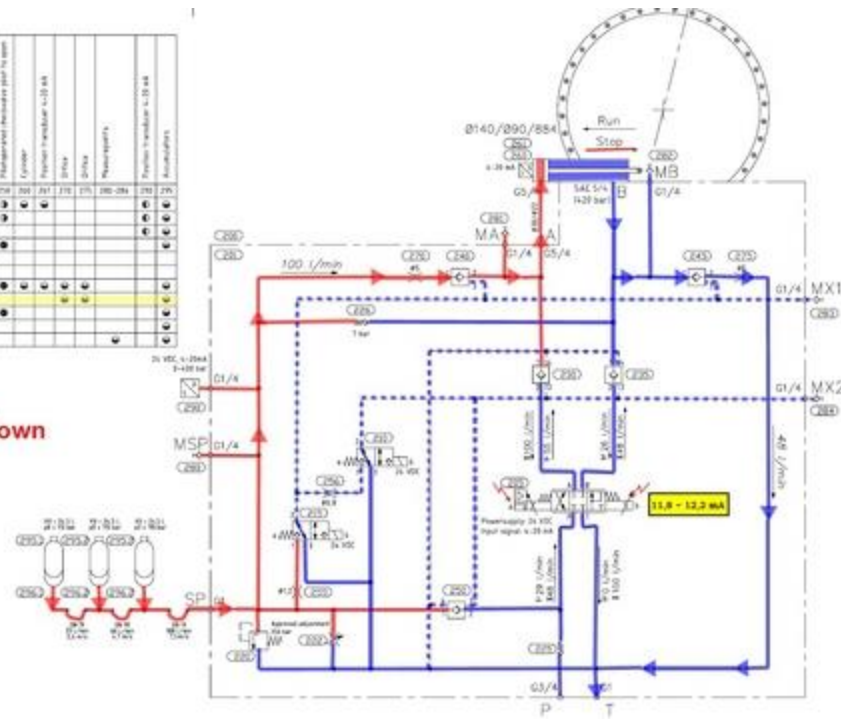
Swap the valves one by one in to other manifolds and check valve operation.

If the fault shifts to other blades the valve is likely defective. If not continue to check the other valves.

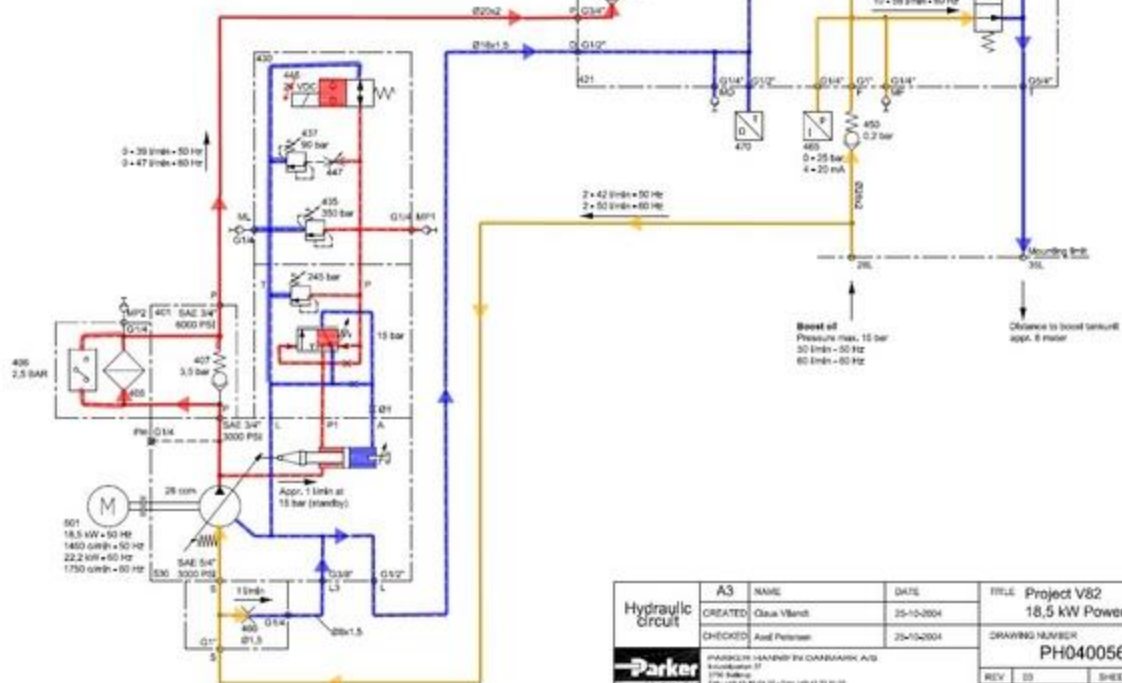
First analysis and study this error occurrence that whether its triggered from normal turbine operation or during grid drop or etc... Based on this you can trace the respective hydraulic circuits and components

Rexroth:

		E		F		G		H		I		J		K		L		M		N		O		P		Q		R		S		T		U		V		W		X		Y		Z		AA		AB		AC		AD		AE		AF		AG		AH		AI		AJ		AK		AL		AM		AN		AO		AP		AQ		AR		AS		AT		AV		AW		AX		AY		AZ		BA		BB		BC		BD		BE		BF		BG		BH		BI		BJ		BK		BL		BM		BN		BO		BP		BQ		BR		BS		BT		BV		BW		BX		BY		BZ		CA		CB		CC		CD		CE		CF		CG		CH		CI		CJ		CK		CL		CM		CN		CO		CP		CQ		CR		CS		CT		CV		CW		CX		CY		CZ		DA		DB		DC		DD		DE		DF		DG		DH		DI		DJ		DK		DL		DM		DN		DO		DP		DQ		DR		DS		DT		DV		DW		DX		DY		DZ		EA		EB		EC		ED		EE		EF		EG		EH		EI		EJ		EK		EL		EM		EN		EO		EP		EQ		ER		ES		ET		EV		EW		EX		EY		EZ		FA		FB		FC		FD		FE		FF		FG		FH		FI		FJ		FK		FL		FM		FN		FO		FP		FQ		FR		FS		FT		FV		FW		FX		FY		FZ		GA		GB		GC		GD		GE		GF		GG		GH		GI		GJ		GK		GL		GM		GN		GO		GP		GQ		GR		GS		GT		GV		GW		GX		GY		GZ		HA		HB		HC		HD		HE		HF		HG		HH		HI		HJ		HK		HL		HM		HN		HO		HP		HQ		HR		HS		HT		HV		HW		HX		HY		HZ		IA		IB		IC		ID		IE		IF		IG		IH		II		IJ		IK		IL		IM		IN		IO		IP		IQ		IR		IS		IT		IV		IW		IX		IY		IZ		JA		JB		JC		JD		JE		JF		JG		JH		JI		IJ		JK		KL		KM		KN		KO		KP		KQ		KR		KS		KT		KV		KW		KX		KY		KZ		LA		LB		LC		LD		LE		LF		LG		LH		LI		LJ		LK		LL		LM		LN		LO		LP		LQ		LR		LS		LT		LV		LW		LX		LY		LZ		MA		MB		MC		MD		ME		MF		MG		MH		MI		MJ		MK		ML		MM		MN		MO		MP		MQ		MR		MS		MT		MV		MW		MX		MY		MZ		NA		NB		NC		ND		NE		NF		NG		NH		NI		NJ		NK		NL		NM		NN		NO		NP		NQ		NR		NS		NT		NV		NW		NX		NY		NZ		OA		OB		OC		OD		OE		OF		OG		OH		OI		OJ		OK		OL		OM		ON		OO		OP		OQ		OR		OS		OT		OV		OW		OX		OY		OZ		PA		PB		PC		PD		PE		PF		PG		PH		PI		PJ		PK		PL		PM		PN		PO		PP		PQ		PR		PS		PT		PV		PW		PX		PY		PZ		QA		QB		QC		QD		QE		QF		QG		QH		QI		QJ		QK		QL		QM		QN		QO		QP		QQ		QR		QS		QT		QV		QW		QX		QY		QZ		RA		RB		RC		RD		RE		RF		RG		RH		RI		RJ		RK		RL		RM		RN		RO		RP		RQ		RR		RS		RT		RV		RW		RX		RY		RZ		SA		SB		SC		SD		SE		SF		SG		SH		SI		SJ		SK		SL		SM		SN		SO		SP		SQ		SR		SS		ST		SV		SW		SX		SY		SZ		TA		TB		TC		TD		TE		TF		TG		TH		TI		TJ		TK		TL		TM		TN		TO		TP		TQ		TR		TS		TT		TV		TW		TX		TY		TZ		UA		UB		UC		UD		UE		UF		UG		UH		UI		UJ		UK		UL		UM		UN		UO		UP		UQ		UR		US		UT		UV		UW		UX		UY		UZ		VA		VB		VC		VD		VE		VF		VG		VH		VI		VJ		VK		VL		VM		VN		VO		VP		VQ		VR		VS		VT		VV		VW		VX		VY		VZ		WA		WB		WC		WD		WE		WF		WG		WH		WI		WJ		WK		WL		WM		WN		WO		WP		WQ		WR		WS		WT		WV		WW		WX		WY		WZ		XA		XB		XC		XD		XE		XF		XG		XH		XI		XJ		XK		XL		XM		XN		XO		XP		XQ		XR		XS		XT		XV		XW		XX		XY		XZ		YA		YB		YC		YD		YE		YF		YG		YH		YI		YJ		YK		YL		YM		YN		YO		YP		YQ		YR		YS		YT		YV		YW		YX		YZ		ZA		ZB		ZC		ZD		ZE		ZF		ZG		ZH		ZI		ZJ		ZK		ZL		ZM		ZN		ZO		ZP		ZQ		ZR		ZS		ZT		ZV		ZW		ZX		ZY		ZZ	
Function	Feature	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

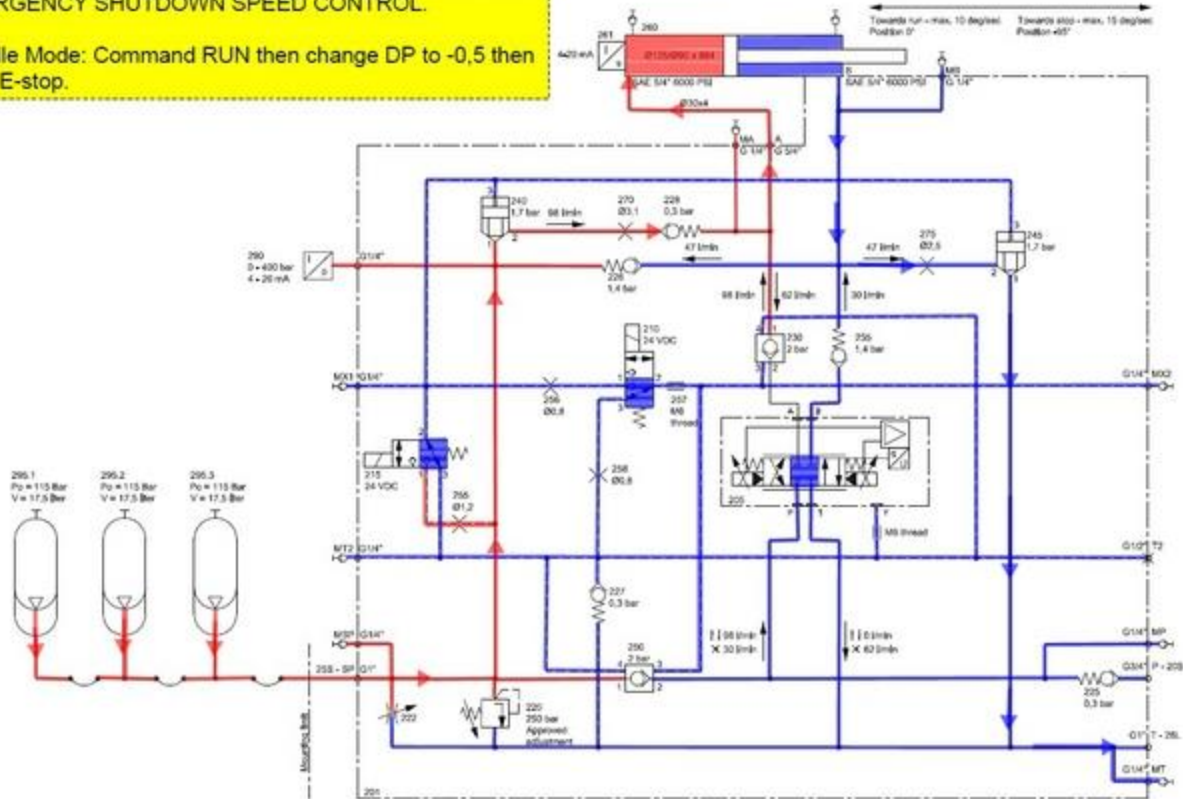


Hub Manual Mode: Press "R" then pitch to run, stop, pulse or charge.



	A3	NAME	DATE	TITLE
	CREATED	Quia Vlanst	25-10-2004	Project V82 18,5 kW Powerunit
	CHECKED	Axel Petersen	25-10-2004	DRAWING NUMBER PH040056-03
	PARKER IS HANDED BY DANMARK A/S Frederiksborg 31 3700 Rødovre			REV 00 SHEET 1 OF 1

Nacelle Mode: Command RUN then change DP to -0,5 then push E-stop.



Feeder pump & main pump stopped

	A3	NAME	DATE	TITLE
	CREATED	Clara Vlench	08-09-2004	Project V8 Pitachuator Ø125
	CHECKED	Andi Petrusen	08/09/2004	DRAWING NUMBER
 PARKER HANIFIN DANMARK A/S Horsens DK				PH040057

PARKER SYSTEM -PITCH MANIFOLD:

Relevant spare parts

Description	Item No.	Pos.
LOGIC ELEMENT PIL. OPERATED	60111630	240, 245

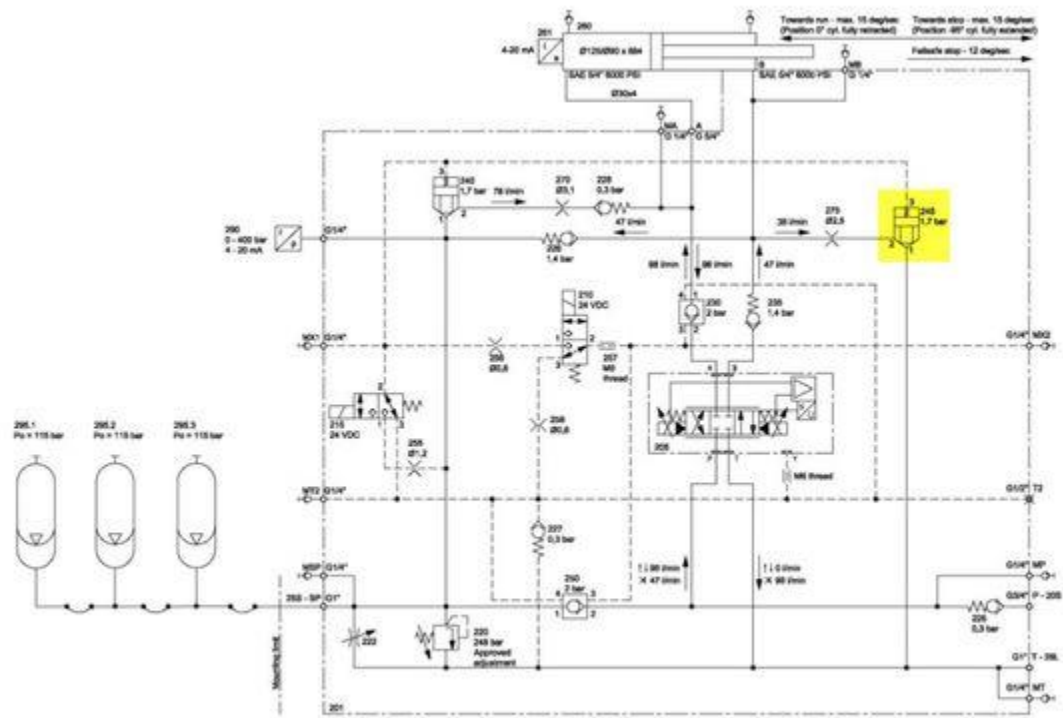


Figure 13-4: Fast Active Stall system (Parker).



REXROTH SYSTEM -PITCH MANIFOLD:

Relevant spare parts		
Description	Item No.	Pos.
VALVE CHECK PILOT COFA-XAN A30	60096493	240, 245

Figure 13-3: Fast Active Stall System (Bosch-Rexroth).