

Hydrogenators from 50ml to 50,000 litres

High Pressure Lab Autoclaves



Hydrogenation Pilot Plants



Mini Magnetic Couplings



Large Capacity Hydrogenators



Agitators



Catalyst Filters



Our Product Range

- ▶ Lab Autoclaves / Lab Hydrogenators
- ▶ Hydrogenators / Pilot Plants
- ▶ Agitators
- ▶ Non Stirred Pressure Vessels
- ▶ Glass - PEEK Autoclaves
- ▶ Catalyst Filters
- ▶ Mini Magnetic Couplings

About Us

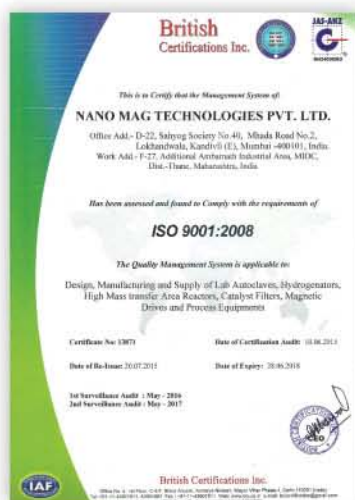
Founded by a group of qualified and experienced personnel to meet the needs of the specialized equipment by fast growing chemical, pharmaceutical, dye chemical, pesticide & perfumery industry.

With a rich experience in the area of Gas-Liquid Reactions, Catalyst Separation and Magnetic Drive arrangement we have perfected the technology to meet stringent process requirements and enhance product economy. We also specialise in fabrication of equipment made of exotic metals such as Zirconium, Monel, Inconel, Hastelloy etc.

With a customer centric approach, innovative technology and an experienced production team backed by a modern production facility, we strive to provide unique solutions at an affordable cost. Our equipment are designed & manufactured to enhance customer's profitability by achieving high productivity and lowest maintenance cost.

Certifications

- ▶ An ISO 9001:2008 certified company
- ▶ CE marked Reactors/Hydrogenators/Filters /Magdrives offered as per European Pressure Equipment Directive
- ▶ Specialised projects executed with ATEX certification
- ▶ All our Autoclaves/Hydrogenators are designed as per ASME section VIII Div 1
- ▶ Third party inspection/certification by TUV, Bureau Veritas, Lloyds etc. offered on request



Letters of Appreciation



Date: 20.05.2013

To whom so ever it may concern

The Department of Chemical Engineering, Dharmesh Desai University, had purchased a high pressure (100 bar) and high temperature (350°C) Autoclave reactor (50 ml capacity) from M/s Nano Mag Technologies Pvt. Ltd.

This Autoclave reactor is being used for high pressure high temperature catalytic reactions. It was found that the system is very good for our application and working satisfactorily.

Dr. Manish Kumar Mishra
Assistant Professor



Fresenius Kabi Oncology Limited
Chemical Oncology Division, P.O. Box 10
Secton 35, Bangalore 562 008, Karnataka, India
T: +91 824 4885000, F: +91 824 3250000
E: +91 824 4885000

To whom so ever it may concern

This is to certify that we have purchased one High Pressure Autoclave in MOC SS 316 in the capacity of 2 Litre rated at 100 kg/cm² pressure & 250°C temperature in the year 2011-12 from Nanomag. The system is being used satisfactorily since its installation in December 2011 by Nano-Mag Technologies Pvt. Ltd.

Further after sales support provided by Nano-Mag Technologies Pvt. Ltd. has been found satisfactorily.

Best regards,

RANBAXY
Pharmaceuticals Limited

INDUSTRIAL AREA - II, DEWAS - 455 001, M.P. INDIA : 07722-108000, FAX : 07722-984228

Date: 26.06.2013

TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s Nano-Mag Technologies Pvt. Ltd. has supplied us 2 Litre SS 316 High Pressure Hydrogenator designed for 100 kg/cm² pressure & 250 deg C temperature on 7th May 2011 with Flameproof Control Panel, Flameproof Aluminium Cast Heater, Flameproof Group B-C Motor etc.

The equipment is found working satisfactorily under the given design parameters.

We are happy with the equipment performance & their after sales service and support provided during commissioning of the equipment is also satisfactory.

AUROBINDO

Date: 10.03.2014

TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s Nano-Mag Technologies Pvt. Ltd. has supplied us a 25 Litre SS 316 High Pressure Autoclave at our Unit No. 8, Kalyanpally Village, Mettala Dist., designed for 100 kg/cm² pressure & 250 deg C with Flameproof Control Panel, Flameproof Auto Cooling System etc. on 19th June 2013.

The equipment is working satisfactorily under the given design parameters & we are happy with the overall performance of the equipment.

The support provided during commissioning of the equipment was very prompt & their after sales service is also very good.

For Aurbindo Pharma Ltd.
R. Nagaraj
Manager - Process Engg.
Aurobindo Pharma Ltd.



Date: February, 27, 2013

TO WHOM SO EVER IT MAY CONCERN

M/s Nano Mag Technologies Pvt. Ltd. had supplied us 100 ml high pressure reactor to our department. It is designed to operate at 250 °C and 100 bar pressure with Mag-drive to avoid any leakage.

During its operation at our department for the last one and half year, we found its performance is satisfactory. Currently we are using it for high pressure liquid phase reactions like hydrogenation and oxidation reactions.

During some maintenance problem, support and services provided are appreciable. We are happy with their sales after services.

Dr. R. K. Mewada
Associate Professor,
Chemical Engineering Department

Dr. Shajay Patel
Professor and Head,
Chemical Engineering Department

TECHNOLOGY AND MANUFACTURING



ATUL LTD
And 796029, Gujarat, India
Telephone: +91 2625 270000 / 270001 / 270002 / 270003 / 270004 / 270005 / 270006 / 270007 / 270008 / 270009 / 270010 / 270011 / 270012 / 270013 / 270014 / 270015 / 270016 / 270017 / 270018 / 270019 / 270020 / 270021 / 270022 / 270023 / 270024 / 270025 / 270026 / 270027 / 270028 / 270029 / 270030 / 270031 / 270032 / 270033 / 270034 / 270035 / 270036 / 270037 / 270038 / 270039 / 270040 / 270041 / 270042 / 270043 / 270044 / 270045 / 270046 / 270047 / 270048 / 270049 / 270050 / 270051 / 270052 / 270053 / 270054 / 270055 / 270056 / 270057 / 270058 / 270059 / 270060 / 270061 / 270062 / 270063 / 270064 / 270065 / 270066 / 270067 / 270068 / 270069 / 270070 / 270071 / 270072 / 270073 / 270074 / 270075 / 270076 / 270077 / 270078 / 270079 / 270080 / 270081 / 270082 / 270083 / 270084 / 270085 / 270086 / 270087 / 270088 / 270089 / 270090 / 270091 / 270092 / 270093 / 270094 / 270095 / 270096 / 270097 / 270098 / 270099 / 270100 / 270101 / 270102 / 270103 / 270104 / 270105 / 270106 / 270107 / 270108 / 270109 / 270110 / 270111 / 270112 / 270113 / 270114 / 270115 / 270116 / 270117 / 270118 / 270119 / 270120 / 270121 / 270122 / 270123 / 270124 / 270125 / 270126 / 270127 / 270128 / 270129 / 270130 / 270131 / 270132 / 270133 / 270134 / 270135 / 270136 / 270137 / 270138 / 270139 / 270140 / 270141 / 270142 / 270143 / 270144 / 270145 / 270146 / 270147 / 270148 / 270149 / 270150 / 270151 / 270152 / 270153 / 270154 / 270155 / 270156 / 270157 / 270158 / 270159 / 270160 / 270161 / 270162 / 270163 / 270164 / 270165 / 270166 / 270167 / 270168 / 270169 / 270170 / 270171 / 270172 / 270173 / 270174 / 270175 / 270176 / 270177 / 270178 / 270179 / 270180 / 270181 / 270182 / 270183 / 270184 / 270185 / 270186 / 270187 / 270188 / 270189 / 270190 / 270191 / 270192 / 270193 / 270194 / 270195 / 270196 / 270197 / 270198 / 270199 / 270200 / 270201 / 270202 / 270203 / 270204 / 270205 / 270206 / 270207 / 270208 / 270209 / 270210 / 270211 / 270212 / 270213 / 270214 / 270215 / 270216 / 270217 / 270218 / 270219 / 270220 / 270221 / 270222 / 270223 / 270224 / 270225 / 270226 / 270227 / 270228 / 270229 / 270230 / 270231 / 270232 / 270233 / 270234 / 270235 / 270236 / 270237 / 270238 / 270239 / 270240 / 270241 / 270242 / 270243 / 270244 / 270245 / 270246 / 270247 / 270248 / 270249 / 270250 / 270251 / 270252 / 270253 / 270254 / 270255 / 270256 / 270257 / 270258 / 270259 / 270260 / 270261 / 270262 / 270263 / 270264 / 270265 / 270266 / 270267 / 270268 / 270269 / 270270 / 270271 / 270272 / 270273 / 270274 / 270275 / 270276 / 270277 / 270278 / 270279 / 270280 / 270281 / 270282 / 270283 / 270284 / 270285 / 270286 / 270287 / 270288 / 270289 / 270290 / 270291 / 270292 / 270293 / 270294 / 270295 / 270296 / 270297 / 270298 / 270299 / 270300 / 270301 / 270302 / 270303 / 270304 / 270305 / 270306 / 270307 / 270308 / 270309 / 270310 / 270311 / 270312 / 270313 / 270314 / 270315 / 270316 / 270317 / 270318 / 270319 / 270320 / 270321 / 270322 / 270323 / 270324 / 270325 / 270326 / 270327 / 270328 / 270329 / 270330 / 270331 / 270332 / 270333 / 270334 / 270335 / 270336 / 270337 / 270338 / 270339 / 270340 / 270341 / 270342 / 270343 / 270344 / 270345 / 270346 / 270347 / 270348 / 270349 / 270350 / 270351 / 270352 / 270353 / 270354 / 270355 / 270356 / 270357 / 270358 / 270359 / 270360 / 270361 / 270362 / 270363 / 270364 / 270365 / 270366 / 270367 / 270368 / 270369 / 270370 / 270371 / 270372 / 270373 / 270374 / 270375 / 270376 / 270377 / 270378 / 270379 / 270380 / 270381 / 270382 / 270383 / 270384 / 270385 / 270386 / 270387 / 270388 / 270389 / 270390 / 270391 / 270392 / 270393 / 270394 / 270395 / 270396 / 270397 / 270398 / 270399 / 270400 / 270401 / 270402 / 270403 / 270404 / 270405 / 270406 / 270407 / 270408 / 270409 / 270410 / 270411 / 270412 / 270413 / 270414 / 270415 / 270416 / 270417 / 270418 / 270419 / 270420 / 270421 / 270422 / 270423 / 270424 / 270425 / 270426 / 270427 / 270428 / 270429 / 270430 / 270431 / 270432 / 270433 / 270434 / 270435 / 270436 / 270437 / 270438 / 270439 / 270440 / 270441 / 270442 / 270443 / 270444 / 270445 / 270446 / 270447 / 270448 / 270449 / 270450 / 270451 / 270452 / 270453 / 270454 / 270455 / 270456 / 270457 / 270458 / 270459 / 270460 / 270461 / 270462 / 270463 / 270464 / 270465 / 270466 / 270467 / 270468 / 270469 / 270470 / 270471 / 270472 / 270473 / 270474 / 270475 / 270476 / 270477 / 270478 / 270479 / 270480 / 270481 / 270482 / 270483 / 270484 / 270485 / 270486 / 270487 / 270488 / 270489 / 270490 / 270491 / 270492 / 270493 / 270494 / 270495 / 270496 / 270497 / 270498 / 270499 / 270500 / 270501 / 270502 / 270503 / 270504 / 270505 / 270506 / 270507 / 270508 / 270509 / 270510 / 270511 / 270512 / 270513 / 270514 / 270515 / 270516 / 270517 / 270518 / 270519 / 270520 / 270521 / 270522 / 270523 / 270524 / 270525 / 270526 / 270527 / 270528 / 270529 / 270530 / 270531 / 270532 / 270533 / 270534 / 270535 / 270536 / 270537 / 270538 / 270539 / 270540 / 270541 / 270542 / 270543 / 270544 / 270545 / 270546 / 270547 / 270548 / 270549 / 270550 / 270551 / 270552 / 270553 / 270554 / 270555 / 270556 / 270557 / 270558 / 270559 / 270560 / 270561 / 270562 / 270563 / 270564 / 270565 / 270566 / 270567 / 270568 / 270569 / 270570 / 270571 / 270572 / 270573 / 270574 / 270575 / 270576 / 270577 / 270578 / 270579 / 270580 / 270581 / 270582 / 270583 / 270584 / 270585 / 270586 / 270587 / 270588 / 270589 / 270590 / 270591 / 270592 / 270593 / 270594 / 270595 / 270596 / 270597 / 270598 / 270599 / 270600 / 270601 / 270602 / 270603 / 270604 / 270605 / 270606 / 270607 / 270608 / 270609 / 270610 / 270611 / 270612 / 270613 / 270614 / 270615 / 270616 / 270617 / 270618 / 270619 / 270620 / 270621 / 270622 / 270623 / 270624 / 270625 / 270626 / 270627 / 270628 / 270629 / 270630 / 270631 / 270632 / 270633 / 270634 / 270635 / 270636 / 270637 / 270638 / 270639 / 270640 / 270641 / 270642 / 270643 / 270644 / 270645 / 270646 / 270647 / 270648 / 270649 / 270650 / 270651 / 270652 / 270653 / 270654 / 270655 / 270656 / 270657 / 270658 / 270659 / 270660 / 270661 / 270662 / 270663 / 270664 / 270665 / 270666 / 270667 / 270668 / 270669 / 270670 / 270671 / 270672 / 270673 / 270674 / 270675 / 270676 / 270677 / 270678 / 270679 / 270680 / 270681 / 270682 / 270683 / 270684 / 270685 / 270686 / 270687 / 270688 / 270689 / 270690 / 270691 / 270692 / 270693 / 270694 / 270695 / 270696 / 270697 / 270698 / 270699 / 270700 / 270701 / 270702 / 270703 / 270704 / 270705 / 270706 / 270707 / 270708 / 270709 / 270710 / 270711 / 270712 / 270713 / 270714 / 270715 / 270716 / 270717 / 270718 / 270719 / 270720 / 270721 / 270722 / 270723 / 270724 / 270725 / 270726 / 270727 / 270728 / 270729 / 270730 / 270731 / 270732 / 270733 / 270734 / 270735 / 270736 / 270737 / 270738 / 270739 / 270740 / 270741 / 270742 / 270743 / 270744 / 270745 / 270746 / 270747 / 270748 / 270749 / 270750 / 270751 / 270752 / 270753 / 270754 / 270755 / 270756 / 270757 / 270758 / 270759 / 270760 / 270761 / 270762 / 270763 / 270764 / 270765 / 270766 / 270767 / 270768 / 270769 / 270770 / 270771 / 270772 / 270773 / 270774 / 270775 / 270776 / 270777 / 270778 / 270779 / 270780 / 270781 / 270782 / 270783 / 270784 / 270785 / 270786 / 270787 / 270788 / 270789 / 270790 / 270791 / 270792 / 270793 / 270794 / 270795 / 270796 / 270797 / 270798 / 270799 / 270800 / 270801 / 270802 / 270803 / 270804 / 270805 / 270806 / 270807 / 270808 / 270809 / 270810 / 270811 / 270812 / 270813 / 270814 / 270815 / 270816 / 270817 / 270818 / 270819 / 270820 / 270821 / 270822 / 270823 / 270824 / 270825 / 270826 / 270827 / 270828 / 270829 / 270830 / 270831 / 270832 / 270833 / 270834 / 270835 / 270836 / 270837 / 270838 / 270839 / 270840 / 270841 / 270842 / 270843 / 270844 / 270845 / 270846 / 270847 / 270848 / 270849 / 270850 / 270851 / 270852 / 270853 / 270854 / 270855 / 270856 / 270857 / 270858 / 270859 / 270860 / 270861 / 270862 / 270863 / 270864 / 270865 / 270866 / 270867 / 270868 / 270869 / 270870 / 270871 / 270872 / 270873 / 270874 / 270875 / 270876 / 270877 / 270878 / 270879 / 270880 / 270881 / 270882 / 270883 / 270884 / 270885 / 270886 / 270887 / 270888 / 270889 / 270890 / 270891 / 270892 / 270893 / 270894 / 270895 / 270896 / 270897 / 270898 / 270899 / 270900 / 270901 / 270902 / 270903 / 270904 / 270905 / 270906 / 270907 / 270908 / 270909 / 270910 / 270911 / 270912 / 270913 / 270914 / 270915 / 270916 / 270917 / 270918 / 270919 / 270920 / 270921 / 270922 / 270923 / 270924 / 270925 / 270926 / 270927 / 270928 / 270929 / 270930 / 270931 / 270932 / 270933 / 270934 / 270935 / 270936 / 270937 / 270938 / 270939 / 270940 / 270941 / 270942 / 270943 / 270944 / 270945 / 270946 / 270947 / 270948 / 270949 / 270950 / 270951 / 270952 / 270953 / 270954 / 270955 / 270956 / 270957 / 270958 / 270959 / 270960 / 270961 / 270962 / 270963 / 270964 / 270965 / 270966 / 270967 / 270968 / 270969 / 270970 / 270971 / 270972 / 270973 / 270974 / 270975 / 270976 / 270977 / 270978 / 270979 / 270980 / 270981 / 270982 / 270983 / 270984 / 270985 / 270986 / 270987 / 270988 / 270989 / 270990 / 270991 / 270992 / 270993 / 270994 / 270995 / 270996 / 270997 / 270998 / 270999 / 271000 / 271001 / 271002 / 271003 / 271004 / 271005 / 271006 / 271007 / 271008 / 271009 / 271010 / 271011 / 271012 / 271013 / 271014 / 271015 / 271016 / 271017 / 271018 / 271019 / 271020 / 271021 / 271022 / 271023 / 271024 / 271025 / 271026 / 271027 / 271028 / 271029 / 271030 / 271031 / 271032 / 271033 / 271034 / 271035 / 271036 / 271037 / 271038 / 271039 / 271040 / 271041 / 271042 / 271043 / 271044 / 271045 / 271046 / 271047 / 271048 / 271049 / 271050 / 271051 / 271052 / 271053 / 271054 / 271055 / 271056 / 271057 / 271058 / 271059 / 271060 / 271061 / 271062 / 271063 / 271064 / 271065 / 271066 / 271067 / 271068 / 271069 / 271070 / 271071 / 271072 / 271073 / 271074 / 271075 / 271076 / 271077 / 271078 / 271079 / 271080 / 271081 / 271082 / 271083 / 271084 / 271085 / 271086 / 271087 / 271088 / 271089 / 271090 / 271091 / 271092 / 271093 / 271094 / 271095 / 271096 / 271097 / 271098 / 271099 / 271100 / 271101 / 271102 / 271103 / 271104 / 271105 / 271106 / 271107 / 271108 / 271109 / 271110 / 271111 / 271112 / 271113 / 271114 / 271115 / 271116 / 271117 / 271118 / 271119 / 271120 / 271121 / 271122 / 271123 / 271124 / 271125 / 271126 / 271127 / 271128 / 271129 / 271130 / 271131 / 271132 / 271133 / 271134 / 271135 / 271136 / 271137 / 271138 / 271139 / 271140 / 271141 / 271142 / 271143 / 271144 / 271145 / 271146 / 271147 / 271148 / 271149 / 271150 / 271151 / 271152 / 271153 / 271154 / 271155 / 271156 / 271157 / 271158 / 271159 / 271160 / 271161 / 271162 / 271163 / 271164 / 271165 / 271166 / 271167 / 271168 / 271169 / 271170 / 271171 / 271172 / 271173 / 271174 / 271175 / 271176 / 271177 / 271178 / 271179 / 271180 / 271181 / 271182 / 271183 / 271184 / 271185 / 271186 / 271187 / 271188 / 271189 / 271190 / 271191 / 271192 / 271193 / 271194 / 271195 / 271196 / 271197 / 271198 / 271199 / 271200 / 271201 / 271202 / 271203 / 271204 / 271205 / 271206 / 271207 / 271208 / 271209 / 271210 / 271211 / 271212 / 271213 / 271214 / 271215 / 271216 / 271217 / 271218 / 271219 / 271220 / 271221 / 271222 / 271223 / 271224 / 271225 / 271226 / 271227 / 271228 / 271229 / 271230 / 271231 / 271232 / 271233 / 271234 / 271235 / 271236 / 271237 / 271238 / 271239 / 271240 / 271241 / 271242 / 271243 / 271244 / 271245 / 271246 / 271247 / 271248 / 271249 / 271250 / 271251 / 271

High Mass Transfer Area Lab Autoclaves

Nano-Mag make High Mass Transfer Area Autoclaves are robustly built reaction vessels having magnetically coupled, seal-less agitator. These Autoclaves are provided with PID controlled electrical heating & cooling arrangements. Flameproof or Non-flameproof control panels indicate pressure, temperature, agitator speed etc. with very high degree of accuracy. Also, these panels are fitted with alarms of high pressure & high temperature set points.

Safety accessories such as Rupture Disc & Safety Relief Valves provide safety while operating the equipment at very high pressures. Pressure Gauge, Sampling Valve, Gas Inlet Valve, Vent Valve etc. are provided as standard accessories of the Autoclave.



What is High Mass Transfer Area Autoclave?

Our Autoclaves are fitted with special Agitator which generates very high gas-liquid mass transfer area by recirculation of head space gases.

Nano-Mag make High Mass Transfer Area Lab Autoclaves have following advantages over Conventional Lab Autoclaves presently manufactured in India.

Sr. No.	Nano-Mag High Mass Transfer Area Autoclave	Conventional Lab Autoclaves Manufactured In India
1	Designed especially for Hydrogenation & other high pressure gas-liquid reactions.	Designed only for stirring liquid mass.
2	Very high gas-liquid mass transfer area resulting in faster batch time with optimum catalyst usage.	Poor mass transfer area means sluggish rate of reaction despite higher catalyst loading. Longer batch time leads to many unwanted side reactions. Lab results cannot be correlated to plant scale operations.
3	Various L/D ratios for variety of reactions, applications to match exact customer requirement.	Vessel L/D is standard irrespective of application, reaction requirements.
4	Very high heat transfer co-efficient. Faster removal of exotherm. Maintaining precise operating temperature is easier despite higher rate of reaction.	Very poor heat transfer.
5	Improves product profitability by minimizing batch time & catalyst loading.	Longer batch times, higher impurities and high catalyst loading increase the manufacturing/R&D cost.

AUTOCLAVE SALIENT FEATURES

- ▶ Sizes from – 50 ml to 100 litre
- ▶ Material of construction – SS316, SS316L, Hastelloy C, Zirconium, Inconel, Monel etc.
- ▶ Standard design pressure upto 100 bar & design temperature upto 250°C
- ▶ Maximum design pressure upto 350 bar & temperature upto 600°C
- ▶ Accessories – Flameproof Control Panel, Auto cooling system, Digital Pressure Indicator, Safety Relief Valve, Flameproof IIC Motor, SS Ball Valve with funnel for solid/liquid inlet, Reflux condenser, Chain pulley arrangement, SCADA software with data lagging facility etc.
- ▶ Skid mounted Hydrogenation pilot plant.

NANO-MAG AUTOCLAVE ADVANTAGES

- ▶ High mass transfer area
- ▶ Faster reaction
- ▶ Shorter batch time
- ▶ Lesser catalyst loading
- ▶ Minimum impurities
- ▶ High yields
- ▶ Better product economy

AUTOCLAVE APPLICATIONS

For various high pressure reactions and gas -liquid reactions with

- ▶ Hydrogen
- ▶ Ethylene Oxide
- ▶ Ammonia
- ▶ Oxygen
- ▶ HCL
- ▶ Phosgene
- ▶ Co₂
- ▶ CO
- ▶ In R&D labs of fine & speciality chemicals, bulk drug manufacturers, agrochemicals, petrochemicals companies and chemical /chemistry departments of educational institutes / universities etc.



Design Data

STANDARD AUTOCLAVE MODELS

Autoclave Model	Maximum Operating Capacity	Minimum Operating Capacity	L/D Ratio	Motor Rating	Standard Design Pressure	Standard Design Temperature	Optional Design Pressure	Optional Design Temperature
100 ml	50 ml	25 ml	1.4	0.25 HP	100 kg/cm ² g	250°C	Available up to 350 Kg/cm ² g	Available up to 600 deg.C
400 ml	200 ml	80 ml	1	0.25 HP	100 kg/cm ² g	250°C		
750 ml	400 ml	80 ml	1.39	0.25 HP	100 kg/cm ² g	250°C		
1 Litre	600 ml	80 ml	1.94	0.25 HP	100 kg/cm ² g	250°C		
2 Litre	1200 ml	150 ml	1.96	0.25 HP	100 kg/cm ² g	250°C		
5 Litre	3.5 Litre	500 ml	1.54	0.25 HP	100 kg/cm ² g	250°C		
10 Litre	7 Litre	1 Litre	1.3	0.50 HP	100 kg/cm ² g	250°C		
20 Litre	15 Litre	2 Litre	1.36	0.50 HP	100 kg/cm ² g	250°C		
25 Litre	18 Litre	2 Litre	1.59	0.50 HP	100 kg/cm ² g	250°C		
50 Litre	36 Litre	4.5 Litre	1.78	1.00 HP	50 kg/cm ² g	250°C		
100 Litre	70 Litre	8.5 Litre	1.63	1.50 HP	50 kg/cm ² g	250°C		



Typical 2 Litre High Pressure Lab Autoclave

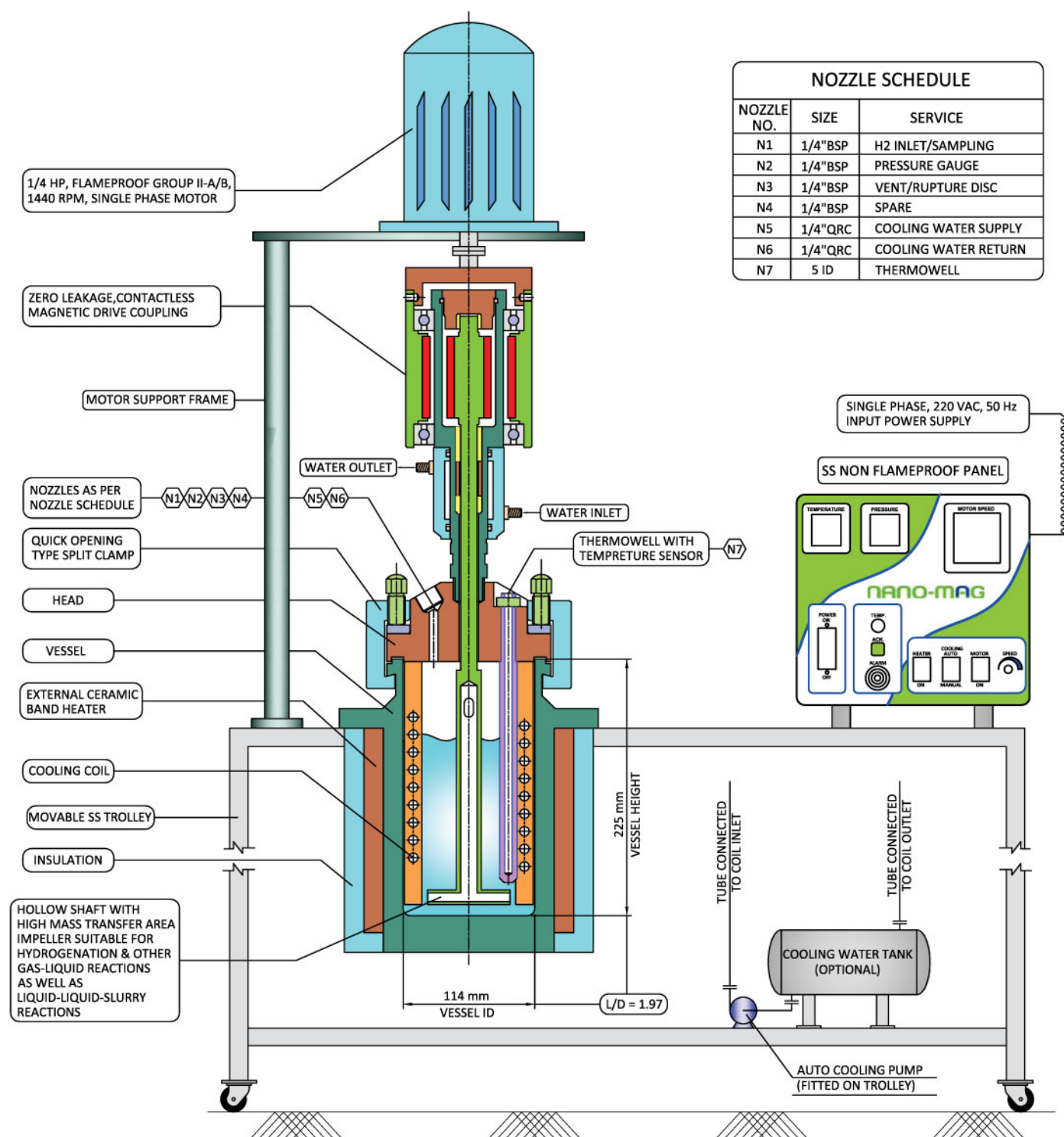


Photo Gallery - High Pressure Lab Autoclaves

25 Litre Autoclave with Flameproof IIC Panel, Flameproof IIC Motor, Flameproof IIC Autocooling System, Chain Pulley Arrangement



1 Litre & 5 Litre Interchangeable Metal Autoclave



Multiple Autoclave System



Skid mounted Alkoxylation Pilot Plant



Photo Gallery - High Pressure Lab/Pilot Autoclaves

250 ml Table Top Autoclave



100 ml Interchangeable
Glass - Metal Autoclave



5 Litre Autoclave with Hydraulic
Raising/Lowering/Tilting
Arrangement of Vessel



100 Litre Pilot Plant Hydrogenator

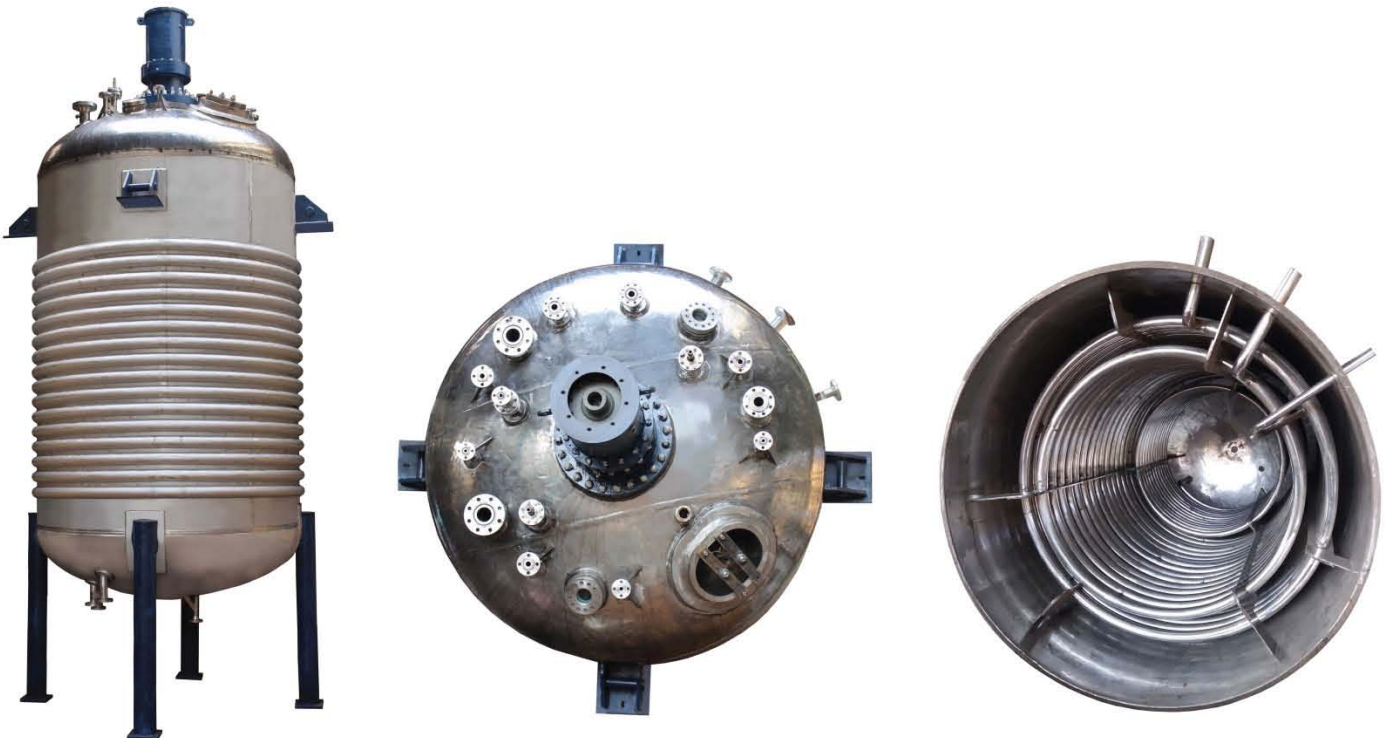


High Mass Transfer Area Reactors

Nano-Mag make High Mass Transfer Area Reactors are specially designed for various Gas-Liquid reactions. These reaction vessels are robustly built for longer life and to withstand constantly varying temperatures and pressures due to internal reaction conditions. These reactors are fitted with specially designed Agitator which creates very high gas-liquid contact area by recirculation of headspace gases, leading to superior mass transfer rates. Agitator is available with two sealing options such as Mechanical Seal & Magnetic Coupling.

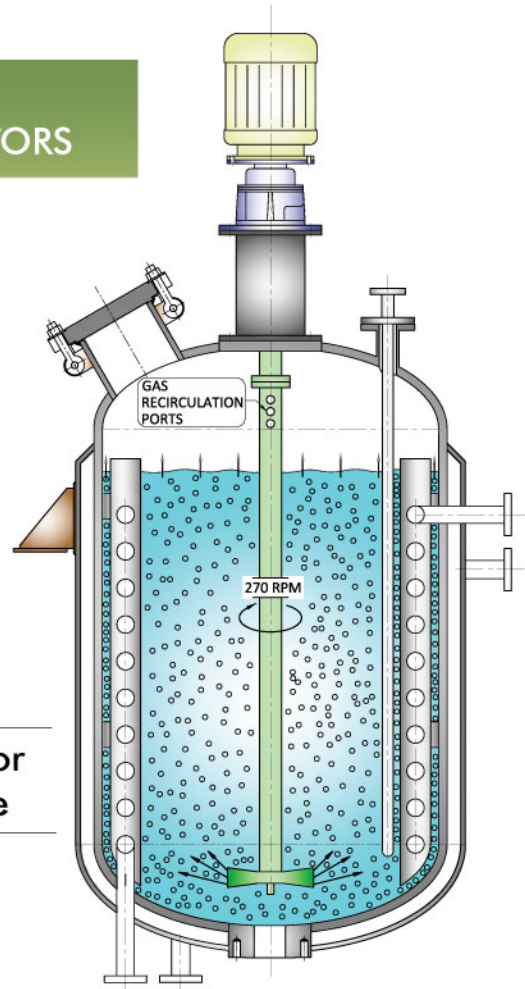
SALIENT FEATURES

- ▶ Capacities from 50 ml to 50 KL
- ▶ Pressure from full vacuum to 150 bar.
- ▶ Temperature from Cryogenic to 400°C
- ▶ Material of construction – SS 316, SS 316L, Hastelloy, Inconel, Monel, Zirconium etc.
- ▶ Accessories – Flameproof control panel, Safety accessories such as Rupture Disc, Safety Relief Valve etc.
- ▶ Automatic pressure & temperature controllers, PID controlled DM water cooling systems for exotherm removal etc.
- ▶ Fully automated skid mounted Hydrogenation pilot plants up to 150 litre capacity with Group II-C electrical fittings, Auto heating/cooling system, Catch pot, Nitrogen blanketing system, Remote sampling and venting arrangement etc.

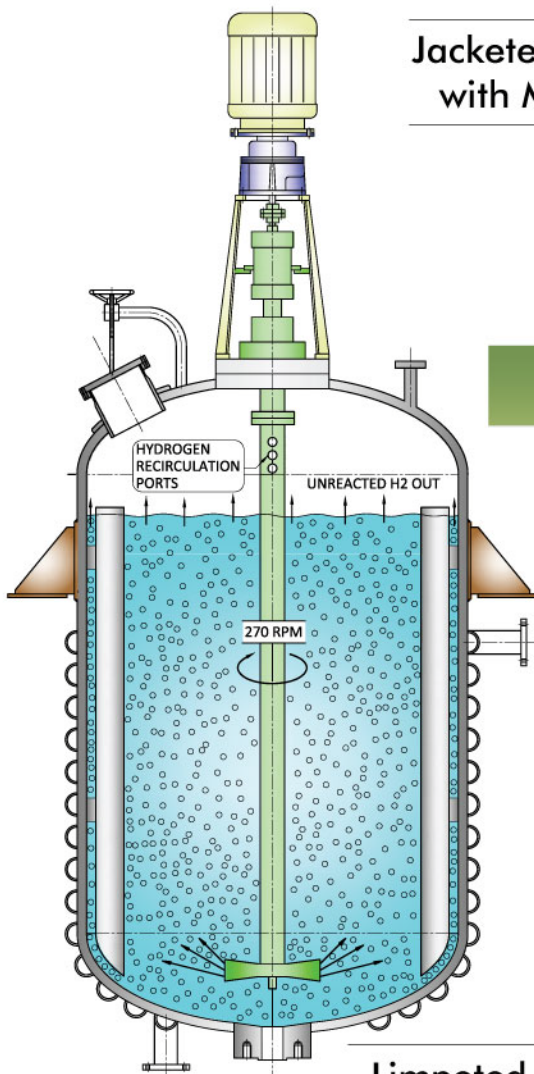


ADVANTAGES OF NANO-MAG HIGH MASS TRANSFER AREA REACTORS

- ▶ High Mass Transfer Area
- ▶ Faster reaction
- ▶ Shorter batch time
- ▶ Lesser catalyst loading
- ▶ Minimum impurities
- ▶ Higher yields
- ▶ Better product economy



Jacketed Reactor
with Magdrive



Limpeted Reactor
with Mechanical Seal

APPLICATIONS

For various Gas-Liquid Reactions
with following gases

- ▶ Hydrogen
- ▶ Ethylene Oxide
- ▶ Ammonia
- ▶ Oxygen
- ▶ Air
- ▶ HCl
- ▶ Phosgene
- ▶ CO₂
- ▶ CO

Noble Metal Catalyst Filters

Nano-Mag make Noble Metal Catalyst Filters are specially designed for filtration of various catalysts such as Palladium, Platinum, Rhodium, Ruthenium etc. These filters are fitted with state of the art Sintered metallic cartridges which are coated with metallic membrane. This membrane prevents the catalyst particles from getting penetrated in the sintered wall of the filter candle and enhances its life.

These filters are fitted with a heel filter to ensure that entire liquid volume is filtered. Hence, these filters improve the production capacity by preventing product recycling.

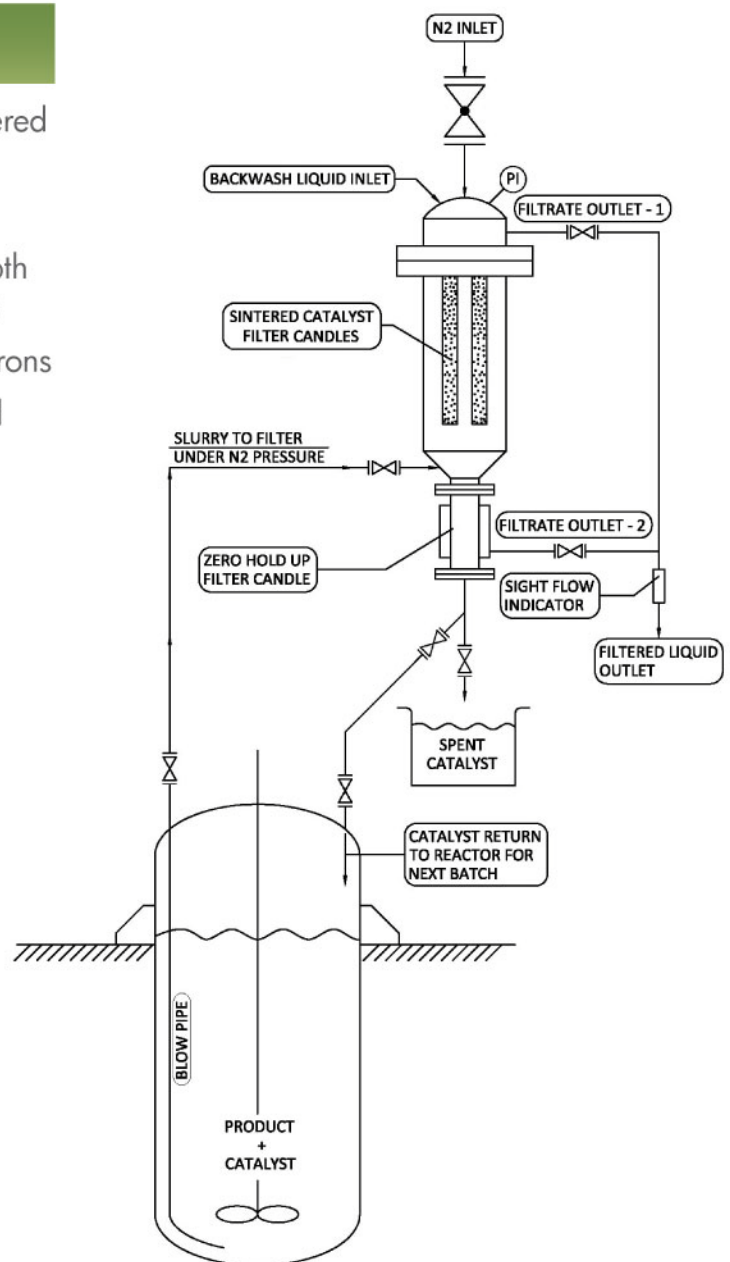
SALIENT FEATURES

- ▶ Sintered SS 316L or other Sintered High Nickel Alloys
- ▶ Metallic Membrane coating
- ▶ Surface filtration, hence no depth filtration and choking problems
- ▶ Porosity up to absolute 0.5 microns
- ▶ Liquid recirculation not required
- ▶ No need of polishing filter.
- ▶ No atmospheric exposure
- ▶ No spillage losses
- ▶ 100% recovery of catalyst

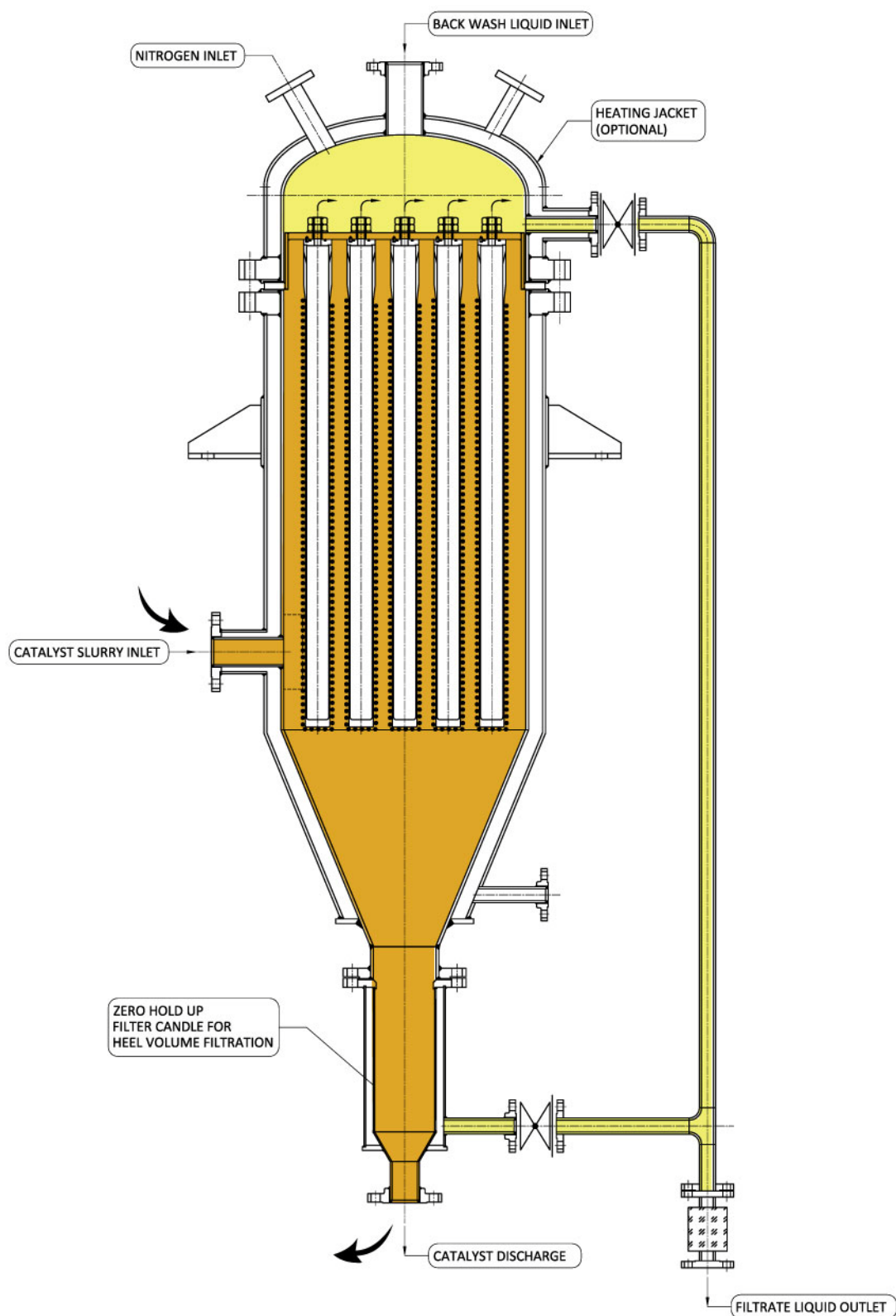
APPLICATIONS

Filtration of following Noble Metal Catalysts

- ▶ Palladium
- ▶ Platinum
- ▶ Rhodium
- ▶ Ruthenium



Noble Metal Catalyst Filters



DO YOU HAVE DIFFICULTY IN
VACUUM DISTILLATION?

DO YOU HAVE
**LEAKAGE PROBLEMS OF TOXIC,
CORROSIVE GASES** FROM YOUR FLASK?

DOES YOUR
DISTILLATION PROCESS
TAKE TOO LONG A TIME?

DOES YOUR MATERIAL GET
CHARRED/POLYMERISED
VERY OFTEN?

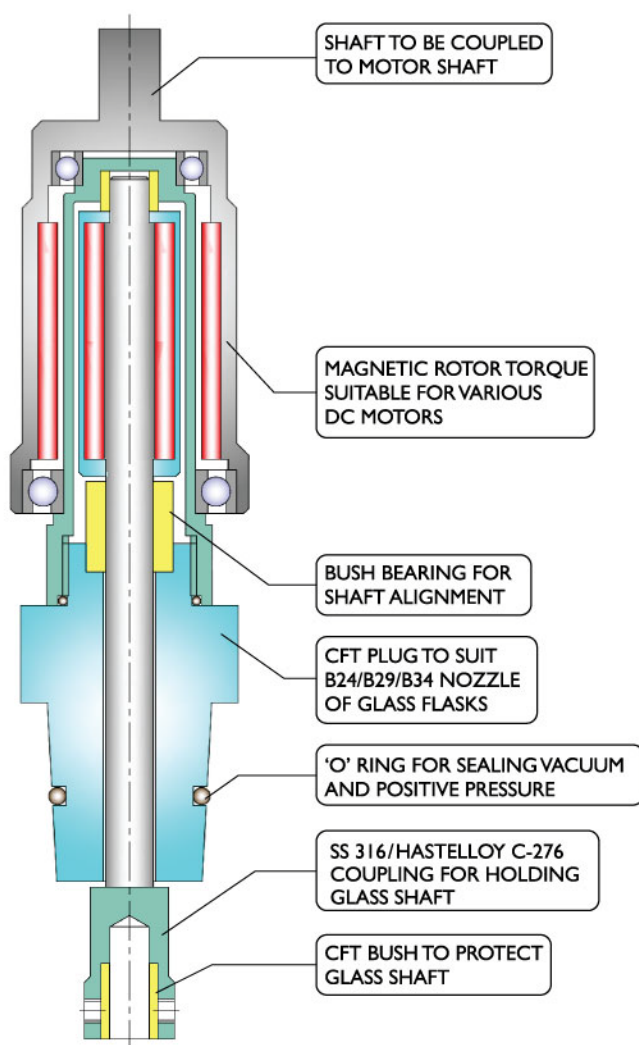


**Mini Magnetic
Coupling Will Solve
All Your
Above Difficulties**

Mini Magnetic Couplings for Laboratory Stirrers

Nano-Mag make Mini Magnetic Couplings are designed to suit all kinds of laboratory stirring applications where maintaining full vacuum or inside pressure in the glass flask is absolutely necessary. Presently R&D professionals use a gland packed glass shaft which cannot maintain desired positive or negative pressure in the glass flask. This results in very long distillation times, charring and polymerisation of material, longer reaction times etc. Due to these limitations of the current equipment, R&D professionals always have difficulty in generating accurate data with respect to various chemical processes.

Nano-Mag make MINI MAGNETIC COUPLINGS are specially designed for laboratory glass flasks. One end of the coupling snugly fits on the nozzle of a glass flask while the other end can be coupled to stirrer motor. A glass shaft with PTFE impeller can be fitted on the bottom side. These magnetic couplings can fit various glass nozzle types such as B-34, B-29, B-24 etc. These couplings can easily handle torques of various DC Motors to stir the mass up to 200 Litre capacity.



Some of our Esteemed Customers



NANO-MAG

Nano-Mag Technologies Pvt.Ltd.

Sahyog No. 40, Mhada Lane 2, Lokhandwala,
Kandivali (E), Mumbai – 400 101. (India) Tel.: +91-22-2965 7302

Email: sales@nanomagtech.com / exports@nanomagtech.com

www.nanomagtech.com

ATEX  **CE**

