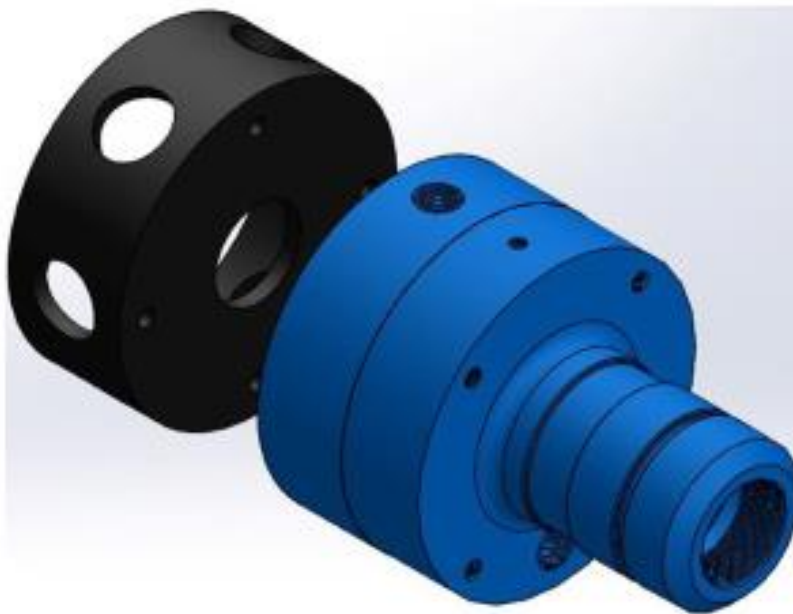


GIZZMOTO

**Multi-Nozzle Annular Jet (MNAJ)
Pumps & Equipment**



**Alternative Technology Solutions For
Transferring Liquids & Flow-able Materials
By Compressed Air or Gas**



_tcl-cumbria INTRODUCTION

All **GIZMOTO** units use fluid dynamics principles and operate **WITHOUT** moving parts, offering end users the following advantages:

- * **LOW ENERGY CONSUMPTION**
- * Multi-Functional & Unrestricted Media Flow
- * Variable Control - no heat generation
- * Virtually Noiseless & Vibration-Free
- * Cannot be overloaded or 'burn-out'
- * Clean and contamination free
- * Self-Cleaning - Low Maintenance
- * Works in Any Angle - No Direct Coupling
- * Easily Installed - Retro-Fit Module Change
- * **Self-Contained - Same Power & Control**
- * Portable & Mobile for Multiple Locations
- * Suitable for Harsh & Hazardous Areas
- * Can be used for water and a variety of liquids



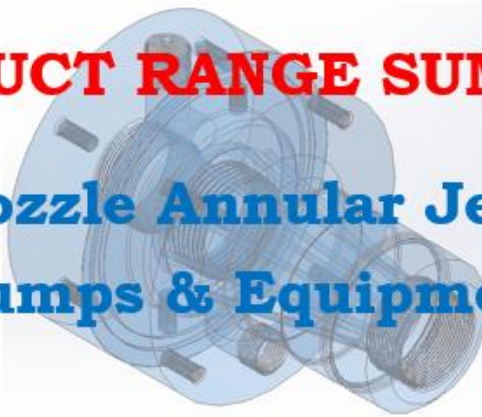
The following pages illustrate a wide range of standard units that can be used in many industrial and commercial sectors. They are also suitable for the OEM market and can be supplied with adaptations to enable retrofitting. Special units can be designed as part of an ongoing product development programme - see concepts section.



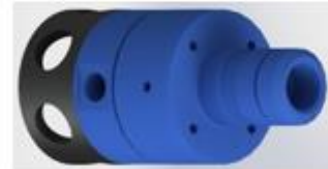
[_tcl-cumbria](http://tcl-cumbria.com)

PRODUCT RANGE SUMMARY

Multi-Nozzle Annular Jet (MNAJ) Pumps & Equipment



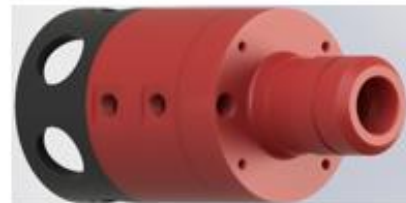
WATER-LIQUID PUMPS



AERATORS-INFUSERS AGITATORS-MIXERS



PROPULSION-JETTERS



Selection of inlet & outlet connections complemented by choice of compressed air (or gas) power supply connections *



* Side Port



* Top Port



* Rear Port

PLUS Fixing points for Mounting Brackets on top & rear faces

All working on No-Moving Parts Technology



_tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 15
 Bore ID - 15mm
 Inlet & Outlet - 1/2" BSP
 NB Other Connections *
 Air Supply - 1/2" BSP
 NB Side or Rear Ported
 Body Diameter - 63mm
 Spigot Diameter - 40mm
 Length/Height - 100mm
 Base Stand - +35mm

***Other Connections**



Fig. 1



Fig. 2



Fig. 3

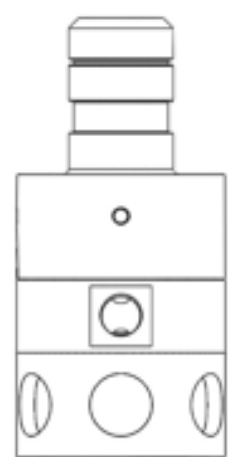


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand

Options - 40mm OD or 50mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand

Options - 1/2", 3/4", 1" BSP Male or 1-1/2"nb Hose



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 20

Bore ID - 20mm

Inlet & Outlet - 3/4" BSP

NB Other Connections *

Air Supply - 1/2" BSP

NB Side or Rear Ported

Body Diameter - 80mm

Spigot Diameter - 40mm

Length/Height - 110mm

Base Stand - +35mm

***Other Connections**



Fig. 1



Fig. 2



Fig. 3

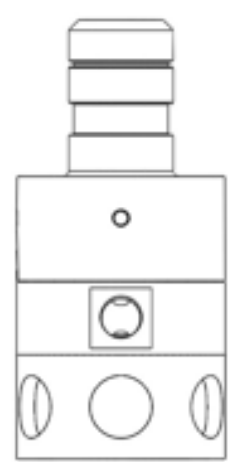


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand

Options - 40mm OD or 50mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand

Options - 3/4", 1" BSP Male or 1-1/2"nb Hose



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 25
 Bore ID - 25mm
 Inlet & Outlet - 1" BSP
 NB Other Connections *
 Air Supply - 1/2" BSP
 NB Side or Rear Ported
 Body Diameter - 100mm
 Spigot Diameter - 50mm
 Length/Height - 160mm
 Base Stand - +35mm

***Other Connections**



Fig. 1



Fig. 2

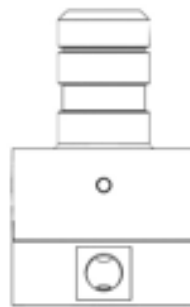


Fig. 3

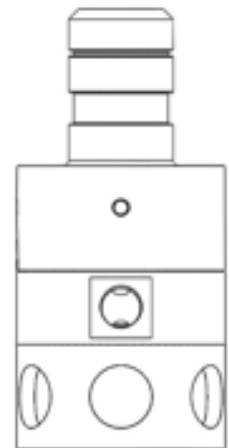


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand

Options - 40mm OD, 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand

Options - 1", 1-1/4", 1-1/2" BSP Male or 2"nb Hose



_tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 50-80

Bore ID - 50mm + **3"nb Hose**

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Side or Top Ported

Body Diameter - 200mm

Spigot Diameter - 80mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**



Fig. 1

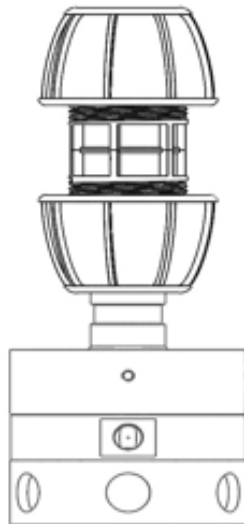


Fig. 2



Fig. 3



Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand

Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand

Options - 1-1/2" BSP or 2" BSP Male or 3" nb Hose



tcl-cumbria **PRODUCT RANGE - UNITS**

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 50-100

Bore ID - 50mm + **4"nb Hose**

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Side or Rear Ported

Body Diameter - 200mm

Spigot Diameter - 80mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**



Fig. 1



Fig. 2

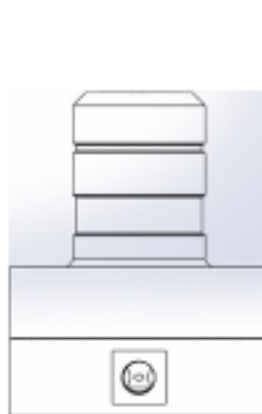


Fig. 3

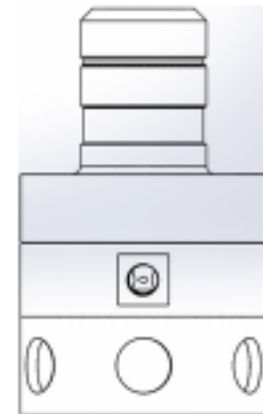


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand

Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand

Options - 1-1/2" BSP or 2" BSP Male or 4"nb Hose



tcl-cumbria **PRODUCT RANGE - UNITS**

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 50-125

Bore ID - 50mm + **5"nb Hose**

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Side or Rear Ported

Body Diameter - 200mm

Spigot Diameter - 125mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**

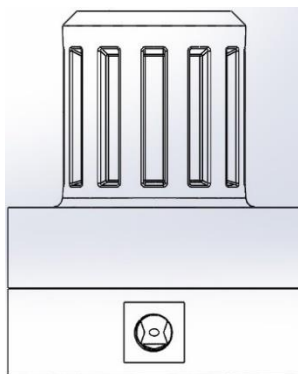


Fig. 1

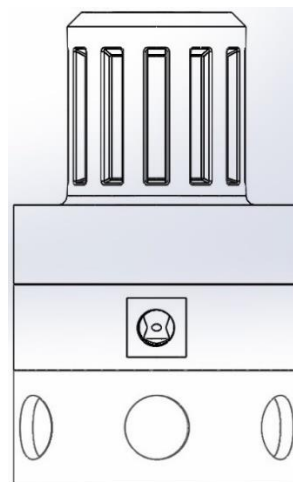


Fig. 2

**Fig. 1 Basic & Fig. 2 Plus Stand
Options - 5"nb Hose**



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

SUBMERSIBLE - TRANSFER - HYDROPONIC



MODEL SIZE 50-152

Bore ID - 50mm + **6"nb Hose**

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Side or Rear Ported

Body Diameter - 200mm

Spigot Diameter - 152mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**

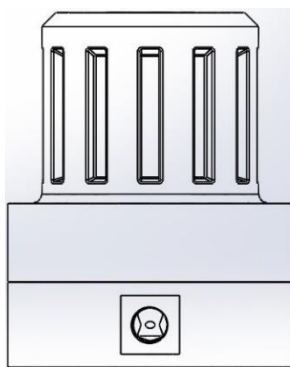


Fig. 1

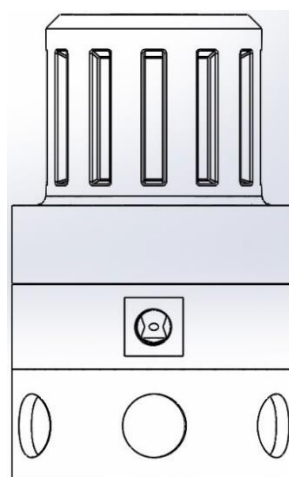


Fig. 2

**Fig. 1 Basic & Fig. 2 Plus Stand
Options - 6"nb Hose**



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

BOREHOLE - TRANSFER



MODEL SIZE 25-125

Bore ID - 25mm

Inlet & Outlet - 1" BSP

NB Other Connections *

Air Supply - 1/2" BSP

NB Top Ported

Body Diameter - 125mm

Spigot Diameter - 50mm

Length/Height - 160mm

Base Stand - +35mm

***Other Connections**



Fig. 1



Fig. 2

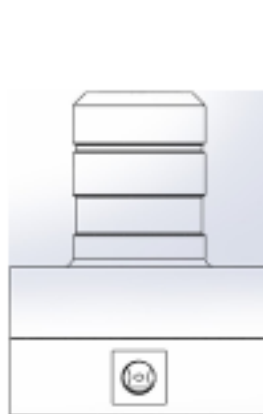


Fig. 3

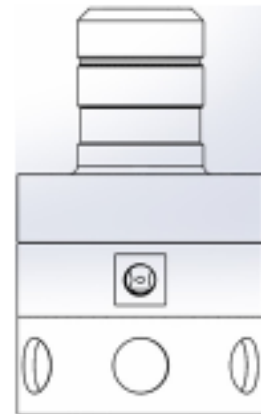


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand - suitable for 5" borehole
Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand - suitable for 5" borehole
Options - 1" BSP, 1-1/4" BSP or 2" BSP Male or 2"nb Hose



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

BOREHOLE - TRANSFER



MODEL SIZE 25-152

Bore ID - 25mm

Inlet & Outlet - 1" BSP

NB Other Connections *

Air Supply - 1/2" BSP

NB Top Ported

Body Diameter - 152mm

Spigot Diameter - 50mm

Length/Height - 160mm

Base Stand - +35mm

***Other Connections**



Fig. 1



Fig. 2



Fig. 3

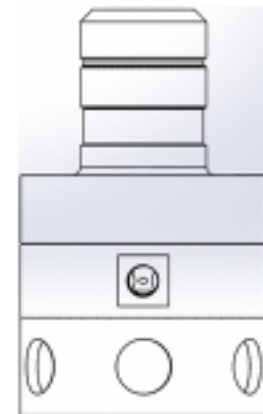


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand - suitable for 6" borehole
Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand - suitable for 6" borehole
Options - 1" BSP, 1-1/4" BSP or 2" BSP Male or 2"nb Hose



tcl-cumbria PRODUCT RANGE - UNITS

WATER-LIQUID PUMPS

BOREHOLE - TRANSFER



MODEL SIZE 50-80-200

Bore ID - 50mm

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Top Ported

Body Diameter - 200mm

Spigot Diameter - 80mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**



Fig. 1

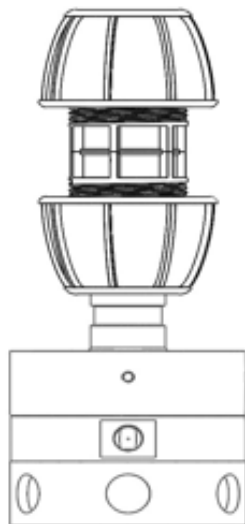


Fig. 2

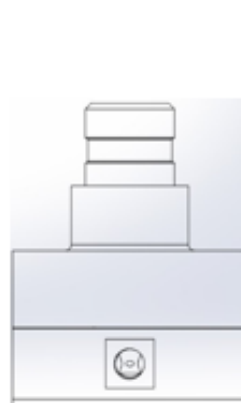


Fig. 3



Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand - suitable for 8" borehole
Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand - suitable for 8" borehole
Options - 2" BSP Male or 3"nb Hose



tcl-cumbria **PRODUCT RANGE - UNITS**

WATER-LIQUID PUMPS

BOREHOLE - TRANSFER



MODEL SIZE 50-100-200

Bore ID - 50mm

Inlet & Outlet - 2" BSP

NB Other Connections *

Air Supply - 3/4" BSP

NB Top Ported

Body Diameter - 200mm

Spigot Diameter - 100mm

Length/Height - 250mm

Base Stand - +80mm

***Other Connections**



Fig. 1



Fig. 2

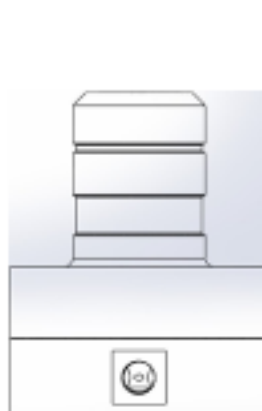


Fig. 3

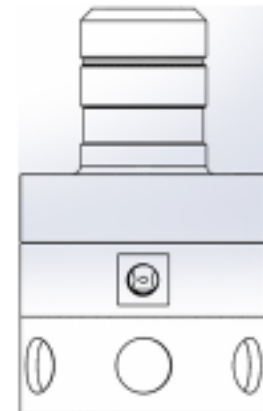


Fig. 4

Fig. 1 Basic & Fig. 2 Plus Stand - suitable for 8" borehole

Options - 50mm OD or 63mm OD Compression

Fig. 3 Basic & Fig. 4 Plus Stand - suitable for 8" borehole

Options - 2" BSP Male or 4"nb Hose



_tcl-cumbria **PRODUCT RANGE - UNITS**
WATER-LIQUID OPERATORS
SUBMERSIBLE - TRANSFER - AGITATION

*****With SEDIMENT DISPERSER-FLUIDISER Attachment*****



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Units fitted with Intermediate Section and Special Stand Assembly with additional Side Port Air Supply Connection

Fig. 1
SIZE 25
PUMP

Fig. 2
SIZE 25
AGITATOR

Fig. 3
SIZE 50
PUMP

Fig. 4
SIZE 50
AGITATOR

Length/Height - 200mm
Base Stand - +35mm

Length/Height - 300mm
Base Stand - +80mm



_tcl-cumbria **PRODUCT RANGE - UNITS**

WATER-LIQUID PUMPS

MAIN BODY INFLATABLE - SEAL or FLOAT RING



MODEL SIZES 25 - 50

Bore ID - 25 - 50mm

Inlet & Outlet - 1" BSP - 2" BSP

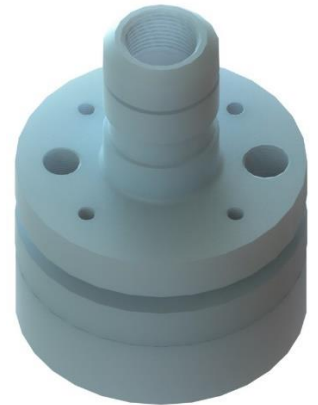
Air Supply - 1/2" BSP - 3/4" BSP

NB Top & Rear Ported

Body Diameter - 100 - 200mm

Spigot Diameter - 50 - 100mm

Length/Height - 160 - 250mm



PRINCIPLES OF APPLICATION

- 1. Seal Unit inserted into tube bore and inflated to hold in position**
- 2. Float Ring Unit with flexible tube and inflated for buoyancy**

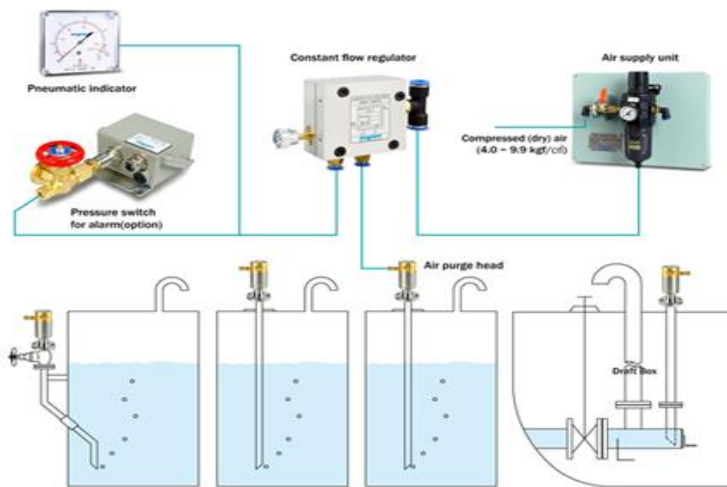


_tcl-cumbria **PRODUCT RANGE - POWER**

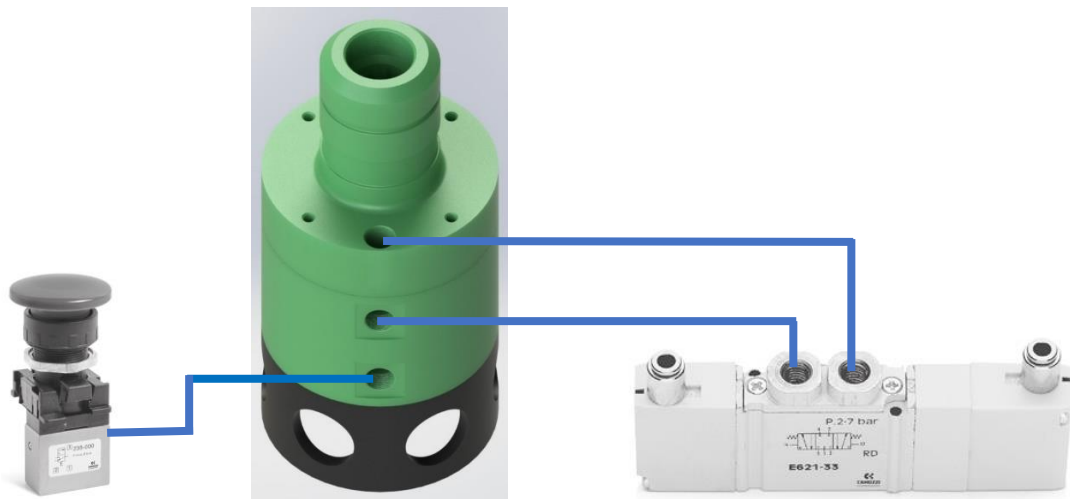
Low Energy Self-Contained Power & Control

Operation of any **GIZZMOTO** using an Air Compressor for Power and for supply to a Pneumatic Control system maximises flexibility to suit all applications - two simple examples are shown below:

LIQUID LEVEL CONTROL TO OPERATE SUBMERSIBLE PUMP



VARIABLE SPEED CONTROL TO OPERATE FLUIDISER-AGITATOR



Manual - Local & Remote

Fully Automatic

Pneumatic - and Electro-Pneumatic - Controls can be designed and built to cater for any **GIZZMOTO** operation, with local and remote panel status indication, to power and control single units or multiples, and coordinated with other equipment.

GIZMOTO – CONCEPT-TOTAL SYSTEM

The following aspects should be considered by all end users when designing and building a bespoke system:

1. **GIZMOTO** – selection of size, type and function, plus materials of construction to give best match for chemical resistance
2. **ASU – Air Supply Unit – Compressed Air Filtration & Pressure Regulation/Indication**
3. **CONTROLS** – choice of pneumatic operating devices – manual, pneumatic and/or electropneumatic; either breadboard assembly or control panel/enclosure
4. **PIPEWORK** - including interconnecting flexible hoses and/or rigid tubing, with fittings
5. **POWER-PACK** – sizing and supply of **Air Compressor with attendant equipment**
NOTE - Part of the testing programme covered the evaluation of devices Compressed Air consumption at relative pressure ranges – 0.5Bar, 1.0Bar, 1.5Bar & 2.0Bar – to then design appropriately sized Compressed Air power supply plant & systems packages, with an analysis of high-pressure storage using demand factors – LOW ENERGY
6. **DESIGN SERVICE** – assessment of application requirements, including mountings, to produce a complete system layout
7. **INSTALLATION** – method (fixed, portable, mobile, floating) & manpower arrangements for site work
8. **COMMISSIONING** – setting-up and checking all operating parameters
9. **OPERATION** – continuous monitoring and cycling of entire system
10. **MAINTENANCE** – implementation of cleaning and rectification procedures

For more information, check out the website:

<https://www.tcl-cumbria.co.uk/gas-liquids-technology-glt/>

Or, send an e-mail to: info@tcl-cumbria.co.uk