

Servicing Instructions

Milliken Parallel Plug Valves

Positive isolation with minimum maintenance

Sealing

In service sealing compound should be used for each individual medium to affect good isolation. Our recommendations for sealing compounds are the result of considerable research. If there is any doubt as to the suitability of a particular compound for a given service, test should be carried out in a new clean valve. This is the only way to conduct such tests. Laboratory tests using a beaker of line fluid and immersing a stick of compound have proved misleading. Where samples of fluid can be supplied, together with details of temperature and pressure, and if known frequency of operation, we will carry out specific tests and give our recommendations based upon the results.

Construction

Only five major parts are involved when dismantling i.e. body, parallel plug, PTFE thrust ring, bottom cover and plug support spring.

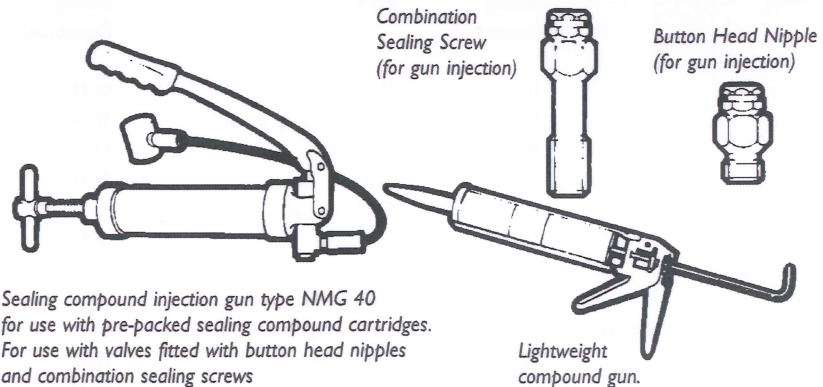
Operation

Care must be taken particularly with geared valves that the plug is eased off the body stop after operation to ensure the plug is free to float.

Routine Maintenance

Valves are despatched by Hattersley charged with sealing compound. A compound identification tag states clearly that the valve has been assembled and tested with a universal compound. The user is advised to follow the chart overleaf for specific applications. When injecting additional sealing compound, care should be taken to ensure that it is of the correct type. Where the service permits, the valve should be partially or fully operated once to ensure free operation and to determine the effort required.

For infrequently operated valves maintenance merely consists of two or three turns of the combination screw or, if gun injection, several strokes of the lever; and opening and closing the valve a minimum of three times to distribute the compound evenly around the plug at three monthly intervals. It is difficult to be specific how often the valve should be recharged with sealing compound, since this is determined by the frequency of operation, type of service, pressure and temperature.



Injection of Compound

When the combination screw has reached its limit (screwed fully down) this indicates that the valve needs recharging with sealing compound.

When using the lightweight compound gun, remove the combination screw, partially fill the compound reservoir in the plug, replace the combination screw, and screw down.

This operation may need repeating several times. When using the NMG 40 high pressure gun, attach the nozzle to the injection nipple and give several steady strokes of the lever.

VALVES MUST EITHER BE FULLY OPEN OR FULLY CLOSED WHILST THEY ARE BEING CHARGED.

Indication of Full Charging

The first indication of the valve becoming fully charged is an increase in the effort required to rotate the combination screw, or with the high pressure gun injection an increase in the effort required on the lever.

The effort required to operate the valve should have increased from the initial operation prior to injection of sealing compound.

Method of injection

Where the number of valves to be charged is small, i.e. 12-15 valves, especially if they are in the smaller sizes, lightweight gun injection can be successfully used. For larger quantities use of the NMG40 high pressure gun is recommended.

Valve Leakage

Leakage through the valve indicates that the valve requires injection of sealing compound or that it needs opening and closing a minimum of three times to distribute the compound evenly.

Operating Torque

Should a valve become jammed or unusually stiff to operate, this can be generally cured by the injection of sealing compound. If this is ineffective, it will be necessary to dismantle the valve, clean the components and recharge with sealing compound.

Servicing

Advice is available from the Hattersley Service Department in connection with all aspects of operation, lubrication and maintenance.

Range of Sealing Compounds

No.	Temperature Range	Colour of Compound	Colour of Box Label	Availability	Do NOT use for	Cleaning Solvent
18*	32° to 450°F 0° to 230°C	Black	Buff	Bulk	Water or Strong Chemicals	Water Trichloroethane
44	-40° to 284°F -40° to 140°C	Black	Green Prepacked Cartridges	Tubes, Bulk and Strong Chemicals	Strong Chemicals Trichloroethane	Trichloroethane
74	-31° to 500°F -34° to 260°C	Grey	Apple Green	Bulk and Prepacked Cartridges	Nitrating Acids Steam, HTHW	Paraffin Hot Water
90**	-20° to 375°F -30° to 190°C	White	White	Bulk and Prepacked Cartridges	Solvents	Acetone

* Not suitable for gun injection ** UK WFBS Listed

Sealing Compound Recommendations

Service	Sealing Compound	Service	Sealing Compound
Acetone/Acetate	74	Chrome Alum	90,74
Acetone	74	Chrome Tanning Liquor	90,74
Air	90,74	Coal Gas	44
Alcohols	74	Coal Gas Condensate	90,44
Alkaline Solutions	74	Coal/Petroleum Mixed Gas	
Ammonia Anhydrous	74	Condensate	90,44
Ammonia Gas	74	Coal Tar	18
Ammonia (Liquid)	74	Coal Tar Oils	74
Ammoniacal Copper Hydroxide	74	Coal Tar Solvents	44
Ammonium Hydroxide	74	Coal Washers	90,74
Amyl Alcohol (Pure)	74	Coconut Oil	90,74
Aniline Dyes	74	Coke Oven Gas	90,74
Anthracene Oil	74	Condensate	90
Aromatic Hydrocarbons	44	Corn Oil	90,74
Aromatic Solvents	44	Corn Syrup (Glucose)	90
Asphalt	18,74	Cotton Seed Oil	90,74
Asphalt Emulsions	18,74	Creosote	44,18
		Cumene	44
Barium Hydroxide	74	Cutting Oil	44
Beet Sugar Liquors	90	Cyanide Solutions	90,74
Benzene	44		
Benzyl Alcohol	74	Denatured Alcohol	74
Bocarbonate of Soda	74	Dextrine	90
Bitumen	18,74	Diesel Fuel	44,161
Blast Furnace Gas	90,74	Distillate Petroleum	44
Boiler Blow Down	90	Disinfectant Solution	90
Borax	90		
Brake Fluid	74	Enamel (see Paint)	
Bunker Fuel	161	Epsom Salts	90
Butadiene	44	Ethane Gas	44
Butane (Gas or Liquid)	44	Ethanalamine	74,44
Butanol	74	Ether, Petroleum	44
Butyl Alcohol	74	Ethers	44
		Ethyl Acetate	44
Calcium Chloride Solution	90,74	Ethyl Alcohol (Ethanol)	74
Calcium Hydroxide (Lime Water)	90,74	Ethyl Benzene	44
Calcium Sulphate	90,74	Ethyl Chloride Gas or Liquid	44
Cane Sugar Liquors	90	Ethylene	44,18
Carbolic Acid (Phenol Sol.)	74	Ethylene Dichloride (Dry)	44,74
Carbonate of Soda	74	Ethylene Gas	44,18
Carbon Bisulphide	44	Ethylene Glyco/Water Sol. (50% Antifreeze)	90,74
Carbon Dioxide	90,74	Ethylene Glycol	74
Carbon Monoxide Gas	90,74		
Carburetted Water Gas	44,74	Ferrous Chloride (Pure)	90,74
Caster Oil	74	Fish Oil	44
Caustic Potash	74	Fuel JP4	44
Caustic Soda	74	Fuel Oil	44
Cellulose Acetate Solutions	74	Furlural	44
Cellulose Nitrate	74		
Cement (Dry)	90,74	Gases	*
Cement Slurries	90,74	Gas - (Manufactured)	90,44
Chloride of Lime	90,74	Gas Natural	90,44
Chocolate	No compound		

Sealing Compound Recommendations

(Continued)

Service	Sealing Compound	Service	Sealing Compound
Gas Oil	44	Paints	
Gasoline	44	- Alcohol Solvent Base	74
Glucose	90	- Hydrocarbon Solvent Base	44
Glycerine (Glycerol)	90,74	- Varnish	44
Grain Alcohols (Ethyl Alcohol)	74	- Water Based	90
Grease	44,74	- White Spirit Based	44
Gypsum (Calcium Sulphate)	90	Paraffin	44
		Paraffin Wax	90,44
Helium Gas	90,44	Pentane	44
Heptane	44	Petrolatum (Petroleum Jelly)	44,74
Heavy Oil (Coke Plant)	44	Petroleum Gas	90,44
Hexane	44	Petroleum Ether	44
Hydraulic Fluid (Haughtosafe 271)	44	Phthalic Anhydride	74
Hydraulic Oil	44	Pine Resin	90,74
Hydrocarbons (Aromatic)	44	Pitch	18,74
Hydrogen Gas	90,44	Polyester Resin Solvent	*
		Polyisobutylene	44
Kerosene	44	Polyvinyl Acetate Emulsion	*
Ketones (Not Acetone)	44,74	Potash (Potassium Carbonate)	90,74
		Potassium Cyanide Liquor	90,74
Lard	90	Potassium Sulphate	90
Latex	*	Producer Gas	90,44
Light Naphthas	44	Propane (Gas or Liquid)	90,44
Light Oil	44,74	Propylene	44
Linseed Oil	90,74	Pyridine	*
Lubricating Oil	44		
Lye Solutions (Alkalies)	74	Quenching Oil	44,18
Magnesium Hydroxide	90	Rapeseed Oil	90,44,74
Maltose (Malt Syrup)	90	Road Tars	18,74
Manufactured Gas	90,44	Rosin (Fine Resin)	*
Methane Gas	90,44	Rubber Latex	*
Methyl Alcohol (Methanol)	74,35	Rubber Solvent	*
Methyl Bromide	74		
Methyl Chloride, Gas or Liquid	44		
Methylated Spirits	74		
Milk of Lime	90,74		
Mineral Oil	44		
Mineral Spirits	44		
Molasses	90		
Monoethanolomine	74,44		
Naptha	44		
Naptha Vapours	44		
Naphthalene	44,74		
Natural Gas	90,44		
Nitrobenzene	44		
Nitrogen Gas	90,44		
Oil Gas Mixture	44		
Oil (Petroleum)	44		
Oil Tar	18,74		
Oil Water Mixtures	90,44		

Sealing Compound Recommendations

(Continued)

Service	Sealing Compound	Service	Sealing Compound
Sewage	90,44	Tempering Oil	44,18
Sewage Gas	90,44	Tetraethyl Lead	44
Shell Cornea	44	Toluene (Toluol)	44
Shell Garia "A"	44	Triethanolamine	74
Shell Turbine Oil	44	Trimethylamine	44,74
Shellac in Alcohol	74	Trisodium Phosphate	90,74
Shock Absorber Oil (Mineral)	*	Turpentine	44
Sludge and Sewage	90,44	Tallow	90
Soap Solutions	90,74		
Soda Liquor (Paper Industry)	74	Vacuum Service	90,44
Sodium Carbonate (Soda Ash)	74	Varnish (See Paints)	
Sodium Cyanide Solution	90,74	Vegetable Oils	90,74
Sodium Hydroxide (up to 50% Conc.)	74	Vegetable Oils and Water	90,74
Sodium Metasilicate	74	Vegetable Tannins	90,74
Sodium Nitrate	90	Vinyl Chloride Monomer	74
Sodium Phosphate (Tri-basic)	90,74	Water (Cold)	90
Sodium Silicate	35,74	Water (Cold, Domestic)	90
Sodium Sulphate	90,74	Water (Hot, Heating)	90
Soluble Oil	90,74	Water/Gas	90,74
Solvent Naphtha	17,44	Water Softener Salts	90,74
Starch Solutions	90	Wax Emulsions	90,74
Sugar Solutions	90	Waxes	44,74
Sulphur (Liquid)	44,18,74	White Spirit	44
Sulphur Dioxide	74	Wood Alcohol (Methyl Alcohol)	74
Sulphur Trioxide	74	Wort, Beer	90
Synthetic Resins	*		
Synthetic Tannins	*	Xylol (Xylene)	44
Tanning Liquors	90,74		
Tar	18,74		
Tar Oil (Creosote)	44,18		
Teepol	90		

* Refer to Technical Department