

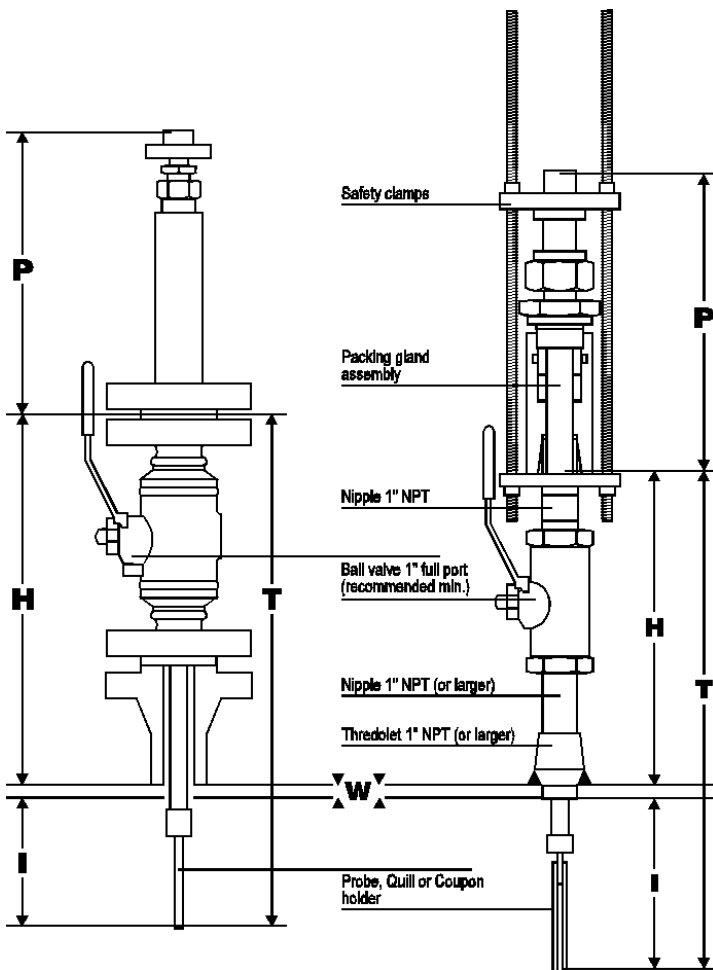
RETRACTABLE ACCESS SYSTEM RC SERIES

An extremely reliable access system widely used by the Petrochemical and Oil Production industries

cormon

CMEF 011.1

A simple and versatile method of access to a process stream for on-line insertion and removal of probes, coupon holders, injection and sampling quills. Suitable for service at 1000 (68 bar) or 1500 psi (102 bar) with options for additional back up seals in gas applications. The operating temperature of 260°C may be extended to 450°C by the use of graphite packings provided the insert component is also compatible.



The system comprises a Packing Assembly, a Probe or Insert, a Safety Clamp and a branch assembly with valve.

The Probe or Insert has a long 5/8" diameter (15.8 mm) stainless steel body, which can slide through the Packing seal while retaining pressure integrity.

The Packing Assembly is mated to the ambient side of a valve and branch so that when the valve is open the insert can be pushed through, into the process stream. The reverse of this process allows the insert to be retracted, the valve closed and the Packing Assembly removed for servicing. The insert is secured in place with an additional plate and rod safety clamp. For operating pressures above 150 psi (10 bar) it is advisable to use a Retractor Tool providing mechanical advantage during the insertion and retraction process (data sheet CMEF 015).

Packing Assemblies may be 1" FNPT or flanged, Body material is usually 316 stainless steel, but forged carbon steel A105 is available for flanged packings. Seals are usually PTFE.

The Retractable system is often fitted to an existing branch assembly. It is most important that the internal clearance

diameter of any existing branch assembly is clearly identified before ordering equipment. Confusion between Nominal and Full-Bore equipment can cause installation problems.

The following pages give detailed product code and length calculation data for the access system. For full details of the probe/insert range consult separate data sheets:

- Electrical Resistance Probes : CMEP 005
 - Linear Polarisation Resistance Probes: CMEP 020
 - Injection & Sampling : CMEF 017
 - Weight Loss Coupon Holders: CMEC 003
- If in doubt consult Cormon Sales.**

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PACKING GLAND WITH NPT THREADED BRANCH CONNECTION

R						
Retractable	Service	Body	Seals	Options	Body Material	
RC Series	C - Standard 1000 psi x 5/8" probe/holder D - Gas service 1000 psi x 5/8" probe/holder E - 1500 psi x 5/8" probe/holder - also gas service L - 1000 psi x 1/2" probe/holder	P - Standard 1" FNPT body,	G - PTFE packings H - graphite packings - (<i>for C type only</i>)	0 - No side valve B - Bleed type side valve S - Sample type side valve 1/4" NPT	B03 - 316 stainless steel body	

PACKING GLAND WITH FLANGED BRANCH CONNECTION

R								
Retractable	Service	Body	Seals	Options	Nominal Bore	Rating	Gasket type	Body Mtl.
RC Series	C - Standard 1000 psi x 5/8" probe/holder D - Gas service 1000 psi x 5/8" probe/holder E - 1500 psi x 5/8" probe/holder - gas service	F - Flanged body	G - PTFE packings H - graphite packings (<i>for C type only</i>)	0 - No side valve B - Bleed type side valve S - Sample type side valve 1/4" NPT	11 - 1" nominal bore 15 - 1 1/2" nominal bore 20 - 2" nominal bore	15 - 150# 30 - 300# 60 - 600#	RF - Raised face RJ - Ring type joint	B03 - 316ss A10 - A105 carbon steel

SPARES & ACCESSORIES

RS		
Retractable	Group	Item
RC Series- Spare part or accessory	PG - spare for packing gland	SK - chevron packing set PTFE (C, D & E type glands) 5/8" dia. insert SG - packing set graphite (high temp.) SL - chevron packing set PTFE (L type gland) 1/2" dia. insert SO - O ring kit for D type gland SE - O ring & backup ring kit for E type gland LK - Locking ring set -brass for 5/8" dia. insert LL - Locking ring set - brass for 1/2" dia. insert.
	PR - Safety plate & rod clamp assy - 1" NPT gland PF - Safety plate & rod clamp assy for flanged gland	12 - For 12" nominal insert 18 - For 18" nominal insert 24 - For 24" nominal insert 30 - For 30" nominal insert 36 - For 36 " nominal insert

NIPPLES

GMA	RC		
General mechanical accessory for RC series retractable	Type	Size	
	SN - 316 stainless steel nipple CN - Carbon steel A105 nipple	11 - 1" X 1" NPT 4" long 15 - 1" x 1.5" NPT swaged 12 - 1" x 2" NPT swaged 55 - 1.5" x 1.5" NPT 4" long 22 - 2" x 2" NPT 4" long	

Select access assemblies with care. Allow clearance for head diameter of probe/insert selected. All Cormon supplied valves are full bore and all nipples and fittings Sched. 80. 1.5" Valve allows 32 mm head to pass. Bolt and gasket sets are not supplied with flanged packings. Order separately if required CMEF 011.2

VALVES & FITTINGS

GMA	RC								
General mechanical accessory for RC series retractable	Type	Size/mounting		Material/class		Flange		Material	
	V - Valve	N1 - Valve 1" NPT full bore N2 - 1.5" NPT full bore N3 - 2" NPT full bore		CS - Carbon steel with St.Stl. trim. Teflon seats SS - St.Stl. body/trim. Teflon seats		NPT valves are class 600 minimum			
		F1 - 1" flanged full bore F2 - 1.5" flanged full bore F3 - 2" flanged full bore		15 - 150# 30 - 300#		RF - Raised face		CS - Carbon steel with stainless trim. Teflon seats	
	W - Weld fitting	B1 - 1" flanged full bore wedlock B2 - 1.5" flanged full bore weldneck B3 - 2" flanged full bore weldneck		60 - 600#		RJ - Ring type joint		SS - Stainless steel body/trim. Teflon seats	
T1 - Thredolet 1" NPT T2 - Thredolet 1.5" NPT T3 - Thredolet 2" NPT		A10 - Carbon steel A105							

TIPS FOR USERS AND SPECIFIERS

- Select the probe or insert to be used and specify a suitable branch diameter
- When possible specify a larger branch diameter to ensure that a full range of inserts and probes may be used later if necessary.
- Always confirm the minimum ID clearance of any existing branch equipment you may consider using.
- Ensure that the sensor portion or tip of the probe or insert will reach the required position. Sensor lengths are included in the tables on the back of this data sheet.
- Ensure that there is sufficient clearance to install (fully withdraw) the probe or insert.
- Check that the selected materials are compatible with the process and pipework . All Cormon materials are certified to BS EN 10204 3.1b and NACE MR-0175-97.
- Always provide for installation and operation training on the equipment. Contact Cormon Sales for material and assistance.

- Be cautious when using long retractable probes or inserts in fast flowing gas or liquid streams. The combined effects of vibration where Natural and Wake frequencies coincide can cause swift mechanical failure. The Cormon engineering team can provide assistance in calculating these frequencies and with measures to avoid their effects. Email address : Engineering@cormon.com
- Specify packings with Bleed valves for higher pressures. For sour gas service specify D or E type packings with Sample valve. A hose may be attached to the valve allowing gas to be bled off in safety using a trap.
- Valves and probes may be damaged if an attempt to close the valve is made before the probe is fully retracted. A warning sign is often enough to prevent damage.
- Be prepared to replace packing seals at sites where probes are retracted frequently. Order spare sets with all new equipment .

CMEF 011.3

Length calculation method

The minimum overall length of a probe is the sum of the height of the packing assembly (P) plus the travel distance to retract the probe so that the valve may be closed (T). **P+T**

T is equal to the sum of the depth of insertion (I), the wall thickness of the pipe (W) and the height of the branch assembly (H). **T = I+W+H**

The value of P is 170 mm for NPT packing glands and 280 mm for flanged packing glands. When the minimum length in millimeters overall is known, the next highest overall length may be found from the group in the table for the insert type to be used, and its nominal insert equivalent entered as the length component of the order code. See individual data sheets for details of probes and inserts.

Installation clearance above pipe wall is calculated by **H + T + P + 100 mm**

PROBE / INSERT TYPE	LENGTH OVERALL	CODE (NOMINAL INSERT)	SENSOR LENGTH	DIM B	DIM C	PROBE / INSERT TYPE	LENGTH OVERALL	CODE (NOMINAL INSERT)	SENSOR LENGTH	DIM B	DIM C
TL	587	12	100	417	307	PF & PK type	551	12	38	381	271
	737	18	100	567	457		701	18	38	531	421
	887	24	100	717	607		851	24	38	681	571
	1037	30	100	867	757		1001	30	38	831	721
	1187	36	100	1017	907		1151	36	38	981	871
TS	542	12	50	372	262	STRIP	522	12	35*	352	242
	692	18	50	522	412		672	18	35*	502	392
	842	24	50	672	562		822	24	35*	652	542
	992	30	50	822	712		972	30	35*	802	692
	1142	36	50	972	862		1122	36	35*	952	842
WT/WL	510	12	40	340	230	DISC	499	12	8	329	219
	660	18	40	490	380		649	18	8	479	369
	810	24	40	640	530		799	24	8	629	519
	960	30	40	790	680		949	30	8	779	669
	1110	36	40	940	830		1099	36	8	929	819
FL (ER & LPR)	530	12	0	360	250	INJECTN. Quills & Perpend. Nozzles	520	12	N/A	350	240
	680	18	0	510	400		670	18	N/A	500	390
	830	24	0	660	550		820	24	N/A	650	540
	980	30	0	810	700		970	30	N/A	800	690
	1130	36	0	960	850		1120	36	N/A	950	840
BAND	542	12	25	372	262	INJECTN. Parallel Nozzles Only	499	12	N/A	329	219
	692	18	25	522	412		649	18	N/A	479	369
	842	24	25	672	562		799	24	N/A	629	519
	992	30	25	822	712		949	30	N/A	779	669
	1142	36	25	972	862		1099	36	N/A	929	819
PE type	527	12	38**	357	247	* LENGTH OF MOUNTING BLADE ** SUBTRACT 7 MM FOR REDUCED ELECTRODES For any given length, Dim B is the distance below the NPT packing gland and Dim C is the distance below the flanged packing gland. These are equivalent to (T) in the above method					
	677	18	38**	507	397						
	827	24	38**	657	547						
	977	30	38**	807	697						
	1127	36	38**	957	847						

Bore Size	Flanged Valves			NPT Valves	Parallel Nipples	Thred- olets	Flanged Branches		
	#150	#300	#600				#150	#300	#600
1"	130	170	220	110	70	32	85	90	95
1.5"	170	190	250	140	68	38	95	100	110
2"	180	220	320	150	66	45	105	110	120

Dimensions in mm are nominal height when assembled. All nipples are based on 4" length overall less thread make-up. For swaged nipples subtract 1 mm from equivalent lower size parallel nipple.

DIMENSIONS VARY - USE THIS DATA AS A GUIDE ONLY

CMEF 011.4