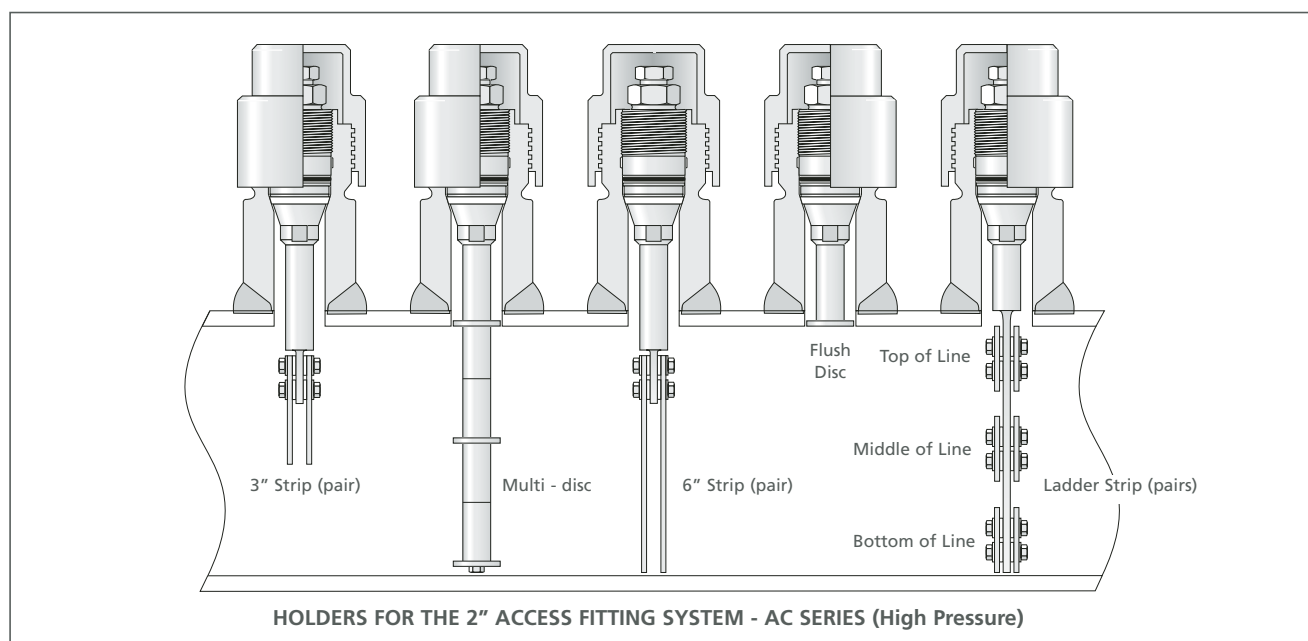


## WEIGHT LOSS COUPONS AND COUPON HOLDERS

A comprehensive range of weight loss coupons and holders covering applications in oil & gas, refinery and processing, water treatment and general industry.

### PRINCIPLE OF OPERATION

A material sample of known composition, density, size and weight is exposed to an environment for a period of time after which it is recovered, cleaned and weighed. The difference in weight before and after exposure (the weight loss) is used to calculate the volume of material lost. The loss relative to the surface area gives a figure for average depth of material lost. This result may be annualised relative to the exposure time, resulting in a rate of loss per year, usually expressed as Mills Per Year (MPY) or Millimetres Per Year (MMPY). Relevant standards are NACE RP0775 or ASTM G1. This data sheet is principally concerned with the monitoring of process systems using metallic samples but other materials may be used such as GRP.



### SELECTING WEIGHT LOSS COUPONS AND HOLDERS

Weight loss coupons are usually mounted on a rigid holder using a method that galvanically isolates the coupon from its mounting. They may be mounted singly, in pairs or in multiple pairs. The selection of coupon and holder configuration is made by the user on the basis of the process conditions, anticipated corrosion mechanism and availability of access. The results obtained may be radically influenced by these factors and careful consideration must be given to the selection process. Please contact Cormon Technical Services for advice.

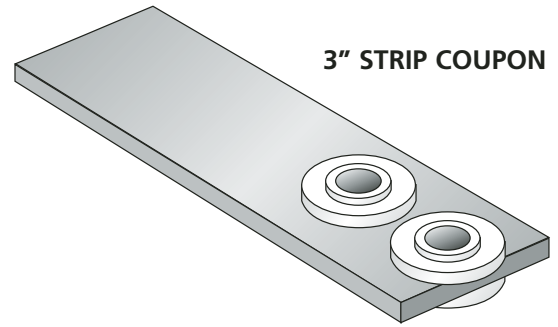
### COUPON HOLDERS

Holders are generally divided into 3 groups:

- 1) Assemblies for use with the 2" high pressure (AC Series) access fitting – retrievable on-line up to 6000 psi
- 2) Assemblies for use with a packing gland assembly (RC Series) – retractable on-line through a valve up to 1500 psi.
- 3) Fixed assemblies for threaded, flanged and hub type mountings – not accessible on-line. Most coupon holders in the Cormon range are manufactured from 316 stainless steel with nylon insulators. Other materials may be requested.

## COUPON CONFIGURATIONS

**Strip coupons** are usually mounted in pairs and placed in or partially in the process flow. **Disc coupons** are usually mounted flush with the wall of the pipe (or vessel) so that conditions are as close as possible to those at the process/containment interface. **Scale coupons** are strip shaped with a number of different sized holes so that scaling tendency can be assessed. **Weld coupons** are sections of a weld with HAZ and parent metal that are used to assess preferential weld corrosion. **Stressed coupons** have a known amount of bending stress applied by a special mounting arrangement. They are used to assess stress cracking tendency.

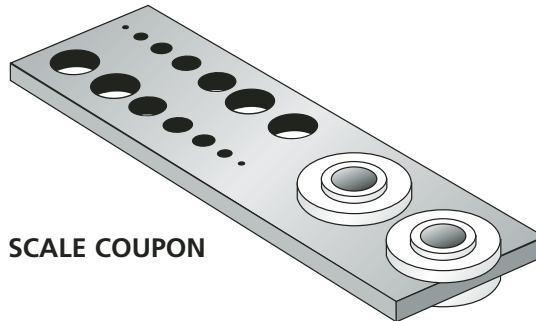


**3" STRIP COUPON**

The most widely used configurations are Strip and Disc types. Coupons are supplied cleaned, weighed and serial numbered in sealed, corrosion inhibiting envelopes complete with a set of insulators.



**DISC COUPON**



**SCALE COUPON**

## AC SERIES HOLDERS

AC series holders attach to a Solid Plug assembly (see data sheet CMEF007) by means of a left-hand thread. Four main holder types are: Strip, Disc, Ladder Strip and Ladder Disc. To calculate the required holder length, enter values below according to fitting type (flarweld or flange) and calculate Base Length.

FLARWELL FITTING		FLANGED FITTING
Fitting height mm		Fitting height mm
Weld gap (1.6mm)		Branch height (flange face to pipe OD)
Pipe wall thickness		Pipe wall thickness
		Flange gasket allowance
<b>SUB TOTAL</b>		<b>SUB TOTAL</b>
Less constant	(64)	
Base length in mm	XXX	

Adjust Base Length to type of holder and pipe diameter using table below

Incorporate calculated length in mm into product code. **Example PCO AC 125 ST B03**

### Notes

- 1) Twin strip top of line is based on half of effective length of coupon projecting into line.
- 2) Pipe ID must be actual not nominal
- 3) 3 pair ladder holders must be at least 258 mm long

Flush Disc	Base Length less 008
Twin strip 3" top of line (1)	Base Length less 020
Twin strip 3" middle of line	Base Length less 020 plus 1/2 pipe ID (2)
Twin strip 3" bottom of line	Base Length less 050 plus pipe ID (2)
Twin strip 6" top of line (1)	Base Length less 060
Twin strip 6" middle of line	Base length less 060 plus 1/2 pipe ID (2)
Twin strip 6" bottom of line	Base length less 130 plus pipe ID (2)
Ladder 2" strip, 2 pair & 3 pair (3)	Base length less 10 plus pipe ID (2)

## ADJUSTABLE DISC COUPON HOLDERS

Adjustable length holders for disc coupons are available. Disc holders are supplied in standard sizes as per table. The 3 digit standard length number is inserted into the product code.

Standard length	070	105	140	175	210
Range including coupon	080-115	115-150	150-185	185-220	220-255

## STABILISED LADDER COUPON HOLDERS

In extreme flow conditions it may not be possible to deploy long holders without stabilising the outer end against the opposite pipe wall. A compression spring and insulator are used to land the end of the holder and create a bearing pressure. Please consult our design team if planning to install long ladder strip coupon holders in high velocity flow lines.

## RETRACTABLE (RC SERIES) COUPON HOLDERS

Retractable holders are inserted through a packing gland and valve. The minimum overall length of a holder is  $P+T$ , where  $P$  is the height of the packing assembly and  $T$  is the travel distance to retract the probe from its inserted position to a point above the valve that allows the valve to be closed.

TYPE	OVERALL LENGTH > P+T	CODE (NOMINAL INSERT)	BLADE/DISC COUPON LENGTH	DIM B*	DIM C*
STRIP	522	12	35	352	242
Example $\phi$	672	18	35	502	392
	822	24	35	652	542
	972	30	35	802	692
	1122	36	35	952	842
DISC	499	12	8	329	219
	649	18	8	479	369
	799	24	8	629	519
	949	30	8	779	669
	1099	36	8	929	819

\*Note: Dim B & Dim C are the distances below the packing gland for NPT and flanged packing types respectively. They are equal to (T) in the length calculation method.

Dimension  $T$  is equal to the sum of the insertion distance  $I$ , the wall thickness of the pipe/vessel  $W$  and the height of the branch assembly and valve  $H$ . ( $T = I+W+H$ )

The dimension  $P$  is 170 mm for a conventional 1" NPT packing assembly and 280 mm for a flanged packing assembly. Once the minimum overall length has been calculated, consult the table to find the next highest overall length and enter the Code equivalent into the product code.

**Example:** A Strip coupon holder is to be inserted 90 mm into a vessel with 12 mm wall through a branch valve assembly 280mm long using a standard NPT packing gland.  $P = 170$  mm.  $T = (I) 90\text{mm} + (W) 12\text{mm} + (H) 280\text{mm}$  therefore  $P+T = 552$  mm. The next highest length overall is 672, which is = Code 18 – see row marked 'example' in table above. The Product Code is PCO RC 18 ST B03. Please refer to data sheet CMEF 011 for full details of the RC access system.



**SINGLE 3" STRIP COUPON RETRACTABLE HOLDER**

## FIXED COUPON HOLDERS

Threaded plug coupon holders and flanged holders are available to order. Contact Cormon sales.

## ENGINEERING NOTE

Intrusive devices in process flows are subject to induced vibration. If the frequency of the flow induced vibration (known as Wake Frequency) is too close to the natural frequency of the device, the device will fail mechanically. Natural and Wake frequencies can be calculated and steps taken to avoid the problem. Contact Cormon for assistance.

**PRODUCT CODE SYSTEM**  
**ACCESSORIES AC INJECTION**

P C O							
	ACCESS TYPE		LENGTH		COUPON TYPE		HOLDER MATERIAL
<b>Holder for weight loss coupon</b>	<b>AC</b>	For 2" high pressure access fitting	Length in mm see calculation Method above e.g: 125		<b>ST</b> <b>DS</b> <b>AF</b> <b>L2</b> <b>L3</b> <b>M2</b> <b>M3</b>	Strip type 3" or 6" Disc type Adjustable disc type Ladder two pair Ladder 3 pair Multi disc 2 coupon Multi disc 3 coupon	<b>BO3</b> 316 stainless steel. Other options available consult Cormon sales  Select letter code (in bold) for option and insert into box at head of column to create a unique product code Example: <b>PCO AC 125 ST BO3</b>
	<b>RC</b> <b>RA</b> <b>BC</b>	Retractable 5/8" body Retractable 5/8" body with standard packing gland Retractable 1/2" body, packing gland and bleed valve	<b>12</b> Nominal <b>18</b> Length <b>24</b> Code <b>30</b> <b>36</b>	<b>ST</b> <b>DS</b>	Strip type 3" or 6" Disc type		
						<b>FN</b> <b>AN</b>	

C							
	TYPE		SIZE		MATERIAL		FINISH
<b>Coupon</b>	<b>ST</b>	Strip	<b>15</b>	2 7/8" x 7/8" x 1/8"	<b>A02</b>  <b>B03</b>  <b>A15</b>	1018 carbon steel  316 stainless steel ASTM A106 Grade B Other options available consult Cormon sales	<b>GP</b> Ground polished with nylon insulators
			<b>20</b>	3" x 1/2" x 1/16"			
			<b>11</b>	6" x 7/8" x 1/8"			
			<b>21</b>	6" x 1/2" x 1/16"			
	<b>FL</b>	Flush Disc	<b>30</b>	1 1/4" dia. x 1/8"			
	<b>LD</b>	Ladder	<b>50</b>	2" x 7/8" x 1/8"			
	<b>SC</b>	Scale	<b>40</b>	3" x 3/4" x 1/8"			
<b>41</b>			6" x 3/4" x 1/8"				
<b>MD</b>	Multi-disc	<b>30</b>	1 1/4" dia. x 1/8"				

C				
	ITEM		TYPE	
<b>Coupon accessory</b>	<b>MK</b>	Mounting kit	<b>01</b>	Strip/Scale 2"/3"/6" nylon
			<b>02</b>	Flush Disc nylon
			<b>03</b>	Strip/Scale 3"/6" nylon 5/8 retractable holder
			<b>05</b>	Strip/Scale 2"/3"/6" ceramic
			<b>06</b>	Flush Disc ceramic
			<b>07</b>	Strip/Scale 2"/3"/6" PTFE
			<b>08</b>	Flush Disc PTFE
			<b>NK</b>	Insulator kit
	<b>S2</b>	Strip/Scale PTFE		
	<b>S3</b>	Strip/Scale ceramic		
	<b>D1</b>	Disc nylon		
	<b>D2</b>	Disc PTFE		
	<b>D3</b>	Disc ceramic		
	<b>M1</b>	Multi-disc Viton®		

Note: standard insulators are nylon. Viton® is the registered trade mark of DuPont Dow Elastomers

CMEC003.4